
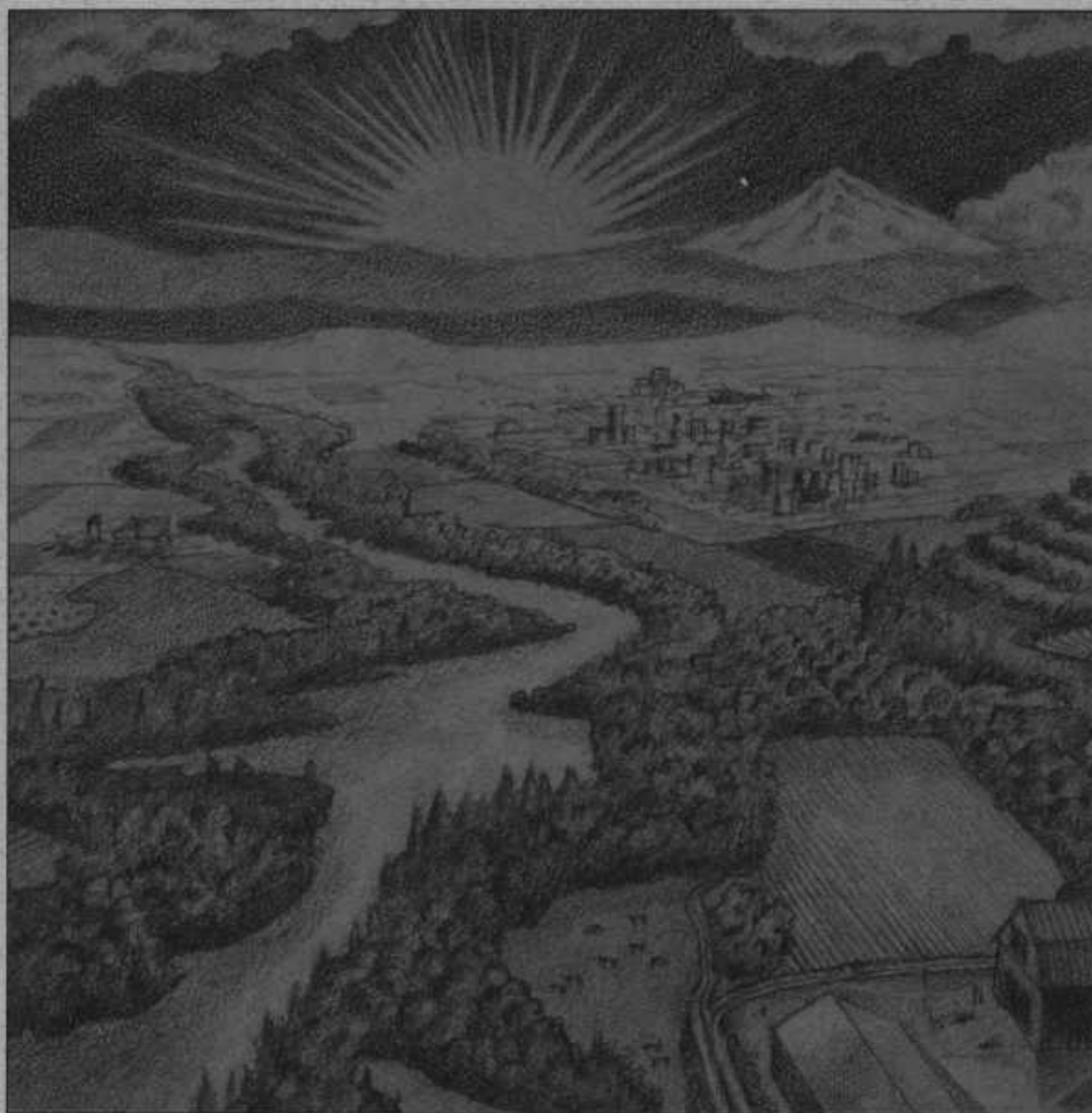


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A Sustainable Agriculture Resource Guide for Oregon and Washington

EM 8531
January 1993



OREGON STATE UNIVERSITY EXTENSION SERVICE

ACKNOWLEDGMENTS

This guide is the culmination of a 3-year project. Our goal was to compile a listing of readily available information to direct farmers to sources of practical information regarding sustainable agriculture. Farmers, and those who advise farmers, tell us of the long hours they spend trying to track down sources of information. It is our hope that this guide will speed up this process. We invite your comments, suggestions, additions, and ideas for possible future editions.

We gratefully acknowledge the assistance provided by Kim McAlear and Kathy Troseth with word processing. And special thanks to Pam Wegner for page layout and design. Thanks also to Evie Liss for her assistance, advise, and sense of humor in helping us to finish this project. Finally, we would like to thank the numerous contributors for their help with tracking down useful sources of information.

CONTRIBUTORS

Katherine L. Adam, information specialist, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Guy K. Ames, technical specialist, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Ari Antonelli, Extension entomologist, Washington State University

Danny L. Barney, Extension horticulturist, University of Idaho

Charles Brun, Extension agent, Washington State University

John Burke, research assistant, Oregon State University

Larry Burt, Extension economist, agricultural marketing, Oregon State University

Lorna Michael Butler, Extension anthropologist, Washington State University

Robert H. Callihan, associate professor, agronomy, University of Idaho

Richard Carkner, Extension agricultural economist, Washington State University

Alan Carr, consultant, Eugene, Oregon

Alan Cooper, agronomist/trainer, Integrated Plant Protection Center, Oregon State University

Stephen G. Diver, technical specialist, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Donna Doel, technical specialist, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Glenn Fisher, Extension entomologist, Oregon State University

Jane Potter Gates, librarian, National Agricultural Library, Washington, DC

David Granatstein, sustainable agriculture project coordinator, Washington State University

Gail Gredler, research assistant, Oregon State University

Norma Grier, executive director, Northwest Coalition for Alternatives to Pesticides

Mike Hackett, Extension agent, Washington State University
John Hart, Extension soil scientist, Oregon State University
Dyvon Havens, Extension agent, Washington State University

Ken Johnson, Extension plant pathology specialist, Oregon State University

Russ Karow, Extension agronomist, cereals, Oregon State University

Eleanor King, Cooperative Extension, Washington State University

Larry S. Lev, Extension economist, agricultural marketing, Oregon State University

Fairlight Lucia, editor, Oregon Tilth, Corvallis, Oregon

Jim Lukens, director, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Don Lund, Computerized Farm Information Systems, Stillwater, Minnesota

Richard Maxwell, Cooperative Extension, Washington State University

Harry MacCormack, executive director, Oregon Tilth, Corvallis, Oregon

Jayne MacLean, librarian, National Agricultural Library, Washington, DC

Kim McAlear, research assistant, Oregon State University

Daniel Green McGrath, Extension agent, Oregon State University

Curt Moulton, Extension agent, Washington State University

Ross Penhallegon, Extension agent, Oregon State University

Christine Rugen, senior technical specialist, Appropriate Technology Transfer for Rural Areas, Fayetteville, Arkansas

Carol Savonen, science communication specialist, Oregon State University

Anne Schwartz, Washington Tilth, Concrete, Washington

Jack Waud, chair, Clallam County Extension office, Washington State University

Ray William, Extension horticulture specialist, weed science, Oregon State University

ILLUSTRATIONS

John F. Graham, Eugene, Oregon

ORDERING INFORMATION

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A Sustainable Agriculture Resource Guide for Oregon and Washington

EM 8531
January 1993

Gwendolyn Bane, former faculty research assistant, *Helene Murray*, sustainable agriculture research and education project associate, and *Richard Dick*, associate professor of soil science, all of the Department of Crop and Soil Science, Oregon State University.

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AGRICULTURAL ORGANIZATIONS

Pacific Northwest Organizations National Organizations

Organizations provide opportunities to network, lobby, and exchange information. The following is a list of organizations with ties to sustainable agriculture issues or activities.

Pacific Northwest

Alternative Energy Resources Organization (AERO)

AERO is a private, nonprofit grassroots organization formed in 1974 dedicated to the development of viable sustainable agricultural marketing and production practices as well as rural community agricultural opportunities and renewable energy education. They sponsor farm tours, on-farm research, and farm improvement clubs in the Northern Rockies and Plains. AERO also serves as a networking link among farmers, researchers, extension agents, policy-makers, and consumers. Membership in AERO includes a subscription to the quarterly AERO Sun Times, and reduced rates on events, publications, and audio and video tapes. Membership rates are: \$25 individual, \$30 family/supporting, \$35 nonprofit organizations, and \$50 commercial. Contributions are tax-deductible

For more information contact:

AERO
44 North Last Chance Gulch
Helena, MT 59601
(406) 443-7272

Aprovecho Institute

Aprovecho means "I make best use of" in Spanish. Aprovecho is a small nonprofit, tax-exempt organization of people from several countries. At the Institute innovative techniques for housing, cooking, heating, and small scale food production are taught and researched.

The Research Center is situated on 40 acres of forested land near Cottage Grove, Oregon. The Institute focuses on providing public information, particularly regarding Third World development and appropriate technology (stoves, fuels, forestry, small-scale agriculture, etc.). Technical inquiries are answered over the phone or by mail. Aprovecho members and the general public are encouraged to use the library. The Center produces two newsletters, *News from Aprovecho* (published 5 times per year) and *Fava News* (published on a trial basis, see *Periodical* section of this guide for more information), and holds a number of workshops each year. Two types of membership available: full members donate 5 working days or \$100 annually; supporting members give \$15

per year or 1/10 of 1% of their annual expenditures. Internships are available, and normally last about 14 months.

For more information contact:

Aprovecho Institute
80574 Hazelton Road
Cottage Grove, OR 97424
(503) 942-9434

**The Association for Regional Agriculture
Building the Local Economy (ARABLE)**

ARABLE is a nonprofit membership association and community investment program serving Oregon. Members of ARABLE open savings accounts in a designated financial institution that earns interest while serving as the basis of the ARABLE loan program. ARABLE is not a lending institution itself, but an association of people agreeing to offer their assets as collateral through an existing financial institution for specific purposes. The goals of the association are to: encourage local production, distribution, and consumption of food and fiber; enhance long-term sustainability of local agriculture; promote mutual interdependence among local populations; and increase direct and indirect local employment. Loans up to \$30,000 for a variety of purposes including equipment purchases, seasonal start-up costs, relocations and inventory buying are considered. Preference is given to farmers practicing sustainable agriculture.

For more information contact:

ARABLE
1175 Charnelton Street
Eugene, OR 97401
(503) 485-7630

Common Ground of Oregon

Common Ground of Oregon is designed to offer emergency assistance to Oregon farm families who are caught in agricultural crises. Money to start the program was generated by Willie Nelson concerts and is designated to provide assistance to families needing money for food, transportation of food supplies, utility bills, and medical supplies. Ecumenical

Ministries of Oregon is the administrator of the program.

For more information contact:

Ecumenical Ministries of Oregon
0245 SW Bancroft Street, Suite B
Portland, OR 97201
(503) 221-1054

Consumers United for Food Safety (CUFFS)

An organization established in 1984 that focuses on food safety and quality issues, including food irradiation and pesticides in food. CUFFS encourages consumers throughout the U.S. to get involved by becoming informed and expressing themselves politically. Membership is \$15 per year and includes four issues of quarterly updates on CUFFS activities and legislative updates.

For more information contact:

CUFFS
P.O. Box 22928
Seattle, WA 98122
(206) 747-2659

Farm Bureau

The Farm Bureau is one of the largest agricultural grass-roots organization in the country, with offices throughout the United States. The Farm Bureau represents members on issues such as policy, legislation and other issues pertinent to agriculture including services such as water testing to members. The Farm Bureau also offers insurance policies to members. Each state office has representatives located throughout the state; for more information about Farm Bureau activities in your area contact one of the offices below.

For more information contact:

Farm Bureau of Oregon
1730 Commercial Street SE
P.O. Box 2209
Salem, OR 97308-2209
(503) 581-1486, ext. 308

Farm Bureau of Washington
1011 - 10th Avenue SE
P.O. Box 2009
Olympia, WA 98507
(206) 357-9975

Farmers for Clean Water

The Farmers for Clean Water project is designed to conduct research with farmers in the Green River Watershed, especially along the Newaukum and Soos Creeks in Washington. The goal is develop practical and reasonable techniques to control farm source pollution. Technical advice on basic water quality guidelines, test procedures, pasture management, and drainage is available. Cooperating Agencies are WSU Cooperative Extension and the King County Conservation District. Contact person: Martha Goodlett, Project Manager.

For more information contact:

Farmers for Clean Water
WSU-CE/King County
506 Second Avenue
Seattle, WA 98104
Phone: 8:30 to 4:30
(206) 296-3900, or
(800) 325-6165 ext. 3900

Friends of the Trees Society

Friends of the Trees Society is a network of individuals, local groups, and international organizations working to preserve forests and plant trees. Membership in the Society is \$10 per year for Regular membership, \$25 for Contributing membership, \$50 for Sustaining membership, and \$250 for Lifetime membership. Founded in 1978, the Society publishes the *Friends of the Trees Catalog*, *Actinidia Enthusiasts Newsletter* (*Actinidia* = kiwi fruit), and the Green Front Report.

For more information contact:

Friends of the Trees Society
P.O. Box 1064
Tonasket, WA 98855
(509) 486-4726

Great Northwest Permaculture Institute

The Institute advocates using ecology as the basis for designing integrated systems of food production, housing, appropriate technology, and community development. Many workshops and courses are offered throughout the year.

For more information contact:

Larry Santoyo
Northwest Permaculture Institute
2073 Marble Valley-Basin Road
Addy, WA 99109
(509) 935-4578

League of Women Voters of Oregon

The League of Women Voters is a non-partisan, political organization. The League seeks to promote active citizen participation in government and provide unbiased information on ballot measures and candidates. The League also studies issues and adopts and promotes positions. Among the environmental issues that have been studied at all levels (local, state, and national) are: air and water quality, the Columbia River Basin, water resources, energy, land use, solid waste, and sustainable agriculture. The League continually watches developments in the Oregon area and can supply information about them to interested citizens. The League has local organizations in cities throughout the state.

For more information contact:

Oregon League of Women Voters
2659 Commercial St. SE, Suite 220
Salem, OR 97302
(503) 581-5722

Northwest Food Processors Association

Provides marketing information.

For more information contact:

Northwest Food Processors Assoc.
2300 SW First Avenue
Portland, OR 97201-5047
(503) 226-2848

Northwest Coalition for Alternatives to Pesticides (NCAP)

NCAP is a nonprofit, tax-exempt organization dedicated to advocating use of alternative means of controlling pests. Information packets, pesticide fact sheets, pesticide packets, and the *Journal of Pesticide Reform* are published by NCAP. For more information about cost and availability of these publications contact NCAP. Membership to the

organization is \$25 per year and includes a subscription to the *Journal*.

For more information contact:

NCAP
1249 Willamette
P.O. Box 1393
Eugene, OR 97440
(503) 344-5044

Oregon Fresh Market Growers Association

An association of growers, retailers, wholesalers, brokers, and related businesses who identify and promote the benefits of buying "Oregon Fresh Grown" agriculture fresh market products. The goal of the group is to offer information to the public on fresh market produce issues, provide networking services among members, and establish a means for obtaining goods and services as an organized group.

For more information contact:

Fresh Market Growers Association
P.O. Box 18
West Linn, OR 97068
(503) 635-4465

Oregon Gourmet Foods

A nonprofit trade organization which publishes a list of specialty food suppliers.

For more information contact:

Oregon Gourmet Foods
P.O. Box 459
Portland, OR
(503) 285-1002

Oregon Tilth, Inc.

Oregon Tilth is a nonprofit educational and research organization which supports and promotes organic and sustainable agriculture in the Pacific Northwest. Established in 1974, Tilth sponsors a number of seminars, conferences, and publishes a monthly newsletter, *In Good Tilth*. Annual membership fee is \$25, which includes a subscription to the newsletter, and allows members to attend Tilth events for free or at a reduced charge. Oregon Tilth is a participant in the national Tilth Placement

Service network, which provides opportunities for apprenticeships on Tilth certified farms. Oregon Tilth also manages the certification of organic foods in Oregon, and works with farmers and university personnel in coordinating on-farm research and demonstration projects.

For more information contact:

Certification Program
P.O. Box 218
Tualatin, OR 97062
(503) 692-4877 office
(503) 691-2514 FAX

Research and Education Program
31615 Fern Road
Philomath, OR 97370
(503) 929-6742 office
(503) 929-6743 FAX

Partnership for Rural Improvement

The Partnership is a consortium of educational institutions, public service agencies and citizens that acts as a catalyst for community improvement in Washington. Established in 1976, the goals are to help communities solve local problems, aid citizens in locating information sources, and to assist in providing community and rural development services.

For more information contact:

Partnership for Rural Improvement
411 Hulbert Hall
Washington State University
Pullman, WA 99164-6230
(509) 335-2937

Portland Vegetarians

An organization for vegetarians in the Portland area. The group meets on a regular basis to discuss issues and concerns. Lectures, workshops and other events are sponsored by the group. Dues are on a sliding scale: suggested contribution is \$12 per year for regular membership, \$6 for students and low-income folks. Dues include a subscription to the monthly newsletter.

For more information contact:

Portland Vegetarians
P.O. Box 19521
Portland, OR 97219
(503) 223-5596

Provender Alliance

The Provender Alliance was established in 1977 as a regional trade organization of Natural Foods Businesses and Associates in the Northwest. The Alliance produces a quarterly journal, holds an annual conference, and provides advocacy and information services for members. Provender has formed a political action committee, PAC: An Association of Natural Foods Advocates, that lobbies for sustainable food and agriculture policies. Membership in the Alliance is \$15 for students and senior citizens, \$25 for individuals, \$40 to \$100 for businesses (dues for businesses are based on annual sales figures).

For more information contact:

Provender Alliance
349 Marion Lane
Eugene, OR 97404
(503) 461-1131

Seattle Tilth

An urban chapter of the Western Washington Tilth Producers Cooperative, Seattle Tilth is a volunteer organization of gardeners interested in ecological food production. Projects include workshops, a demonstration garden, and a monthly newsletter. Membership is \$12 for individuals, \$15 for families, and \$25 for organizations.

For more information contact:

Seattle Tilth Association
4649 Sunnyside Avenue North
Seattle, WA 98103
(206) 633-0451

Skagitonians to Preserve Farmland

Founded in 1989, the goals of the Skagitonians are: to preserve agricultural land for agricultural production; to conduct research and education about the value of farmland; to explore options for private and public efforts to

protect farmland; and, to coordinate political activities regarding land use issues in the Skagit Valley of Washington. Annual membership fees are arranged on a sliding scale, with the minimum membership fee request at \$25, although ability to pay will not preclude people from joining.

For more information contact:

Skagitonians to Preserve Farmland
P.O. Box 261
Burlington, WA 98233

Specialty Foods Group

A private organization in the Seattle area which publishes a monthly newsletter that lists upcoming trade shows.

For more information contact:

Specialty Foods Group
P.O. Box 9668
Seattle, WA 98109
(206) 243-8242
Contact: Diane Easley

STEEP

STEEP, Solutions to Environmental and Economic Problems, is a regional network of producers, land owners, university researchers, USDA scientists, and several federal agencies. Objectives of the project include integrating research on soil, pest, and plant management, erosion control studies, and several federal agencies. Objectives of the project include integrating research on soil, pest, and plant management, erosion control studies, and technology transfer related to conservation farming, water quality, and environmental management.

For more information contact:

Director
Idaho Ag. Experiment Station
University of Idaho
Agricultural Science Building
Moscow, ID 83843
(208) 885-7173

Director
Oregon Ag. Experiment Station
Oregon State University
Strand Agriculture Hall
Corvallis, OR 97331-2201
(503) 737-4251

Director
Washington Ag. Research Center
Washington State University
403 Hulbert Hall
Pullman, WA 99164-6240
(509) 335-4563

Washington Tilth Association

Washington Tilth is a not-for-profit agricultural corporation dedicated to education and promotion of sustainable agriculture. Several local Tilth chapters are located throughout the state. The Association works with organic farmers in Washington (Seattle Tilth works primarily with people interested in urban organic gardening--see their listing earlier in this section). The Association holds meetings and produces a directory annually and periodically publishes a newsletter. Membership rates: \$25 individual or farm; and \$50 for businesses.

For more information contact:

Tilth
P.O. Box 10813
Bainbridge Island, WA 98110
(206) 842-5612

Washington Toxics Coalition (WTC)

A nonprofit, voluntary group of citizens that advocate: groundwater protection based on prevention of pollution; regulations that allow no degradation in water quality; and, research and education to promote reduction of toxics. WTC has prepared a reading list of groundwater educational materials, and publishes a quarterly newsletter called *Alternatives*.

For more information contact:

Washington Toxics Coalition
4516 University Way NE
Seattle, WA 98105
(206) 632-1545

Western Rural Development Center (WRDC)

The WRDC stimulates research and education in the social sciences on issues faced by rural communities. Headquartered at Oregon State University, WRDC works with Agricultural Experiment Stations and Cooperative Extension services within the Land Grant University system in the 13 western states and in American territories in the Pacific. The Center publishes a number of resources including books, slides, and video tapes. For a publications list contact your local county extension agent or one of the offices listed below.

For more information contact:

WRDC
University of Idaho
Moscow, ID 83843
(208) 885-6639

WRDC
Oregon State University
Corvallis, OR 97331
(503) 737-2711

WRDC
Washington State University
Pullman, WA 99164
(509) 335-2933

Western United States Agricultural Trade Association (WUSATA)

A nonprofit regional trade association formed to promote export of high-value products from western U.S. food and agricultural firms. The Directors from State Departments of Agriculture in twelve western states direct the activities of the Association. This association provides a link between international food buyers, Western U.S. suppliers, state agricultural agencies, and the Foreign

Agricultural Service of the USDA. One of their programs, Value-Added Promotion Program (TEA/VAPP), is a cost-matching program assisting producers of high-value food products (fresh and processed foods and beverages) in their overseas marketing programs. Eligible activities include advertising, production of promotional materials, and in-store merchandising. An information packet and application forms are available by contacting one of the western state department of agriculture offices or WUSATA.

For more information contact:

WUSATA
13101 NE Highway 99, Suite 200
Vancouver, WA 98686-2786
(206) 574-2627

Willamette Valley Tree Fruit Growers Association (WVTFGA)

The Tree Fruit Growers Association meets several times during the year to discuss production, marketing, and fruit quality issues. They also organize orchard tours each summer. Annual dues are \$20; dues include a subscription to the *Valley Orchardist*, a newsletter published three times per year.

For more information contact:

WVTFGA
P.O. Box 70
Hillsboro, OR 97123

Jeff Olsen, Advisor
Yamhill County Extension Office
2050 Lafayette Avenue
McMinnville, OR 97128
(503) 434-7517

NATIONAL ORGANIZATIONS

Alternative Farming Systems Information Center

The Center is one of twelve specialized information centers of the National Agricultural Library, the main library of the USDA. The Center issues bibliographies from the Library's Quick Bibliography Series. The "QB's" average about 20 pages in length and contain between 100 and 300 citations from the AGRICOLA database. Those in high demand are updated and reissued with new numbers. New QB's are published on a regular basis, a current listing can be obtained by contacting the Center. The references cited in the series are generally of a technical, research-oriented nature from refereed journals. The bibliographies are available free of charge. Special Reference Briefs (SRB) are also periodically released by the Center. Some of the titles are listed after the Quick Bibliographies list. To request copies, send name and number of the publication desired and a self-addressed, gummed label.

For more information contact:

Alternative Farming Systems
Information Center
National Agricultural Library
Room 111
Beltsville, MD 20705-2351
(301) 344-3704

QB No. Title

- | | |
|----------|---|
| QB 91-90 | <i>Agricultural Meteorology and Remote Sensing</i> , February 1991, 146 citations |
| QB 90-27 | <i>Agroforestry Systems</i> , J. MacLean, December 1989, 20 p. |
| QB 90-28 | <i>Air Pollution Effects on Crops and Forests</i> , J. Gates, February 1990 |
| QB 90-46 | <i>Allelopathy: The effects of chemicals produced</i> , H. Gilbert, April 1990 |
| QB 90-25 | <i>Alternative Crops</i> , K. Schneider, February 1990 |

- QB 90-79 *Alternative Farming Systems - Economic Aspects*, K., 12 p. Schneider, August 1990, 66 p.
- QB 90-29 *Amaranths for Food or Feed*, J. Gates, February 1989, 23 p.
- QB 90-82 *Beekeeping in the United States*, C. Kopolow, September 1990, 35 p.
- QB 91-102 *Biodegradable and Photodegradable Plastics*, March 1991, 104 citations.
- QB 91-107 *Biotechnology: Genetic Engineering for Crop Plant Improvement*, March 1991, 405 citations
- QB 91-112 *Biotechnology and Bioethics*, March 1991, 64 citations.
- QB 90-92 *Bt (Bacillus Thuringiensis) for Biocontrol*, J. MacLean, September 1990, 34 p.
- QB 89-75 *Breeding and Selecting Crops for Insect Pest Resistance*, J. MacLean, June 1989, 30 p.
- QB 91-65 *Climate and Insect Pests*, January 1980-December 1990, 219 citations.
- QB 91-67 *Climate and Plant Disease*, January 1980-December 1990, 292 citations.
- QB 91-68 *Climate and Corn Production*, January 1980-December 1990, 191 citations.
- QB 91-101 *Climate, Fertilizers, and Soil Fertility*, February 1991, 142 citations.
- QB 91-27 *Composts and Composting of Organic Wastes*, J. MacLean, November 1990, 46 p.
- QB 90-15 *Conservation Tillage, Including Minimum and No-Tillage*, J. MacLean, December 1989
- QB 90-40 *Cultural or Mechanical Weed Control*, J. MacLean, April 1991, 209 citations.
- QB 91-96 *Cut Flower Production*, April 1991, 184 citations
- QB 89-97 *Double Cropping and Interplanting*, J. MacLean, May 1991, 334 citations
- QB 91-23 *Drip and Trickle Irrigation*, J. MacLean, November 1990, 81 p.
- QB 91-61 *Dryland Farming*, H. Gilbert, March 1991, 23 p.
- QB 90-63 *Earthworms in Agriculture*, J. Rafats, July 1990, 19 p.
- QB 90-50 *Ecology of Tropical Rainforests*, J. Gates, May 1990, 25 p.
- QB 90-01 *Farming Systems Research*, J. MacLean, October 1989, 18 p.
- QB 89-60 *Farmland Preservation*, J. MacLean, May 1989, 16 p.
- QB 90-76 *Forage Legumes*, J. MacLean, August 1990, 30 p.
- QB 91-121 *Fruit Orchards*, April 1991, 270 citations.
- QB 90-56 *Global Warming and the Greenhouse Effect*, J. MacLean, June 1990, 28 p.
- QB 89-58 *Green Manures and Cover Crops*, J. MacLean, May 1989, 28 p.
- QB 90-62 *Ground Water Contamination*, H. Gilbert, June 1990, 32 p.
- QB 89-51 *Herbicide Resistance*, March 1991, 296 citations.
- QB 89-34 *Herbicides: Ecological Effects*, J. MacLean, February 1989
- QB 90-77 *Hydroponics: Nutrient Film Technique*, H. Gilbert, August 1990, 51 p.
- QB 90-47 *IPM and Biological Control of Plant Pests: Horticultural Crops*, J. MacLean, May 1990, 37 p.
- QB 91-70 *IPM and Biological Control of Weeds*, J. MacLean, April 1991
- QB 90-02 *Legumes in Crop Rotations*, J. MacLean, October 1989, 27 p.
- QB 90-71 *Manures: Uses, Costs and Benefits*, J. MacLean, August 1990, 25 p.
- QB 89-77 *Nonpoint Source Pollution, an Agricultural Concern*, J. MacLean, June 1989, 20 p.

- QB 90-75 *Part-time Farming*, J. MacLean, August 1990, 16 p.
- QB 91-72 *Raising Quail, Pheasants, Partridge, Bobwhites and Ostriches*, J. Larson, April 1991, 21 p.
- QB 91-105 *Reforestation and Afforestation*, March 1991, 160 citations.
- QB 90-03 *Rotational Grazing and Intensive Pasture Management*, J. MacLean, October 1989
- QB 91-99 *Seaweed Culture and Uses*, September 1990, 209 citations.
- QB 91-78 *Sewage Sludge in Agriculture*, January 1983-February 1991, 152 citations
- QB 90-14 *Small Farms and Farming in the U.S.*, J. MacLean, December 1989, 27 p.
- QB 90-57 *Societal Impacts of Adoption of Alternative Agricultural Practices*, J. MacLean, June 1990, 16 p.
- QB 91-24 *Soil Organic Matter: Impacts on Productivity*, K. Scheider, November 1990, 46 p.
- QB 91-103 *Soil Testing & Plant Analysis for Fertilizer Recommendations* K. Schneider, March 1991, 193 citations
- QB 91-84 *Solar Energy Alternatives for Agriculture*, January 1986-March 1991, 257 citations
- QB 91-95 *Sustainable or Alternative Agriculture*, J. MacLean, January 1991
- QB 91-120 *Tropical Fruits*, April 1991, 270 citations
- QB 90-64 *Wastewater Irrigation*, K. Schneider, August 1990, 16 p.
- QB 91-37 *Wind Energy for Agriculture*, S. Chanpman, December 1990

SRB No. Title

- SRB 88-04 *Raising Snails*, S. Cheney, March 1988, 15 p.
- SRB 90-04 *Organic Certification*, J. Gates, December 1989, 9 p.
- SRB 91-04 *Transition Toward a Sustainable Agriculture*, J. Gates and C. Tant, December 1990, 25 p.

American Farmland Trust (AFT)

AFT is a not-for-profit organization formed in 1980 to promote: farmland preservation and protection through legislation; financial and real estate transactions to assist endangered farms; and lobbying. AFT also coordinates an Information Clearinghouse, designed to distribute information about farmland preservation. Membership fees are tax-deductible: \$15, white ribbon member; \$30, red ribbon member; \$60, blue ribbon member.

For more information contact:

American Farmland Trust
National Office
1920 N Street, Suite 400
Washington D.C. 20036
(202) 659-5170

Appropriate Technology Transfer for Rural Areas (ATTRA)

A national USDA Extension Service program managed by the National Center for Appropriate Technology (NCAT). ATTRA provides cost-free information and technical assistance to farmers, agribusiness organizations, agricultural support groups, and other interested individuals on low-input and sustainable agriculture practices and related technologies.

ATTRA is equipped to respond to the needs of horticultural, agronomic, and livestock operators of any scale. ATTRA advocates trying local sources of information, such as Cooperative Extension, before contacting them, but they will seek information not readily available through local Extension offices.

Requests for technical information may be initiated in writing or by calling the ATTRA toll-free phone line. Questions are answered via the mail. Each request is referred to the appropriate Technical Specialist, who reviews literature in the ATTRA Resource Center, contacts relevant research agencies and specialists, and searches databases. The amount of time spent on each question is limited to three or four hours, so the response is more than cursory but less than exhaustive. Based on the current number of requests for information the average reply takes four to six weeks; however, ATTRA does have several packets of information on commonly requested topics, which will reduce the amount of time it takes to receive a reply. For business other than information requests the phone number is (501) 575-7570.

For more information contact:

ATTRA
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

Bio-Dynamic Farming and Gardening Association, Inc.

A nonprofit organization that promotes the practices and principles of biodynamic agriculture. Organized in 1938, the Association supports a quarterly magazine, publishes books, offers a biodynamic advisory service, supports training programs, sponsors conferences and lectures, funds research projects, and supplies biodynamic preparations. Basic membership rate is \$20 per year, contributing membership is \$30 per year, and supporting membership is \$50 per year.

For more information contact:

Biodynamic Association
National Office
P.O. Box 550
Kimberton, PA 19442
(215) 935-7797

Bio-Integrated Resource Center (BIRC)

A nonprofit corporation undertaking research and education in integrated pest management (IPM). BIRC members receive help with pest management questions and a subscription to the *IPM Practitioner* (IPMP). Membership for institutions, libraries, or businesses is \$50 per year; \$25 per year for individuals; \$18 per year for registered students. Dual membership includes a subscription to both the IPMP and the *Common Sense Pest Control Quarterly*: \$75 per year for institutions, and \$45 for individuals. Donations to BIRC are tax-deductible.

For more information contact:

BIRC
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

California Action Network (CAN)

CAN is a grassroots political organization designed to promote organic farming and organic farmers. CAN publishes the *Organic Wholesalers Directory & Yearbook: Organic Food and Farm Supplies* (see the Market Directories section of this handbook for more information about the CAN directory). General membership is \$15 annually, \$25 for supporting/nonprofit membership, and \$50 for commercial membership. Membership includes a subscription to the *Agrarian Advocate*, a quarterly newspaper-style publication.

For more information contact:

California Action Network
P.O. Box 464
Davis, CA 95617
(916) 756-8518

Center for Holistic Resource Management

The Center for Holistic Resource Management (HRM) is a nonprofit membership organization established in 1984. The Center sponsors a number of workshops and courses throughout the country on farm profitability, land and ranch development, and long-range planning. Publications discuss many aspects

of agriculture including biological control, grazing management, and financial planning. Contact the Center for a list of publications and price list. General membership is \$30 per year, \$15 for students and senior citizens, and \$50 for businesses/institutions. Membership includes a subscription to the *Savory Letter*, a quarterly 20-page newsletter.

For more information contact:

Center for HRM
800 Rio Grande Blvd. NW, Room 12
Albuquerque, NM 87104
(505) 242-9272

The Center for Rural Affairs

Formed in 1973 by rural Nebraskans, the private nonprofit organization provides a forum to discuss social, economic, and environmental issues affecting rural America, especially in the Midwest and Plains region. The Center for Rural Affairs (CRA) is governed by a volunteer board consisting of farmers, ranchers, educators, and business people, but is not a membership organization. The Center publishes the *Center for Rural Affairs Newsletter*, the *Small Farm Advocate*, and the *Rural Enterprise Reporter*. The newsletter and the Reporter are available free. Subscription to the *Advocate* is \$10 per year for individuals and nonprofit organizations, \$15 for others. Funding for the Center is from sale of publications, private donations, and through grants and foundations. A publications list is available upon request.

The Center also runs the CRA Sustainable Agriculture Project (earlier projects included the 1976-83 Small Farm Energy Project and the Small Farm Resources Project from 1983-87). The current sustainable agriculture project conducts on-farm research, workshops, policy research, and information dissemination.

For more information contact:

Center for Rural Affairs Main Office
P.O. Box 405
Walthill, NE 68067
(402) 846-5428

Center for Rural Affairs
Sustainable Agriculture Project
P.O. Box 736
Hartington, NE 68739
(402) 254-6893

Center for Science in the Public Interest (CSPI)

CSPI is a nonprofit consumer and health advocacy organization founded in 1971. CSPI is the lead organization for Americans for Safe Foods (ASF), a coalition of over 80 consumer, environmental, farm, and rural advocacy groups working on food safety issues. The Center also publishes the *Nutrition Action Healthletter* (NAH) 10 times each year. Subscription to the NAH is \$19.95 per year. The CSPI also publishes a number of books, software, and educational posters.

For more information contact:

CSPI
1501 - 16th Street NW
Washington D.C. 20036
(202) 332-9110

CONCERN, Inc.

CONCERN, Inc., founded in 1970, is a nonprofit organization which provides environmental information and guidelines for community action on a variety of issues including waste management, soil and water conservation, and groundwater quality. The goal of the organization is to help communities find solutions to environmental problems.

CONCERN, Inc. publishes the following booklets: *Waste: choices for communities*; *Farmland: a community issue*; *Drinking Water: a community action guide*; *Groundwater: a community action guide*; *Pesticides: a community action guide*; and, *Household Waste: issues and opportunities*. Booklets are available for \$3 each.

For more information contact:

CONCERN, Inc.
1794 Columbia Road, NW
Washington D.C. 20009
(202) 328-8160

Demeter Association

An association which carries out the certification and evaluation of farms using biodynamic methods. The Demeter Association has guidelines for certification of three classes of farms using biodynamic methods, from transitional to the model of an ideal Demeter farm. The Demeter Association is associated with the internationally recognized Demeter trademark organizations worldwide.

For more information contact:

Demeter Association
4214 National Avenue
Burbank, CA 91505
(818) 843-5521

Healthy Harvest

Healthy Harvest: A Global Directory of Sustainable Agriculture and Horticulture Organizations offers over 1,400 listings and full descriptions of agriculture and horticulture training institutes, research centers, development programs advocacy groups, university programs, and businesses involved in all aspects of sustainable agriculture. Listings are cross indexed and include full descriptions, contact names, and phone numbers. Updated every two years. \$19.95 plus \$3 handling.

Available from:

agAccess
603 Fourth Street
Davis, CA 95616
(916) 756-7177

Institute for Alternative Agriculture (IAA)

The Institute is a nonprofit tax-exempt research and education organization established in 1983. IAA works directly with government agencies, educational institutions, and producer groups on alternative and sustainable agriculture issues. The Institute prints a number of publications including the *Alternative Agriculture News*, the *American Journal of Alternative Agriculture*, and *Symposium Proceedings* from IAA's annual scientific symposia. Regular membership is \$15 per year; \$7.50 for students. Membership includes a subscription to the *Alternative Agriculture*

News. A subscription to the Journal is \$20 for individuals and \$10 for students.

For more information contact:

Institute for Alternative Agriculture
9200 Edmonston Road
Greenbelt, MD 20770
(301) 441-8777

The Kerr Center for Sustainable Agriculture, Inc.

The Kerr Center is a private, nonprofit research ranch and farm in Southeastern Oklahoma. The Center maintains 4,150 acres of pasture, woodland, and waterways. The operation includes over 500 head of cattle and other livestock. The program includes research and development projects, and extension and educational activities. The Center program builds on 20-plus years of work by its predecessor, The Kerr Foundation Agricultural Division. In 1985 the Kerr Center for Sustainable Agriculture was formed to continue the pasture and livestock management projects, but with a broader approach. The Center publishes a free monthly newsletter, sponsors internship programs, and supports a library and learning center within the Kerr Center.

For more information contact:

The Kerr Center for Sustainable Agriculture
P.O. Box 588
Poteau, OK 74953
(918) 647-9123

The Land Institute

The Land Institute conducts programs at its 275 acre site, which includes 100 acres of native prairie. A nonprofit education and research organization founded in 1976, the Institute is devoted to sustainable agriculture and stewardship. The Land offers post-graduate internships, serves as a study center of environmental and agricultural issues, and conducts research into the development of a sustainable agriculture based on the model of the prairie. The Land Institute also hosts the annual Prairie Festival.

For more information contact:

The Land Institute
2440 East Water Well Road
Salina, KS 67401
(913) 823-5376

Land Stewardship Project (LSP)

Founded in 1982, the LSP is a private, nonprofit education program working to address rural resource questions in the Midwest. The LSP publishes a newsletter, books, videos, and conducts on-farm research and demonstrations. A Resource Catalog listing publications and an order form is available. Contributions are tax-deductible, and a minimum donation of \$20 per year includes a subscription to *The Land Stewardship Letter*, a quarterly journal, and to *Horizons*, a bi-monthly technical newsletter. Both publications may be ordered by subscription as well.

For more information contact:

Land Stewardship Project
14758 Ostlund Trail North
Marine on St. Croix, MN 55047
(612) 433-2770

The Leopold Center for Sustainable Agriculture

Established by the Iowa Legislature, the Leopold Center's work focuses on research and educational programs on the environmental, social, and economic impacts of agricultural production systems. The Center publishes the *Leopold Letter* a quarterly publication, available free.

For more information contact:

Leopold Center
3203 Agronomy Hall
Iowa State University
Ames, IA 50011
(515) 294-3711

Northern Plains Sustainable Agriculture Society (NPSAS)

A nonprofit educational society, founded in 1979. The Society gathers and shares information that enables members to develop a more sustainable agriculture system on individual farms. Workshops, conferences, and farm tours are held. Associate membership is \$10 per year, and includes a newsletter subscription.

For more information contact:

NPSAS
Rural Route 1, Box 73
Windsor, ND 58424
(701) 763-6287

Natural Organic Farmers Association (NOFA)

The Natural Organic Farmers Association is a group of farmers and supporters of organic farming throughout the U.S.

For more information contact:

NOFA
RFD #2
Barre, MA 01005
(508) 355-2853

Organic Foods Production Association (OFPANA) of North America

OFPANA is the trade association for North America's organic food industry. Its goals are to promote the organic food trade by promoting public awareness and understanding of organic foods, and increasing sales, profits, and the economic sustainability of the trade. They also work to protect the organic guarantee by providing a unified position on legislative, regulatory, and policy issues that affect the trade of organic products. Subscriptions to the monthly newsletter are free for members and \$50 per year for non-members.

For more information contact:

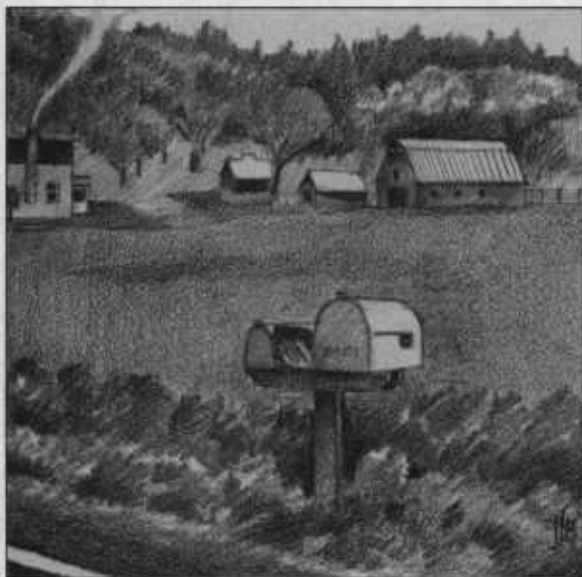
OFPANA
P.O. Box 1078
Greenfield, MA 01301
(413) 774-7511

**Resource Efficient Agricultural Production
for Canada (REAP-CANADA)**

REAP sponsors field days and conferences, publishes educational materials including research reports and videos. Membership is \$15 Canadian (\$16 U.S.) per year from date of receipt, and includes a subscription to the *Sustainable Farming* magazine, and discounts on registration fees for conferences, field days, and educational materials.

For more information contact:

REAP-CANADA
Box 125, Glenaladale House
Ste. Anne de Bellevue
Quebec H9X 1CO
(514) 398-7743 office
(514) 398-7972 FAX



PERIODICALS

Pacific Northwest Focus National Focus

There are numerous journals, magazines and newsletters with information pertinent to sustainable agriculture issues. The following list contains publications that include practical ideas and applied research results. For the most part, periodicals that include basic research information and results have been omitted. For more information about research findings, visit an agricultural library or ask your local librarian to assist you in obtaining publications from the Interlibrary Loan Service.

PACIFIC NORTHWEST

The Agriculture Quarterly

The Agriculture Quarterly reports on activities of interest to Northwest farmers and ranchers and on activities the Oregon Department of Agriculture coordinates. Available free.

The Agriculture Quarterly
Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97310-0110
(503) 378-3773

The AERO Sun Times

The Alternative Energy Resource Organization's (AERO) quarterly magazine covering sustainable agriculture, resource conservation, and community self-reliance. The magazine is a benefit of AERO membership (see the *Organization* section for membership information) or is available by subscription. Individual subscription rate is \$15.

AERO

44 North Last Chance Gulch #9
Helena, MT 59601
(406) 443-7272

The Berry Basket

A quarterly newsletter published by Washington State University regarding berry crop research and extension activities in the Pacific Northwest. Available free.

WSU-CE/Clark County
Attention: Charles Brun
800 Franklin, Suite E
Vancouver, WA 98660
(206) 696-8411 Office
(206) 696-8403 FAX

Caneberry Newsletter

A bi-monthly publication of Oregon State University. Discusses caneberry research and extension activities in Oregon. No charge.

North Willamette Research and
Extension Center
15210 NE Miley Road
Aurora, OR 97002
(503) 678-1264

The Capital Press

The largest weekly agricultural newspaper in the Pacific Northwest. The Capital Press covers the entire range of issues related to agriculture including production, policy, consumer concerns, and legislative issues. Subscription rate is \$30 for one year, \$45 for two years.

The Capital Press
P.O. Box 2048
Salem, OR 97308
(503) 364-4431

Commodity Trends

A newsletter containing market news information on a wide variety of commodities with information such as current, prior week, and year-ago prices; livestock production figures; and highlights of agricultural news. Published 49 weeks per year, subscriptions are \$32 per year.

Market News
Department of Agricultural and
Resource Economics
Ballard Extension Hall, Room 213
Oregon State University
Corvallis, OR 97331-3601
(503) 737-1438

Farmer-Stockman

There are different versions of the monthly publication targeted at farmers and stockmen in Idaho, Oregon, Washington, Montana, Utah, and Arizona. The main articles of each issue are the same for each of the publications, but locally relevant information is reported in each regional issue. The publication covers a wide variety of crop and livestock topics including:

production, marketing, shows and sales, and family and home information. Subscription price: Single issue: 75¢; \$9 per year.

Farmer-Stockman
P.O. Box 2160
Spokane, WA 99210-1615
(509) 459-5361

Fava News

A new publication of the Aprovecho Institute (see the *Organizations* section of this guide for more information about Aprovecho). In April 1990 the first issue of the Fava News was distributed on a trial basis (about 100 copies were printed). If enough people are interested, Aprovecho will continue the newsletter. Currently there is no charge for the 6-page publication, but to receive copies contact Aprovecho with the following information: your interest in favas, and ideas for establishing a network with other fava enthusiasts in North America.

Aprovecho Institute
80574 Hazelton Road
Cottage Grove, OR 97424
(503) 942-9434

Friends of the Trees Newsletters

The *Friends of the Trees Newsletter* highlights information about the Friends of the Trees projects, as well as work of other conservation organizations. Sustainable agriculture, forestry, and international travelers networks are reported on in the sporadically published newsletter. Subscription is via membership in Friends, \$10 per year, \$250 for lifetime membership. The *Actinidia Enthusiasts Newsletter* (AEN) prints information on propagation, breeding, growing, processing, and marketing kiwi fruit. Printed as information becomes available, Issues 4 and 5 of AEN are still available. Issue 4 (72 pages) is \$5, Issue 5 (116 pages) is \$10.

Friends of the Trees
P.O. Box 1064
Tonasket, WA 98855
(509) 486-4726

Growing Edge

A quarterly magazine focusing on "high-tech gardening." The publication is targeted primarily at home gardeners but also provides information applicable to greenhouse, hydroponic, and specialty herb operations. Yearly subscriptions are \$17.95 for second-class delivery, \$24.95 for first-class delivery; Canadian subscriptions are \$24.95. A sample issue is \$6.50 for first-class delivery.

New Moon Publishing, Inc.
215 SW Second Street, Suite 201
Corvallis, OR 97333
(503) 757-0027
(800) 888-6785

The Herb Market Report

A monthly newsletter published by the Organization for Advancement of Knowledge (OAK) for both the herb farmer and forager, developed to provide detailed information on specific crops. Each month, the newsletter features two herbs. Included is specific information on a complete farm plan and a forage plan, harvest and drying techniques for each, processing and storage requirements, and marketing options. Sections on cottage industries, major market trends, and a book review are also featured. Subscription rate is \$12 per year; sample issues are \$1.50 each. Back issues since 1985 are also available.

OAK
1305 Vista Drive
Grants Pass, OR 97527
(503) 476-5588

In Good Tilth

Published monthly by Oregon Tilth primarily addressing issues of concern to certified organic production in Oregon. Members of Oregon Tilth receive a subscription (see the *Organizations* section of this guide for more information), non-members may subscribe for \$15 per year, \$28 for a two-year subscription.

Oregon Tilth Research and
Education Office
31615 Fern Road
Philomath, OR 97370
(503) 929-6742

Journal of Pesticide Reform

Published four times per year by the Northwest Coalition for Alternatives to Pesticides (NCAP). The Journal is available through membership in NCAP (see *Organization* section of this guide), or by subscription, \$15 for four issues.

NCAP
P.O. Box 1393
Eugene, OR 97440
(503) 344-5044

Market Kiosk

A trade association newsletter published quarterly by The Washington State Farmers' Market Association.

Washington State Farmers' Market
Association
11910-C Meridian East, Suite 29
Puyallup, WA 98373
(206) 254-5280

Marketing Trade Facts

A Washington State Department of Agriculture (WSDA) newsletter offering information for buyers and sellers of food and agricultural products. Quarterly; available free.

WSDA-Marketing Trade Facts Newsletter
Natural Resources Building
1111 Washington Street SE
Olympia, WA 98504
(206) 902-1915

Oregon Insider

A bi-weekly (24 times per year) digest of environmental news, the *Insider* is published by the Oregon Environmental Foundation. The Foundation is a nonprofit corporation working on education and research associated with the Oregon Environmental Council. The 10-page newsletter covers topics related to agriculture,

forestry, hazardous and solid wastes, land use, water quality, and upcoming events. Annual subscription rates are \$245, including first-class delivery, and \$135 for private, nonprofit organizations.

Oregon Insider
Oregon Environmental Foundation
2637 SW Water Avenue
Portland, OR 97201
(503) 222-2252

Oregon's Agricultural Progress

Published by the Oregon Agricultural Experiment Station four times per year. The magazine-style publication is available at no charge. It is a report to taxpayers, who help fund Oregon Agricultural Experiment Station research, and covers a wide range of issues.

Editor, Oregon's Agricultural Progress
OSU Agricultural Communications
Administrative Services, A422
Corvallis, OR 97331-2119
(503) 737-3311

Pacific Northwest Sustainable Agriculture: *Farming for Profit and Stewardship*

A quarterly newsletter of the USDA West Cascades Sustainable Agriculture Research and Education (SARE, formerly known as LISA) project in cooperation with Washington and Oregon State Universities Cooperative Extension Services. The 8-page newsletter disseminates PNW research findings, commodity-specific production information, and highlights events, people, and resources of interest to Northwest growers. Available at no charge.

PNW Sustainable Agriculture
c/o Jack Waud
WSU-CE/Clallam County
223 East Fourth Street
Port Angeles, WA 98362
(206) 452-7831

Provender Journal

The Provender Alliance is a trade association of natural foods businesses throughout Oregon, Washington, Montana, northern California, and Canada. The quarterly newsletter is available through membership in the Provender Alliance. Single copies are available.

The Provender Alliance
349 Marion Lane
Eugene, OR 97404
(503) 461-1131

Sensible Agriculture

A newsletter on low-input practices for farmers. Features include practical information and advice on cutting farm input costs. Charter subscriptions for 12 monthly issues are \$39.

Northcutt Communications
P.O. Box 1921
Bothell, WA 98041-1921

Small Farmers Journal

Published four times per year in a newsprint format. An international publication that focuses on the suitability and feasibility of animal-powered methods and technology for farm power. A philosophical journal, striving to protect diversity and honor poetry in farming. The journal discusses why people farm as well as how they farm. Subscription rate: \$17 per year.

Small Farmers Journal, Inc.
P.O. Box 2805
Eugene, OR 97402
(503) 683-6486

Soundwaves

A monthly newsletter published by the Puget Sound Water Quality Authority. Topics covered are wetlands, nonpoint source pollution, water quality and agricultural water issues.

Puget Sound Water Quality Authority
217 Pine Street, Suite 1100
Seattle, WA 98101
(206) 464-7320 or (800) 54-SOUND

Sustainable Farming Quarterly

An 8-page quarterly newsletter of the 6-state (WA, OR, ID, MT, WY, and UT) Dryland Cereal/Legume LISA Project and the Alternative Energy Resources Organization (AERO). The newsletter highlights information on dryland farming systems, cereal and legume cropping systems, events, and promotes grower networking in the region. Available free.

AERO

Sustainable Farming Quarterly
44 North Last Chance Gulch #9
Helena, MT 59601
(406) 443-7272

The Thymes

Published monthly by the First Alternative Cooperative, the newsletter includes articles on health, nutrition, farming, and marketing. Copies are available for no charge in the store each month; mail order subscriptions are \$10 per year.

First Alternative Cooperative
1007 SE Third Street
Corvallis, OR 97333
(503) 753-3115

Trade Facts

A newsletter designed for buyers and sellers of food and agricultural products. Published quarterly, available free.

Washington State Department of
Agriculture
406 General Administration Bldg.
Olympia, WA 98504
(206) 586-8720

Water Talk

This newsletter is published periodically by the U.S. EPA Region 10 Water Division. Its purpose is to provide news and information from various environmental programs that deal with water issues.

EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-1465

NATIONAL PUBLICATIONS

Acres U.S.A.

A newspaper-style publication, published monthly. One of the first "alternative agriculture" monthly publications, the intent is to supply information to farmers and ranchers interested in eco-agriculture. Subscription rates are \$14 per year, single issue price is \$2.25.

Acres U.S.A.
Box 9547
Kansas City, MO 64133
(818) 737-0064

Agrarian Advocate

The quarterly publication of the California Action Network (CAN). CAN is a California statewide, nonprofit, grassroots organization dedicated to promoting and increasing the welfare of family farmers, farmer workers, and other rural dwellers. The newsletter is compiled by volunteers. A newspaper-style publication that includes articles of concern to rural dwellers. Primary focus is on California. Subscription is by membership in CAN; individual rates start at \$15 per year, business rates are \$50 per year.

Agrarian Advocate
P.O. Box 464
Davis, CA 95617
(916) 756-8518

Agricultural Research

Published 10 times per year by the USDA Agricultural Research Service. The magazine addresses issues of general interest in agriculture as well as specific farming techniques and research being conducted throughout the country. The October 1989 issue focused on sustainable agriculture. Current subscription rate is \$14 per year.

Superintendent of Documents
Government Printing Office
Washington, D.C. 20402-9325
(202) 783-3238

Alternative Agriculture News and the American Journal of Alternative Agriculture

Both are published by the Institute for Alternative Agriculture (IAA). The "News" is a monthly newsletter addressing national LISA-related topics, and the "Journal" is a quarterly magazine-style publication. Both publications address issues related to agricultural sustainability, including policy, and the biological, physical, or social science aspects of alternative agriculture. Membership to the IAA is \$16 per year and includes a subscription to the "News." Contributions are tax-deductible. "Journal" subscription rates per year are \$44 for institutions; \$24 for individuals; and \$12 for students.

Institute for Alternative Agriculture
9200 Edmonston Road, Suite 117
Greenbelt, MD 20770
(301) 441-8777

American Farmland

The magazine-style newsletter of the American Farmland Trust is published quarterly. The newsletter addresses issues of farmland conservation, policy development, technical assistance, information sources. Subscription is by annual membership; dues are \$15 per year, and are tax-deductible.

American Farmland Trust Western Office
512 Second Street, 4th Floor
San Francisco, CA 94107
(415) 543-2098

American Journal of Alternative Agriculture

For ordering information see the *Alternative Agriculture News* listed above.

Appropriate Technology

A quarterly publication of the Intermediate Technology Publications group. The journal concentrates on development issues, offering commentaries and information about simple technologies appropriate throughout the world. Current subscription rate is 14 pounds per year (UK currency), but payment may be made in U.S. dollars, at the current rate of exchange, or by credit card.

Appropriate Technology
103-105 Southampton Row
London, WC1B 4HH
United Kingdom

Association of Natural Bio-Control Producers (ANBP) Newsletter

The ANBP produces a quarterly newsletter aimed at informing members of legislation, current issues, and quality control of the industry. Associate membership is \$25; \$250 for Distributors; and \$500 for Producers of Bio-Control Agents.

ANBP Newsletter
Maclay Burt, Executive Director
10202 Cowan Drive
Santa Ana, CA 92705
(714) 544-8295 office and FAX

ATTRAnews

The Appropriate Technology Transfer for Rural Areas (ATTRA) project newsletter. ATTRA also provides sustainable agriculture information to farmers via an 800 number. The newsletter is designed to highlight the organization's activities. Available free.

ATTRA
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

Bio-Dynamics Quarterly Magazine

Published by the Bio-Dynamic Farming and Gardening Association per year. Subscription is through membership in the Association, rate is \$20 per year. The magazine focuses on soil conservation and fertility management, as well as nutrition and health.

Bio-Dynamic Association
National Office
P.O. Box 550
Kimberton, PA 19442
(215) 935-7797

Biological and Cultural Tests for Control of Plant Diseases

A relatively new, annual journal which compiles reports of plant disease control experiments involving non-chemical methods. Reports range from experiments evaluating the use of microorganisms for disease control, evaluations of plant resistance to disease, modifications of tillage systems, crop rotations, and harvest techniques. \$15 List price, \$10 member price.

American Phytopathological Society
3340 Pilot Knob Road
St. Paul, MN 55121

BioOptions

A newsletter of the Center for Alternative Plant and Animal Products. The Center was created to aid in the development of new and alternative crop and livestock enterprises. The 8-page newsletter offers information on current research, upcoming conferences, and resources for information on alternative crops. Published four times per year, subscription rate is \$5 per year.

Center for Alternative Plant and Animal Products
305 Alderman Hall
1970 Folwell Avenue
University of Minnesota
St. Paul, MN 55108
(612) 625-5747

California Agriculture

Published every other month by the Division of Agriculture and Natural Resources. The magazine covers issues primarily of importance to California farmers but also addresses many national issues. For a free subscription contact:

Division of Agriculture and Natural Resources
University of California
300 Lakeside Drive, 6th Floor
Oakland, CA 94612-3560
(510) 987-0044

Common Sense Pest Quarterly

For ordering information see the *IPM Practitioner* listed below.

Conservation Impact

A newsletter from the Conservation Technology Information Center (CTIC), a national organization. Subscription is through membership in CTIC; annual rate is \$15. Information in the 8-page newsletter, published 11 times per year, focuses on soil and water conservation systems to enhance the environmental and economic viability of agriculture. Conservation tillage information is frequently highlighted. Emphasis is primarily on mid-west systems but information of value to PNW producers is often included.

CTIC
1220 Potter Drive, Room 170
West Lafayette, IN 47906-1334
(317) 494-9555
(8:00 a.m. - 4:30 p.m. EST)

The Cultivar

A 16-page sustainable agriculture newsletter from the Agroecology Program at the University of California, Santa Cruz (UCSC). The Cultivar is published twice yearly. The newsletter highlights current research, literature, and policy issues. Current and back issues are available free of charge. See the Organization section in this guide for more information about the Agroecology Program.

The Cultivar
Agroecology Program
University of California
Santa Cruz, CA 95064
(408) 459-4140

Direct Marketing News

Contains information particularly suited to California's direct marketers. Topics include reports on the status of farmers' markets, special events, conferences, Tasting of Specialty Produce events, publications, slide shows, and the information hotline. Published quarterly, available free.

Direct Marketing Program
California Department of Food and
Agriculture
1220 N Street, Room A-287
Sacramento, CA 95814
(800) 952-5272

DIVERSITY

A quarterly news Journal of the Global Plant Genetic Resources Community, Inc. The journal provides a forum for exchanging ideas and information on plant germplasm resources with colleagues around the world. Subscription rates are \$35 for individuals, government and nonprofit institutions; \$55 for "all others." Genetic Resources Community, Inc.
727 Eighth Street SE
Washington D.C. 20003
(202) 543-6843

Earth Ethics

A 16-page quarterly journal provides short excerpts, book reviews, and current action in environmental ethics. Subscription is by contribution; \$10, \$15 or \$20 per year requested.

Earth Ethics
Public Resource Foundation
1815 H Street, NW, Suite 600
Washington, D.C. 20006

EPA Journal

Published six times per year by the Environmental Protection Agency. The Journal covers topics related to the work of the Agency including agriculture, energy, water quality, and forestry. Subscription is \$8 per year, single issues are available for \$2.25. Make checks payable to the Superintendent of Documents.

EPA Journal (A-107)
Waterside Mall
401 M Street SW
Washington, D.C. 20460

Farm Journal

A business magazine published 14 times per year. It is published for families who own or operate farms/ranches. Type of farming operation is required on all subscription orders, but is also available to those not actively farming. Current subscription rate is \$12 per years. Single copies are available for \$1.50.

Farm Journal, Inc.
203 West Washington Square
Philadelphia, PA 19105
(800) 331-9310
(M-F 9:00 - 5:00 EST)

Federal-State Market News

Publishes several reports on up-to-date high and low prices plus amounts shipped for specific commodities in each state. *Fresh Fruit & Vegetable National*; *Shipping Point Trends* - issued weekly; *Northwest Fruit Report* - issued daily; *Northwest Veggie Report* - issued daily

U.S. Department of Agriculture
Agricultural Marketing Service
Fruit and Vegetable Division
2015 South First Street, Room 4
Yakima, WA 98903
(509) 575-2494

The Gene Exchange

The National Wildlife Federation produces this newsletter that contains information on developments in genetic engineering, including agricultural applications. Available free.

National Biotechnology Policy Center
The National Wildlife Federation
1400 - 16th Street NW
Washington D.C. 20036-2266

Healthy Harvest News

Published quarterly by the Healthy Harvest Society, a branch of The National Institute of Science, Law, and Public Policy (NISLPP), a nonprofit organization. The 8-page newsletter highlights information about organic farming, marketing, government policy, and environmental and consumer issues. Subscription is through membership in the Healthy Harvest

Society. Membership dues are \$24 per year for individuals, \$50 per year for organizations (includes extra copies of the newsletter for organizational distribution).

Healthy Harvest Society
1424 NW 16th Street, Suite 105
Washington, D.C. 20036
(202) 462-8800

HortIdeas

HortIdeas is an excellent monthly 8-page newsletter published by Gregory and Patricia Williams. The newsletter reports on the latest research, methods, tools, plants, books, etc. for vegetable, fruit, and flower gardeners, gathered from popular and technical sources world-wide. While the publication is aimed at "gardeners", there is much of value to commercial farmers as well. Single issues are available for \$1.50 each; annual subscription rates are \$15 second class mail, or \$17.50 first class mail.

HortIdeas
460 Black Lick Road
Gravel Switch, KY 40328

The IPM Practioner and The Common Sense Pest Quarterly

The IPM Practitioner (IPMP) has focuses on insect pest management throughout the world. Published 10 times per year by the Bio-Integral Resource Center (BIRC), the IPMP features current research, journal highlights, products and services, and includes a calendar section. Subscription rate is through membership in BIRC; annual rates are \$50 (institutions, libraries, businesses), \$25 (personal or personal business check), \$18 (registered student). *The Common Sense Pest Quarterly* can be obtained through a dual membership. Annual rates are: \$75 (institutions) and \$45 (individuals).

IPM Practitioner
Bio-Integral Resource Center
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

Journal of Soil and Water Conservation

An official publication of the Soil and Water Conservation Society (SWCS), it is dedicated to promoting the science and art of good land and water use. The journal covers a variety of land and water conservation subjects including: soil erosion and sedimentation control; conservation tillage; mined land reclamation; water resources and water quality; farmland protection and rural planning; forest and range management; and, wildlife habitat development. Published 6 times per year. Subscription is by membership in the SWCS or by subscription. Membership dues are \$44 per year; subscription only is \$30 per year.

SWCS
7515 NE Ankeny Road
Ankeny, IA 50021-9764
(515) 289-2331

Journal of Sustainable Agriculture

The publication is designed for farmers, educators, extension personnel, food and fiber processors, and research scientists. Published four times per year, the journal features articles on innovative practices, new technology, IPM programs, energy use, organic farming, and the economic aspects of sustainable agriculture. Subscription rate is \$24 for individuals, \$36 for institutions, \$48 for libraries.

Journal of Sustainable Agriculture
Food Products Press
10 Alice Street
Binghamton, NY 13904-1580
(800) 342-9678

The Land Stewardship Letter

Published by the Land Stewardship Project (LSP) of Minnesota, the 20-page quarterly newsletter. The newsletter discusses policy, social, environmental, and agricultural production issues. Subscription is through membership in the LSP. For more information see the Organization section of this guide. Suggested contribution: \$20 minimum.

The Land Stewardship Project
14758 Ostlund Trail North
Marine, MN 55047
(612) 433-2770

The Leopold Letter

A quarterly newsletter of the Leopold Center for Sustainable Agriculture. The newsletter discusses research, extension, and field studies conducted by the Leopold Center, in addition to regional and national sustainable agriculture issues. Available free.

The Leopold Center
126 Soil Tilth Building
Iowa State University
Ames, IA 50011
(515) 294-3711

Feed the Soil

A free newsletter published periodically by Moody Hill Farms in New York. The primary focus of the newsletter is composting and alternative soil amendments.

Moody Hills Farms
Box 171
Amenia, NY 12501
(518) 789-3252

National Gardening

National Gardening Association
180 Flynn Avenue
Burlington, VT 05401

The New Farm

Published seven times per year by Rodale Press. The New Farm reports on high-value crops and products, low-input strategies and research, conferences and field days, and organic and sustainable farming techniques across the United States. \$15 per year, \$24 for a two year subscription.

The New Farm
Box 14
Emmaus, PA 18099-0014
(215) 967-5171

Northeast LISA Apple Newsletter

The newsletter covers low input sustainable research in universities, at private institutions such as the Rodale Research Center, and by orchardists in several Northeastern states. Free.

Daniel Cooley
Department of Plant Pathology
Fernald Hall
University of Massachusetts
Amherst, MA 01003

Northland Berry News

A 20-page quarterly newsletter from Berry Communications. Provides a good review of small fruit newsletters from around the U.S. Subscriptions are \$15 per year.

Berry Communications
19060 Manning Trail North
Marine on the St. Croix, MN 55407
(612) 433-5850

Organic Exchange

A publication from the Working Land Fund in Vershire, Vermont, designed to exchange information among organic farmers about new ideas, techniques, equipment, and programs. The newsletter prints letters from farmers describing production techniques, and reprints information from other sources. Subscription is \$15 for 3 issues per year.

Organic Exchange
Working Land Fund
P.O. Box 249
Vershire, VT 05079

Organic Farmer

A digest of information on sustainable agriculture designed to build dialogue among organic farmers across the country. The quarterly publication is \$10 per year.

Rural Vermont
15 Barre Street
Montpelier, VT 05602
(802) 223-7222

Organic Food Matters: *The Journal of Sustainable Agriculture*

Organic Food Matters is a newspaper style quarterly publication. Generally about 30 pages long, the paper covers a variety of issues related to organic and sustainable agriculture. Subscription is through membership in The Committee for Sustainable Agriculture (CSA), an organization that promotes sustainable food production, conducts educational activities, and serves as a medium for networking among groups and individuals. CSA also sponsors the Ecological Farming Conference in California each year. Membership in CSA is \$20 per year.

Committee for Sustainable Agriculture
P.O. Box 1300
Colfax, CA 95713
(916) 346-2777

Organic Wholesale Market Report

From the Organic Market News and Information Service (OMNIS), the publication provides organic farmers and distributors and up-to-date market picture of current buy and sell prices, and produce supply information (deficits and surplus reporting). Information also is included in chart form on how produce is packaged, the number of distributors buying the product, price paid to the grower, price of the product when it's sold to retailers, quantity sold, percent of supply sold, and whether there is a shortage or surplus of the commodity. For comparison, the report also lists wholesale prices for non-organic items that same week at the terminal market in Los Angeles. The publication also contains a bulletin board/classified ad section plus "The OMNIS Reporter," which discusses current topics in organic farming. The report highlights California, Oregon, and Maryland produce and markets, but includes produce grown and sold elsewhere. Published weekly, \$73 per year, \$39 (half-year) for individuals; \$125 for institutions and non-growers (year), \$65 (half-year).

Organic Marketing News and Information Service (OMNIS)

P.O. Box 1300
Colfax, CA 95713
(916) 346-2777

The Packer

A weekly business newspaper for the national and international fresh fruit and vegetable industry. Subscriptions are \$45 per year.

The Packer
P.O. Box 2939
Shawnee, KS 66210-1855
(913) 451-5821

Practical Farmers of Iowa Newsletter

A 10-page newsletter published quarterly by the Practical Farmers of Iowa (PFI) organization. The newsletter primarily focuses on issues of importance to Iowa farmers, but also highlights events of national importance in sustainable agriculture. Subscription is through membership in PFI: \$10 per year.

Practical Farmers of Iowa
RR 2, Box 132
Boone, IA 50036
(515) 432-1560

Small Farm News

A bi-monthly, 12-page newsletter reporting on the latest Cooperative Extension research for small-scale farmers in California. Articles focus on direct marketing, post-harvest handling, organic farming, farm management and financing, and sustainable agriculture. Each issue includes features articles, a profile of a small farm, a farm advisor program profile, a listing of publications, and a calendar. No charge, but donations to help defray costs are accepted; make checks payable to UC Regents.

Small Farm Center
University of California
Davis, CA 95616
(916) 757-8910

Small-Scale Agriculture Today

Published quarterly, national focus sent to cooperative extension people. Includes a calendar section.

USDA/CSRS/OSSA

Office for Small-Scale Agriculture

Suite 328-A Aerospace Center

Washington, D.C. 20250-2200

(202) 401-1805 office

(202) 401-1804 fax

Sustainable Agriculture News

Published quarterly by the UC Sustainable Agriculture Research & Education Program (UC-SAREP). The newsletter reports on research projects, sources of funding for sustainable agriculture research, commodity and working group meetings, and technical meetings related to agricultural sustainability. Primarily a California focus, but issues of national concern are also covered. No charge.

UC-SAREP

University of California

Davis, CA 95616

(916) 752-7556

Sustainable Farming

Subtitled "The Quarterly Magazine of Resource Efficient Agricultural Production," the 30-page magazine focuses on sustainable agriculture in Canada. Subscription is through membership in REAP-Canada (see the Organization section for more information). \$16 U.S. per year, \$15 Canadian per year.

REAP-CANADA

Box 125 Glenaladale House

Ste Anne de Bellevue

Quebec H9X 1C0

"Adapt ideas, don't adopt them. And reserve the right to change your mind tomorrow."

Dick Thompson



GENERAL BOOKS AND HANDBOOKS

This section contains a variety of books that focus on broad-based issues and topics related to sustainable agriculture.

Agricultural Ecology

Joy Tivy 1990

Analyzes the nature of the relationships among crops, livestock and the biophysical environment, and the extent to which humans have managed and modified crops and the environment. The differences between managed and unmanaged systems are examined. Ecological characteristics and environmental problems associated with specific farming types or regional situations are discussed. \$34.95.

Publisher:

Halsted Press
605 Third Avenue
New York, NY 10158
(212) 850-6418

Agriculture and Community Change in the United States: The Congressional Research Reports

Louis E. Swanson, Editor 1988

The book describes studies of five regions and concludes there are important regional and structural variations affecting farm change and

community well-being. Studies cited include: farm and community change; industrial agriculture and rural community degradation; and farm structure and rural communities. \$32.50.

Publisher:

Westview Press
5500 Central Avenue
Boulder, CO 80301
(303) 444-3541

Agriculture and the Environment: A Study of Farmers' Practices and Perceptions

American Farmland Trust 1990

The report contains interviews with farmers in five counties across the U.S. and offers information about resource-conserving farming practices and farmer opinions of proposed federal farm policy.

Available from:

American Farmland Trust Publications
Department
1920 N Street NW
Suite 400
Washington, D.C. 20036
(202) 659-5170

Agroecology: Researching the Ecological Basis for Sustainable Agriculture

Stephen R. Gliessman, Editor 1990

A wide range of research topics are covered such as pest/crop ecology, nutrient cycling and mobility, intercropping, energy flow, and influence of trees on agroecosystems. Leading researchers and pioneers in the field of agroecology have contributed chapters to the book. \$89.

Publisher:

Springer Verlag, Inc.
175 Fifth Avenue
New York, NY 10010
(800) 777-4643

Agroforestry: Classification & Management

K. MacDicken and N. Vergara, Editors
1990

This book consists of well-illustrated and extensively referenced descriptions of traditional and improved agroforestry practices in the tropics and in temperate zones. Chapters on diagnosis and design, species selection, and technology delivery to farmers are also included. \$55.

Publisher:

John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158-0012
(800) 879-4539

Alternative Agriculture

National Research Council 1989

The controversial 1989 report by the National Academy of Sciences Board on Agriculture reviews the development, current use and future prospects of alternative farming techniques in the U.S. Federal policies are examined and case studies of 11 farms are presented. Available while supplies last for \$5 (soft cover).

Available from:

Dr. Jim Bushnell
USDA Extension Service
3341 South Building
Washington, D.C. 20250-0900
(202) 447-4341 office
(202) 447-4341 FAX

Alternative Indian Agriculture: Women and Youth

Intertribal Agricultural Council 1990

Proceedings of the 4th Annual National Intertribal Agricultural Symposium. Free.

Available from:

Intertribal Agricultural Council
1208 Claimjumper
Billings, MT 59105
(406) 259-3525

The Biodynamic Farm

Herbert H. Koepf 1989

The essentials of biodynamic farming are covered including soil fertility, crop production and rotations, and the role of animals within systems. Also included are lists of the preparations used in composting, herbal companion crops, and livestock and crop preparations. Recent data and references are included as well as appendices listing biodynamic associations, schools, and training programs. \$26.

Publisher:

Anthroposophic Press
RR 4, Box 94A1
Hudson, NY 12534
(518) 851-2054

Choices for the Heartland: Alternative Directions in Biotechnology and Implications for Family Farming, Rural Communities, and the Environment

C. Hassebrook and G. Hegyes 1989

The publication includes results of a survey of current or planned biotechnological research, predictions of likely implications of the resulting technologies, and potential

research directions that would enhance the social, economic, and natural environment of rural communities. \$6.

Available from:

Center for Rural Affairs
P.O. Box 405
Walthill, NE 68067
(402) 846-5428

Desert on the March

Paul B. Sears 1988

A book that mixes history, geography, ecology, and philosophy as it seeks not only to examine desertification, but the future for humans and their relationship to the land. \$14.95.

Publisher:

Island Press
P.O. Box 7
Covelo, CA 95482
(800) 828-1302

Enduring Seeds: Native American Agriculture & Wild Plant Conservation

Gary Nabhan 1989

Offers practical information on sustainable agriculture based on Native models and suggests implementation of botanical gardens, seed banks, heritage farms, and biosphere reserves. \$17.95.

Publisher:

North Point Press
850 Talbot Avenue
Berkeley, CA 94706
(510) 527-6260

The Environmental Effects of Conventional and Organic/Biological Farming Systems

C. Arden-Clarke 1988

The two-volume set offers a review of the environmental implications of organic farming. Major areas reviewed include: the effect of soil erosion on yields and off-site environmental costs; biological, chemical, and physical effects of fertilizers on soil ecology and nutrient

cycles; effects of pesticides on crops, natural pest enemies, and other non-target organisms; agroecosystem diversity; and effects of farming systems on wild flora and fauna. \$50 (includes surface mail shipping).

Available from:

Political Ecology Research Group
34 Cowley Road
Oxford OX4 1HZ
England

Excellence in Agriculture: Interviews with Ten Minnesota Stewardship Farmers

Ron Kroese, Editor 1988

Interviews with ten Minnesota farmers or farm couples whose operations are driven by the goals of sustainability are described. \$10.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Family Farming: A New Economic Vision

Marty Strange 1988

Marty Strange critiques the technological base of modern agriculture, and calls for farm practices that are ethical, economical, and ecologically sound. He also explores the roots of agrarian values and farm policies in the U.S. \$18.95.

Publisher:

University of Nebraska Press
901 North 17th Street
Lincoln, NE 68588-0520
(402) 472-3581

Farmer First: Farmer Innovation and Agricultural Research

Arnold Pacey and Lori Thrupp; Robert Chambers, Editor 1989

Dozens of case studies detail the benefits of farmer participation and on-farm experimentation in international development projects. \$31.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Farmer Participation in Sustainable Agriculture Research

A report by Appropriate Technology Transfer for Rural Areas (ATTRA) from a conference attended by over 100 farmers and scientists from 19 states. \$5.75.

Available from:

ATTRA
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

Farmers and Ranchers Guide to Commercial Bank Credit

Ben Gisin 1988

Practical guidelines are outlined in this publication to assist with obtaining loans or financing expansion. Information is provided on collateral and loan approval processes. A supplementary worksheet package is included to assist in analysis prior to approaching the lending institutions. \$14.95.

Available from:

Gisin Company
P.O. Box 1723
Idaho Falls, ID 83403
(208) 523-2235

Farming on the Fringe Map

American Farmland Trust

A colorful, detailed map of the United States showing America's farmland and its proximity to urban areas. The map was based upon information obtained from the 1980 Population Census, and the 1974, 1978, and 1982 Agricultural Censuses. \$2.

Available from:

American Farmland Trust
Publications Department
1920 N Street NW, Suite 400
Washington, D.C. 20036
(202) 659-5170

Farmland, A Community Issue

Concern, Inc.

Reports the results of a survey focusing on farmland issues and the status of sustainable agriculture. The report also contains a list of guidelines for community action in support of sustainable agriculture. \$3.

Available from:

Concern, Inc.
1794 Columbia Road NW
Washington, D.C. 20009

Farmland for the Future - A Citizens' Guide to Recreating the Food System

Land Stewardship Project 1991

The guide explains the importance of preserving valuable farmland from development and discusses various existing and possible future tools for doing so including community gardens, subscription-based agriculture, easements, state ag land preservation programs, and community farmland trusts.

Available from:

The Land Stewardship Project
14758 Ostlund Trail North
Marine, MN 55407
(612) 433-2770

Fit for a Pig: Low-Cost/Sustainable Strategies of Resourceful Hog Farmers

Shawn Gralla 1991

A handbook that presents lessons from successful producers on low-cost, low-investment, sustainable strategies for raising hogs. \$7 (includes postage and handling).

Available from:

The Center for Rural Affairs
Beginning Farmer Support Network
P.O. Box 736
Hartington, NE 68739
(402) 254-6893

From the Land

Nancy P. Pittman, Editor 1988

An anthology from thirteen years of "The Land" containing conservation writings from the 1940's and 1950's. Fiction, non-fiction, poetry, and philosophy relate the story of how the U.S. has changed from a nation of small farms to the types of agribusiness found today. Contributing authors include Aldo Leopold, E.B. White, Louis Bromfield, Paul Sears, Alan Patton, and Wallace Stegner. \$19.95.

Published by:

Island Press
P.O. Box 7
Covelo, CA 95482
(800) 828-1302

Great Possessions: An Amish Farmer's Journal

David Kline 1990

Includes essays regarding the relationship of nature and the Amish community. \$16.95.

Published by:

Renaissance House Publishers
P.O. Box 177A
Frederick, CO 80530
(800) 521-9221

Guidelines for Developing University Sustainable Agriculture Programs: Suggestions for Research, Extension, and Instruction

Tom Lamm 1989

Suggests criteria for evaluating and planning sustainable agriculture programs and discusses some of the historical and institutional impediments to such program develop-

ment. Mechanisms to overcome some of the problems are suggested. \$5.

Available from:

Wisconsin Rural Development
Program
P.O. Box 504
Black Earth, WI 53515
(608) 767-2539

Holistic Resource Management

Allan Savory 1988

Scientific and management principles for developing a comprehensive planning model are discussed. Information provided is applicable to a wide range of ecosystems. \$24.95

The Holistic Resource Management Workbook

Sam Bingham 1989

A companion to *Holistic Resource Management* book, the workbook provides practical instruction for making financial, biological, and land-use plans necessary to apply the holistic management model. Case studies lead the reader through the process. \$24.95.

Both published by:

Island Press
P.O. Box 7
Covelo, CA 95482
(800) 828-1302

International Green Front Report

Michael Pilarski 1988

An international sourcebook on sustainable agriculture and world reforestation. Contains information on projects, events, organizations, periodicals, and books. \$7.

Available from:

Friends of the Trees Society
P.O. Box 1064
Tonasket, WA 98855
(509) 486-4726

Keeping the Family Business Healthy: How to Plan for Continuing Growth, Profitability, and Family Leadership

John L. Ward 1988

Helps to design a business plan which ensures the family's role in the company's future. Methods illustrate how to determine the firm's financial and market situation. Tables and figures are included which display useful information for family farm businesses.

\$25.95.

Publisher:

Jossey-Bass Inc.
350 Sansome Street
San Francisco, CA 94104
(415) 433-1740

Losing Ground: Agricultural Policy and the Decline of the American Farm

Hugh Ulrich 1989

Describes the market forces initiated by America's agricultural policy decisions. Cause and effect of farm demographic transitions in the context of historical change are also presented. And, the author outlines his view of goals for future U.S. farm policies. \$18.95.

Publisher:

Chicago Review Press, Inc.
814 North Franklin Street
Chicago, IL 60610
(312) 337-0747

Louis Bromfield at Malabar: Writings on Farming and Country Life

Charles Little, Editor 1988

Excerpts from Louis Bromfield's writings about his experimental farm in Ohio are presented. Bromfield, a 1928 Pulitzer Prize fiction winner, offers insights into soil conservation, wildlife ecology, chemical pesticide usage, and rural heritage. \$18.95.

Publisher:

Johns Hopkins University Press
701 West 40th Street
Suite 275
Baltimore, MD 21211
(301) 338-6900

Managing for Profit in Commercial Agriculture

Roy C. Ferguson 1990

The "Ferguson System of Financial Analysis" in commercial agriculture is described in detail. This broadly-based system advocates using all available financial and management practices to manage profitability on the farm. \$53.50.

Publisher:

Prentice Hall
Route 9W
Englewood Cliffs, NJ 07632
(800) 922-0579

Natural Vegetation of Oregon and Washington

Jerry F. Franklin and C.T. Dyrness 1988

A reprint edition including a bibliographic supplement identifying research advances since 1973. Vegetation zones and their environmental relations in the Pacific Northwest are described and examined in detail, including information on composition and succession. The volume also contains information on unusual habitats, physiography, geology, and soils. Appendices define soil types, list scientific and common names of plants. \$22.95.

Publisher:

Oregon State University Press
Waldo Hall 101
Corvallis, OR 97331-6407
(503) 737-3166

**Northwind Farm's Herb Resource
Directory, 1992-93 Edition**

Paula Oliver 1992

The 1992-1993 edition contains descriptions of herb-related businesses, with indexes listed both alphabetically and geographically. Information in listings includes: business name, contact person's name, address, phone number; types of plant materials and seeds available; catalogs listing tools and plant protection devices; and the specialty of the business. The Directory sells for \$12.95 in the U.S.; add \$1 for Canadian delivery, and \$3 for postage to other countries.

Available from:

Northwind Farm Publications
RR 2, Box 246
Shevlin, MN 56676

The New Organic Grower

Eliot Coleman 1989

A good basic manual for both the beginning market gardener and the home gardener. Contains practical advice and information on such subjects as rotations, planning, use of soil blocks for transplanting, garden tools, row covers and season extenders, and transplanting information. While it is designed primarily for gardeners, much information applicable to commercial-scale farming is included. \$19.95.

Publisher:

Chelsea Green Publishers
P.O. Box 130, Route 113
Post Mills, VT 05058-0130
(802) 333-9073

**Organic Agriculture: What the States are
Doing**

Offers information on activities promoting sustainable agriculture throughout the U.S. \$3.

Available from:

Organic Report
Center for Science in the Public
Interest
1501 16th Street NW
Washington, D.C. 20036

**Organic, Biodynamic, and Conventional
Cropping Systems: A Long Term
Comparison**

B.D. Pettersson and E.V. Wistinghausen

Contains research results of a two-decade study in Sweden comparing conventional, organic, and biodynamic production systems which incorporated crop rotations and fertilizer variables. Includes discussion of techniques and use of biological testing methods such as shelf-life, enzyme activity, and respiration quotients to examine quality differences among the different production systems. Differences in crop nutrient content, storage quality, and energy yields of the different systems are reported. \$10.50

Available from:

Woods End Research Laboratory
Old Rome Road, Box 1850
Mt. Vernon, ME 04532
(207) 293-2457

Our Sustainable Table

Robert Clark, Editor 1990

Frances Moore Lappe, Alice Waters, Wendall Berry and many others re-examine farmers, restaurants, and consumers as they persuade us to take notice of the role of agriculture in the food we eat through a collection of essays. \$10.95.

Publisher:

North Point Press
850 Talbot Avenue
Berkeley, CA 94706
(510) 527-6260

Permaculture, A Practical Guide for a Sustainable Future

Bill Mollison 1990

First published in 1988, this new printing of Mollison's book includes a forward by naturalist Gary Nabhan and an appendix listing permaculture groups worldwide. Aspects of design, site considerations, water management, climate, plant-animal forage assemblies, urban planning, report-writing for clients, and financial and legal strategies for community groups are included. \$34.95.

Publisher:

Island Press
P.O. Box 7
Covelo, CA 95482
(800) 828-1302

Plowing the Urban Fringe: An Assessment of Alternative Approaches to Farmland Preservation

Hal Hiemstra and Nancy Bush 1989

Eight examples of farmland preservation programs from state and counties across the country are described. Also includes information about issues and techniques for working with farmland preservation projects. \$15.

Available from:

agaccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Pruning

Christopher Brickell 1979

Includes general pruning information for such species as roses, shrubs, eucalyptus, climbing plants, indoor vines, fruit and berry vines, and ornamental trees. Pruning

frequency, timing, rejuvenation, and bloom improvement are discussed. \$9.95.

Publisher:

Simon & Schuster, Inc.
1230 Avenue of the Americas
New York, NY 10020
(800) 223-2348

Recouple: Natural Resource Strategies for Rural Economic Development

Midwest Research Institute 1990

Use of forest, agricultural, tourism, and wildlife-based recreation resources in rural economic development are discussed. Also contains sections with bibliographies on technical assistance material useful in developing these strategies. \$25.

Available from:

Midwest Research Institute
425 Volker Blvd.
Kansas City, MO 64110
(816) 753-7600

Reshaping the Bottom Line: On Farm Strategies for a Sustainable Agriculture

David Granatstein 1988

A collection of ideas from working farms in the upper-midwest on economic and environmental sustainability. Chapters cover topics such as soil fertility and manure, weeds, insects, pasture management, and alternative crops. \$9.

Available from:

The Land Stewardship Project
512 West Elm Street
Stillwater, MN 55082
(612) 443-2770

Saving America's Countryside

Samuel Stokes and Elizabeth Watson
1989

Offers a comprehensive guide for protection of natural, historic, scenic, and agricultural resources of rural communities. Case studies of successful conservation efforts are

presented. Also included are guidelines to help organize conservation efforts, pass legislation, set up land trusts, influence public attitudes, and to use federal programs. \$16.95

Publisher:

Johns Hopkins University Press
701 West 40th Street
Suite 275
Baltimore, MD 21211
(301) 338-6900

**Saving the Farm: A Handbook for
Conserving Agricultural Land**

American Farmland Trust 1990

Procedures for implementing land conservation programs by networking with local government agencies are described. Private options are also included. A good reference for local governments, land-owners, and private organizations to help locate resource information and organizations. The 150-page document comes in a 3-ring binder and sells for \$25.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Secrets of the Soil

Peter Tompkins and Christopher Bird
1989

The book details what some farmers and researchers have been doing over the last fifty years to enhance the soil. The practices and beliefs of Rudolf Steiner, Louis Kervran, Patrick Flanagan, Albert Schatz, and others are included. \$24.95.

Publisher:

Harper & Row Publishers, Inc.
10 East 53rd Street
New York, NY 10022
(800) 242-7737

Small Farm Bookkeeping System

Small Farmers Journal

A valuable tool for beginning and experienced small-scale farmers on comprehensive record-keeping. \$8.95.

Available from:

Small Farmers Journal
P.O. Box 2805
Eugene, OR 97402
(503) 683-6486

Small Farm Energy Primer

Small Farm Energy Project 1980

A collection of reports on energy alternatives and conservation techniques to help lower the high costs of energy inputs on small farms. Some of the projects described include the Kaiser wind electric system, solar vertical wall collectors, and the Fish solar greenhouse.

Available from:

Small Farm Energy Project
Center for Rural Affairs
P.O. Box 736
Hartington, NE 68739
(402) 254-6893

**Sustainable Agriculture for California: A
Guide to Information**

Steve Mitchell and David Bainbridge
1991

The guide lists diverse sources of information to help farmers, extension agents, researchers, librarians, policy makers and others locate sources of information on sustainable agriculture. A particular emphasis of the guide is technical references and reports of scientific studies. \$12.

Available from:

Publications
University of California
Agriculture and Natural Resources
6701 San Pablo Avenue
Oakland, CA 94608-1239
(510) 642-2431

Sustainable Agricultural Systems

C. Edwards, R. Lal, P. Madden, R. Miller,
and G. House, Editors 1990

Many aspects of sustainable agriculture are covered including: history and social issues; components of sustainable systems; integration in sustainable farming systems; sustainable agricultural systems in the tropics; policy development for low-input sustainable agricultural programs; and ecological impacts of sustainable agriculture. \$40.

Available from:

Soil and Water Conservation Society
7515 NE Ankeny Road
Ankeny, IA 50021-9764
(515) 289-2331

Sustainable Agriculture in the Northern Rockies and Plains

Nancy Matheson, Editor 1989

Compiled by Alternative Energy Resources Organization (AERO), this guide contains brief summaries of farms in the Northern Rockies and Plains. Addresses and phone numbers of farmers and ranchers from seven states and two Canadian provinces are included as networking sources. Other chapters discuss farm management goals and practices being most widely and successfully used to meet the challenges of farming in these dryland areas. \$7.

Available from:

AERO
44 North Last Chance Gulch, #9
Helena, Montana 59601
(406) 443-7272

Sustainable Agriculture in Temperate Zones

C.A. Francis, C.B. Flora, and L.D. King,
Editors 1990

Presents agricultural technology alternatives and options for sustainable farming in temperate zones. Subjects such as integrated pest management, hybrid breeding, weed management, soil fertility practices, the

economics of sustainable low-input farming systems, and policy issues are discussed. \$69.95.

Publisher:

John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158-0012
(212) 850-6000

Sustainable Development and Sustainable Agriculture - With Emphasis on Economics

Elliot Rosenberg and M. Eisgruber 1992

A partially annotated bibliography on sustainable development and sustainable agriculture. The primary emphasis of the bibliography is economics and contains nearly 800 references. Subject, country, and author indices facilitate location of references of interest. Printed copies of the bibliography are \$5 each; \$6 for an address outside the United States. Diskette copies are \$3 for address within the United States; \$4 for an address outside the United States. Checks or money orders must be in U.S. dollars and made payable to Oregon State University.

Available from:

Economic Information Office
Department of Agricultural &
Resource Economics
Ballard Extension Hall 213
Oregon State University
Corvallis, OR 97331
(503) 737-1443 office
(503) 737-2563 FAX
Internet:
SEARSS@ccmail.OST.EDU

Switching to a Sustainable System: Strategies for Converting from Conventional/Chemical to Sustainable/Organic Farming Systems

Frederick Kirschenmann 1988

Kirschenmann gives farmers the perspective and background information to assist them in switching to a "sustainable" system. Although the focus is on the Northern Plains,

topics such as advantages, common misconceptions, the conversion process, and model crop rotations can be applied to many situations. \$5.

Available from:
agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Toward a Sustainable Agriculture: A Teacher's Guide
Wisconsin Rural Development Center 1991

A high school sustainable agriculture curriculum prepared by the Sustainable Agriculture Curriculum Project. The guide has three major sections: a teacher's reference guide, an instructional unit, and a collection of learning activities. \$10.

Available from:
Center for Integrated Agricultural Systems
University of Wisconsin
240 Ag Hall
Madison, WI 53572

The Transition Document: Toward and Environmentally Sound Agriculture
Harry MacCormack and Alan Kapuler
1989

A discussion of the transition from conventional farming practices to organic production is included in this handbook. Information about pest management, farming practices, pesticide residues, and soil amendments are included. \$10 plus \$2.50 shipping and handling.

Available from:
Oregon Tilth Research & Education Office
31615 Fern Road
Philomath, OR 97370
(503) 929-6742

Tree Crops: A Permanent Agriculture
J.R. Smith 1987

This classic work on tree crops first published in 1929 still offers challenges as it discusses such subjects as erosion control, increasing food supplies, and diversifying ecosystems. \$19.95.

Publisher:
Island Press
P.O. Box 7
Covelo, CA 95482
(800) 828-1302

Tree Maintenance
P.P. Pirone 1978

Planting, transplanting, pruning and wound treatment, and storm damage repair are discussed. Special chapters deal with abnormalities and their treatment, and assess the suitability of different trees to various locations across the country. A chapter on disease and pests is also included. \$49.95.

Available from:
Oxford University Press
200 Madison Avenue
New York, NY 10016
(212) 679-7300

What Farmers Need to Know About Environmental Law
Drake University 1991

A 190-page book that outlines what farmers need to know about environmental laws and how they may affect farming practices. \$20.

Available from:
Drake University
Agricultural Law Center
Environmental Law Book
2507 University Avenue
Des Moines, IA 50311-4505

NOTES

"Don't be afraid to make mistakes. To make it in farming all it takes is good judgement, but good judgement comes from experience, and experience comes from poor judgement."

A Montana farmer



UNIVERSITY RESOURCES

Libraries
Oregon State University
Washington State
University
Pacific Northwest
Publications
University of California
Publications

Universities provide a variety of information on numerous topics related to sustainable agriculture. The following sections list resources in Oregon and Washington including libraries, Extension and Experiment station locations, and information about ordering publications. Because parts of California have similar growing conditions, information about ordering University of California publications is also included.

LIBRARIES

The majority of the publications listed in this guide can be found in libraries. If your local library or the university libraries do not own the publication you want to borrow, it can usually be obtained through the Interlibrary Loan Service.

Holland Public Library
Washington State University
Pullman, WA 99164-5610
(509) 335-2691

WSU has several libraries, including the Fisher Agriculture Sciences Branch Library. The telephone number for the agriculture sciences library is (509) 335-2266. Operating hours at the library vary with the school terms, check with a librarian to obtain more information.

Kerr Library
Oregon State University
Corvallis, OR 97331
(503) 737-3331

Operating hours at the library vary with the school terms. Check with a librarian to obtain more information or call the phone number listed above to obtain recorded information about operating hours.

Sustainable and Organic Farming Lending Library
Sandpoint Research & Extension Center
2105 North Boyer
Sandpoint, ID 83864
(208) 263-2323

The University of Idaho Sandpoint Research and Extension Center has books and videotapes pertaining to sustainable and organic farming available for check-out to University of Idaho employees and Idaho residents. The purpose of the library is to disseminate information on environmentally sound farming practices.

Oregon State University

OSU Extension Service

The OSU Extension Service is the off-campus educational arm of OSU in Corvallis. The Extension Service is jointly funded by local, state, and federal monies. Through the county extension staff, access to the resources of the University can be obtained. Extension offers educational programs through county agents, volunteers, and publications. Agriculture, home economics, 4-H, home gardening, forestry, energy, and marine programs are offered by Extension. Oregon has 36 Extension offices throughout the state, one in each county. The main office is located at the Oregon State University main campus in Corvallis. For more information about Extension services, contact the office in your area.

O.E. Smith, Director
Extension Service
Ballard Extension Hall, Room 101
Oregon State University
Corvallis, OR 97331
(503) 737-2713

Oregon County Extension Office Locations

Baker County Extension

2610 Grove Street
Baker, OR 97814
(503) 523-6418 Ext. 230
Hours: 8:00 - Noon
1:00 - 5:00

Benton County Extension

1849 NW 9th Street, Suite 8
Corvallis, OR 97330
(503) 757-6750
Hours: 8:00 - 5:00

Clackamas County Extension

200 Warner-Milne Road
Oregon City, OR 97045
(503) 655-8631
Hours: 8:00 - Noon
1:00 - 4:30

Clatsop County Extension

2050 Marine Drive
P.O. Box 208
Astoria, OR 97103
(503) 325-8573
Hours: 8:00 - Noon
1:00 - 5:00

Columbia County Extension

Courthouse
St. Helens, OR 97051
(503) 397-3462 Office
(503) 397-2760 FAX
Hours: 8:00 - 5:30

Coos County Extension

Coos County Coquille Annex
290 North Central
Coquille, OR 97423
(503) 396-3121 Ext. 246
Hours: 8:00 - Noon
1:00 - 5:00

Crook County Extension

Courthouse
Prineville, OR 97754
(503) 447-6228
Hours: 8:00 - 5:00

Curry County Extension

Courthouse
P.O. Box 488
Gold Beach, OR 97444
(503) 247-6672 Office
(503) 247-2312 FAX
Hours: 8:30 - Noon
1:00 - 5:00

Deschutes County Extension

1421 South Highway 97
P.O. Box 756
Redmond, OR 97756
(503) 548-6088
Hours: 8:00 - Noon
1:00 - 5:00

Douglas County Extension

1134 SE Douglas Avenue
P.O. Box 1165
Roseburg, OR 97470
(503) 672-4461
Hours: 8:00 - 5:00

Gilliam County Extension

Courthouse
P.O. Box 707
Condon, OR 97823
(503) 384-2271
Hours: 8:00 - Noon
1:00 - 4:30

Grant County Extension

Courthouse
P.O. Box 69
Canyon City, OR 97820
(503) 575-1911
Hours: 8:00 - Noon
1:00 - 5:00

Harney County Extension

Courthouse
450 North Buena Vista
Burns, OR 97720
(503) 573-2506
Hours: 8:00 - Noon
1:00 - 5:00

Hood River County Extension

2990 Experiment Station Drive
Hood River, OR 97031
(503) 386-3343
Hours: 8:00 - Noon
1:00 - 5:00

Jackson County Extension

1301 Maple Grove Drive
Medford, OR 97501
(503) 776-7371
Hours: 8:00 - 5:00

Jefferson County Extension

Madras Office
34 SE "D" Street
Madras, OR 97741
(503) 475-3808 Office
(503) 475-6063 FAX
Hours: 8:00 - Noon
1:00 - 5:00

Warm Springs Indian Reservation Office

1134 Paiute Street
P.O. Box 430
Warm Springs, OR 97761
(503) 553-3238 Office
(503) 553-1924 FAX
Hours: 8:00 - Noon
1:00 - 5:00

Josephine County Extension

215 Ringuette Street
Grants Pass, OR 97527
(503) 476-6613
Hours: 10:00 - 4:00

Klamath County Extension

3328 Vandenberg Road
Klamath Falls, OR 97603
(503) 883-7131
Hours: 8:00 - 5:00

Lake County Extension

Courthouse
Lakeview, OR 97630
(503) 947-6054
Hours: 8:00 - Noon
1:00 - 5:00

Lane County Extension

950 West 13th Avenue
Eugene, OR 97402
(503) 687-4243
Hours: 8:00 - Noon
1:00 - 5:00

Lincoln County Extension

29 SE Second Street
Newport, OR 97365
(503) 265-6611 Ext. 207
Hours: 8:00 - 5:00

Linn County Extension

Fourth and Lyons
P.O. Box 765
Albany, OR 97321
(503) 967-3871
Hours: 8:00 - Noon
1:00 - 5:00

Malheur County Extension

710 SW Fifth Avenue
Ontario, OR 97914
(503) 881-1417 Office
(800) 872-8980 Office
(503) 687-3614 FAX
Hours: 8:00 - Noon
1:00 - 5:00

Marion County Extension

3180 Center Street NE, Room 160
Salem, OR 97301
(503) 588-5301
Hours: 8:00 - 5:00

Morrow County Extension

Pettyjohn Building
430 Heppner-Lexington Highway
P.O. Box 397
Heppner, OR 97836
(503) 676-9642
Hours: 8:00 - Noon
1:00 - 5:00

Multnomah County Extension

211 SE 80th
Portland, OR 97215-1523
(503) 254-1500 Office
(503) 257-1047 FAX
Hours: 8:00 - Noon
1:00 - 5:00

Polk County Extension

182 SW Academy, Suite 202
P.O. Box 640
Dallas, OR 97338
(503) 623-8395
Hours: 8:00 - Noon
1:00 - 5:00

Sherman County Extension

Courthouse
P.O. Box 385
Moro, OR 97039
(503) 565-3230
Hours: 8:00 - 12:00
12:30 - 4:30

Tillamook County Extension

2204 Fourth Street
Tillamook, OR 97141
(503) 842-3433
Hours: 8:00 - Noon
1:00 - 5:00

Umatilla County Extension

721 SE Third Street, Suite 3
Pendleton, OR 97801
(503) 276-7111, Extension 235
Hours: 8:00 - Noon
1:00 - 5:00

Union County Extension

Route 1, Box 1705
10507 North McAlister Road
La Grande, OR 97850
(503) 963-1010
Hours: 8:00 - 5:00

Wallowa County Extension

Courthouse
P.O. Box 280
Enterprise, OR 97828
(503) 426-3143
Hours: 8:00 - Noon
1:00 - 5:00

Wasco County Extension

207 Courthouse Annex A
400 East Fifth
The Dalles, OR 97058
(503) 296-5494
Hours: 8:00 - Noon
1:00 - 5:00

Washington County Extension

Courthouse
2448 SE Tualatin Valley Highway
Hillsboro, OR 97124
(503) 681-7009
Hours: 8:00 - 4:00

Wheeler County Extension

Courthouse
P.O. Box 407
Fossil, OR 97830
(503) 763-4115
Hours: 8:00 - Noon
1:00 - 5:00

Yamhill County Extension

Courthouse
2050 Lafayette Street
McMinnville, OR 97128
(503) 434-7517
Hours: 8:00 - 5:00

Oregon Agricultural Experiment Station (AES)

The Experiment Station has been Oregon's research center for agriculture since 1888. The Station, in partnership with teaching, Extension, and international divisions, is part of the College of Agricultural Sciences. From campus headquarters in Corvallis, the Station directs nine branch stations across the state, each dedicated to the agricultural needs of its own community. Information about research conducted by the AES is disseminated through teaching, the Extension Service, meetings, the news media, and publications. Money for research comes from several sources including the State of Oregon's general fund, private foundations, industry, grants, the federal government, product sales, and service fees.

Station locations are listed below; they are open to the public during regular business hours. Call or visit the Station nearest you, or contact the Director's office for more information.

Thayne Dutson, Director
Agricultural Experiment Station
Strand Agriculture Hall
Oregon State University
Corvallis, OR 97331
(503) 737-4251 Office
(503) 737-3178 FAX

Oregon Agricultural Experiment Station Locations

Central Oregon Agricultural Experiment Station

850 NW Dogwood Lane
Madras, OR 97741
(503) 475-7107

Columbia Basin Agricultural Research Center

Highway 11/Crawford Hollow Road
P.O. Box 370
Pendleton, OR 97801
(503) 278-4186

Eastern Oregon Agricultural Research Center

Star Route 1, 4.51 Highway 205
Burns, OR 97720
(503) 573-2064

Hermiston Agricultural Research & Extension Center

Hinkel Road
P.O. Box 105
Hermiston, OR 97838
(503) 567-6337

Klamath Agricultural Experiment Station

6941 Washburn Way
Klamath Falls, OR 97603
(503) 883-4590

Malheur Agricultural Experiment Station

595 Onion Avenue
Route 1, Box 620
Ontario, OR 97914
(503) 889-2174

Mid-Columbia Research & Extension Center

3005 Experiment Station Drive
Hood River, OR 97031
(503) 386-2030

North Willamette Research & Extension Center

15210 Northeast Miley Road
Aurora, OR 97002
(503) 678-1264

Southern Oregon Agricultural Experiment Station

569 Hanley Road
Medford, OR 97502
(503) 772-5165

OSU Agricultural Communication Publications

On July 13, 1992 the Industrial Building on the OSU campus burned, including the mailing services and printing offices. The building also served as a storage area and distribution point for all OSU Agricultural Communication publications. Many publications are in the process of being reprinted, but many others will need to be revised. Many of the older publications will not be reprinted. We chose to leave the listings of OSU publications in this guide because there is valuable information in them, but they may be somewhat difficult to locate. Check with your local county Extension office or the OSU Kerr Library to try and borrow or copy the publication you are interested in. New publications should be available in the near future. The Agricultural Communications office may be able to help you locate copies of publications should you have difficulty locating them.

Ordering information: OSU Extension Service publications are available for no charge or for sale. Prices are computed based on the production cost, and may change as publications are revised and reprinted. The *Educational Materials* catalog will list new, revised, and reprinted publications as they become available. Check with your county Extension office to obtain a copy, or contact the Agricultural Communications office.

Mail and phone orders:

Publications Orders
Agricultural Communications
Oregon State University
Administrative Services A422
Corvallis, OR 97331-2119
(503) 737-2513 Office
(503) 737- FAX

Office hours: Monday to Friday,
8:00 a.m. to 12:00 noon, and
1:00 p.m. to 5:00 p.m.

Washington State University**WSU Extension Service**

Larry James, Director
Cooperative Extension Service
411-B Hulbert Hall
Washington State University
Pullman, WA 99164
(509) 335-2933 Office
(509) 335-2959 FAX

Washington County Extension Office Locations**Adams County Extension**

Courthouse
210 West Broadway
Ritzville, WA 99169
(509) 659-0090
Hours: 8:30 - Noon
1:00 - 4:30

Asotin County Extension

Courthouse Annex
Box 9
Asotin, WA 99402
(509) 243-4118
Hours: 9:00 - Noon
1:00 - 5:00

Benton County Extension

1121 Dudley Avenue
Prosser, WA 99350
(509) 786-5609
Hours: 8:00 - Noon
1:00 - 4:00

Chelan County Extension

400 Washington Street
Wenatchee, WA 98801
(509) 664-5540
Hours: 8:00 - Noon
1:00 - 5:00

Clallam County Extension

Courthouse
223 East Fourth Street
Port Angeles, WA 98362
(206) 452-7831 Office
(206) 452-0470 FAX
Hours: 8:30 - Noon
1:00 - 5:00

Clark County Extension

11104 NE 149th Street
Bldg. C, Suite 100
Brush Prairie, WA 98606
(206) 254-8436 Office
(206) 260-6161 FAX
Hours: 8:00 - 5:00

Columbia County Extension

Federal Building
202 South Second Street
Dayton, WA 99328
(509) 382-4741
Hours: 9:00 - Noon
1:00 - 5:00

Cowlitz County Extension

207 Fourth Avenue North
Kelso, WA 98626
(206) 577-3014
Hours: 8:30 - 5:00

Douglas County Extension

Courthouse
Box 550
Waterville, WA 98858
(509) 745-8531
Hours: 8:00 - Noon
1:00 - 5:00

Ferry County Extension

Courthouse
Box 345
Republic, WA 99166
(509) 775-3161
Hours: 8:00 - 5:00

Franklin County Extension

Courthouse
Pasco, WA 99301
(509) 545-3511
Hours: 8:30 - 5:00

Garfield County Extension

Courthouse
Pomeroy, WA 99347
(509) 843-3701
Hours: 8:30 - Noon
1:00 - 5:00

Grant County Extension

Courthouse
Box 37
Ephrata, WA 98823
(509) 754-2011
Hours: 8:00 - 5:00

Grays Harbor County Extension

Courthouse
Box 552
Montesano, WA 98563
(206) 249-4332
Hours: 8:00 - 4:30

Island County Extension

Courthouse

Coupeville, WA 98239

(206) 679-7327

Hours: 8:00 - Noon

1:00 - 4:30

Jefferson County Extension

Federal Building

Box 572

Port Townsend, WA 98368

(206) 385-3581

Hours: 8:30 - Noon

1:00 - 4:30

King County Extension

612 Smith Tower

506 Second Avenue

Seattle, WA 98104

(206) 296-3900

Hours: 8:30 - 4:30

Kitsap County Extension

Courthouse Annex, MS-16

Box 146

Port Orchard, WA 98366

(206) 876-7157

Hours: 8:00 - 4:30

Kittitas County Extension

Courthouse

5th and Main

Ellensburg, WA 98926

(509) 962-6811

Hours: 9:00 - 5:00

Klickitat County Extension

Courthouse Annex

Room 210

228 West Main

Goldendale, WA 98620

(509) 773-5817

Hours: Monday 1:00 - 5:00

Tuesday - Friday 9:00 - Noon,

1:00 - 5:00

Lewis County Extension

Courthouse Annex

Box 708

Chehalis, WA 98532-0708

(206) 748-9121 Ext. 212

Hours: 8:00 - 5:00

Lincoln County Extension

303 Sixth

Box 399

Davenport, WA 99122

(509) 725-4171

Hours: 9:00 - Noon

1:00 - 5:00

Mason County Extension

9 Federal Building

Shelton, WA 98584

(206) 427-9670

Hours: 8:00 - Noon

1:00 - 5:00

Okanogan County Extension

Courthouse

Okanogan, WA 98840

(509) 422-3670

Hours: 8:30 - Noon

1:00 - 5:00

Pacific County Extension

Courthouse

Box 88

South Bend, WA 98586

(206) 875-9331

Hours: 9:00 - Noon

1:00 - 5:00

Pend Oreille County Extension

Federal Building

Box 5000

Newport, WA 99156-5045

(509) 447-3325

Hours: 8:00 - Noon

1:00 - 4:30

Pierce County Extension

2401 South 35th
Tacoma, WA 98409
(206) 591-7180, or
(800) 992-2435
Hours: 8:30 - 4:30

San Juan County Extension

Box 609
Friday Harbor, WA 98250
(206) 378-4414
Hours: 8:30 - 4:30

Skagit County Extension

220 East College Way, Suite 180
Mt. Vernon, WA 98273
(206) 428-4270
Hours: 8:30 - 4:30

Skamania County Extension

Courthouse
Box 790
Stevenson, WA 98648
(509) 427-5141
Hours: 8:30 - 5:00

Snohomish County Extension

600 - 128th Street SE
Everett, WA 98208
(206) 338-2400
Hours: 8:30 - 4:30

Spokane County Extension

North 222 Havana
Spokane, WA 99202
(509) 456-3651
Hours: 8:00 - Noon
1:00 - 4:30

Stevens County Extension

230 Williams Lake Road
Colville, WA 99114-9638
(509) 684-2588
Hours: 8:00 - 4:30

Thurston County Extension

County Plaza Building, Suite 216
921 Lakeridge Drive SW
Olympia, WA 98502
(206) 786-5445
Hours: 10:00 - 5:00

Wahkiakum County Extension

Courthouse
Box 278
Cathlamet, WA 98612
(206) 795-3278
Hours: 8:00 - Noon
1:00 - 4:00

Walla Walla County Extension

314 West Main Street
Walla Walla, WA 99362
(509) 527-3260
Hours: 9:00 - Noon
1:00 - 5:00

Whatcom County Extension

Courthouse Annex
1000 North Forest Street
Bellingham, WA 98225
(206) 676-6736
Hours: 10:00 - 11:30
12:30 - 3:00

Whitman County Extension

Public Service Building
310 North Main
Colfax, WA 99111
(509) 397-3401
Hours: 8:00 - 5:00

Yakima County Extension

233 Courthouse
Yakima, WA 98901
(509) 575-4218
Hours: 8:30 - 5:00

Washington Agricultural Research & Extension Unit and Center Locations

Agricultural Research Center

James J. Zuiches, Director
411-B Hulbert Hall
Washington State University
Pullman, WA 99164
(509) 335-4563 Office
(509) 335-2959 FAX

WSU Long Beach Research & Extension Unit

Route 1, Box 570
Long Beach, WA 98631
(206) 642-2031

WSU Prosser Irrigated Agricultural Research & Extension Center

P.O. Box 30
Prosser, WA 99350
(509) 786-2226 Office
(509) 786-3454 FAX

WSU Mount Vernon Research & Extension Unit

1468 Memorial Highway
Mount Vernon, WA 98273-9788
(206) 424-6121 Office
(206) 428-1331 FAX

WSU Vancouver Research & Extension Unit

1919 NE 78th Street
Vancouver, WA 98665
(206) 696-6763 Office
(206) 690-4611 FAX

WSU Wenatchee Tree Fruit Research & Extension Center

1100 North Western Avenue
Wenatchee, WA 98801
(509) 663-8181 Office
(509) 662-8714 FAX

WSU Puyallup Research & Extension Center

7612 Pioneer Way
Puyallup, WA 98371-4998
(206) 840-4500 Office
(206) 840-4669 FAX

WSU Publications

Many WSU publications that are available are not listed in this Resource Guide. For a complete listing of publications request the current *Educational Materials Bulletin*, WSU Publication No. C 0506, from your local county Extension Office or from the Bulletin Office at WSU. The Educational Material Bulletin is available free.

Extension publications are written in a popular style, and contain largely how-to information. They are coded EB, EC, EM, FG, MCP, PNW, and WREP. They are all available for sale or at no charge.

ARC publications materials report research and are intended for people who want technical information. The publications are coded XB, XC, and XT. These are free, with a few exceptions which are noted when listed.

Ordering information: WSU publications are available at no charge, or for sale. Prices are computed based on the production cost and may change as publications are revised and reprinted.

County Extension offices of the WSU Extension Service stock a variety of currently available publications; if not available at the office, the county staff can order a copy for you. All 39 WSU county Extension Office locations and phone numbers are listed above.

Pullman: If you are in Pullman, materials may be purchased from the WSU campus Bulletin Office (see address below).

Agricultural Research Center publications: Washington residents may request one free copy of up to 10 different titles per month. Residents of other states may request one free copy of up to 5 different titles per month. A few of the ARC publications are available for a fee.

Mail and phone orders: Publications may also be ordered by mail or telephone from:

Bulletin Office
Cooperative Extension
Cooper Publications Building
Washington State University
Pullman, WA 99164-5912
Telephone orders and price quotes:
(509) 335-2857

Discounts: A 25% discount is given on orders of 100 copies or more of a single title, or on orders of \$100 or more of a single title. There are no discounts on SP or MCP Series publications.

Payment: Make checks, purchase orders, or money orders payable to "Cooperative Extension Publications." Firms and institutions may send purchase orders for orders of \$10 or more.

Pacific Northwest Publications

Pacific Northwest (PNW) Extension publications are jointly produced by Washington, Oregon, and Idaho with tri-state recommendations. PNW publications can be ordered through either OSU, WSU, or the University of Idaho Extension or publication offices.

University of California Publications

The University of California Division of Agriculture and Natural Resources (ANR) produces a number of agricultural publications. The latest edition of the *UC Agricultural Publications* catalog is available free, contact the UC office listed below to receive a copy.

Ordering Information: All sales are final. No publication may be returned for cash or credit.

Mail and phone orders: Publications may also be ordered by mail or telephone from:

ANR Publications
University of California
6701 San Pablo Avenue
Oakland, CA 94608-1239
(510) 642-2431 Office
(510) 643-5470 FAX

Discounts: Discounts are available to individuals or groups ordering 10 or more copies of the same title sent to one address. 10-49 copies of one title: 20% discount; 50 to 99 copies of one title: 25% discount. Special discounts may be available on orders of 100 or more copies of a single title.

Payment: Minimum order is \$1; \$10 if charged to VISA or MasterCard; or \$25 if paid by purchase order. Make checks payable to *UC Regents*; prices include postage and handling.

NOTES

"If we don't change our direction we'll end up where we're headed."

A Chinese Proverb



DATABASES AND COMPUTER SOFTWARE

Databases
Computer Bulletin Boards
Software
Computer Classes and
Workshops

Databases are computerized listings of sources of information. For example, users may search by title, author, subject, or topic to locate articles, books, and other materials. Bulletin boards contain a variety of types of information that is frequently updated.

Databases

agAccess Book and Software Database

agAccess, a comprehensive agricultural information resource, sells a wide variety of books, software, databases and other reference materials. They maintain two fully indexed computerized databases.

Book Database: Includes comprehensive access to all agricultural books available from agAccess. These can be searched by subject. The subject index contains over 450 categories and is available free upon request. The index contains information including title, author, type of cover, number of pages, ISBN, and the price of each book.

Software Database: Contains listings for over 1,900 agricultural software products. Printouts include the manufacturer's address, price, information on types of computers supported, and a brief review of each program. Printouts can be sorted by type of computer or by specific agricultural application. The subject guide used to select the printout categories is available free.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177 Office
(916) 756-7188 FAX

Agricola

The Agricola database provides a comprehensive bibliographic index to basic and applied agriculture literature. A range of subjects including agricultural administration and legislation, soil and water resources, food and fiber products, extension and training programs, and all aspects of plant and animal production are covered. Included are references to books, reports, journal articles, patents, audio-visual materials, software, and other materials. Agricola is available on-line in the U.S. through the commercial vendors DIALOG and BRS and may also be accessed in many university libraries.

Searching Agricola for... Low Input/Sustainable Agriculture STS-02 by Karl R. Schneider and Maria Stransky. The booklet is designed to help users access Agricola information more efficiently. It can be obtained by sending a self-addressed, gummed label to the National Agriculture Library address listed below.

For more information contact:

Alternative Farming Systems
Information Center
Room 11
National Agricultural Library
Beltsville, MD 20705
(301) 344-3724

Alternative Agricultural Opportunities Database

A database developed by the Center for Alternative Plant and Animal Products. The Center is sponsored by the Agricultural Utilization Research Institute, the Minnesota Extension Service and the University of Minnesota Agricultural Experiment Station. A quarterly newsletter, *BioOptions*, is also available (see the Periodical section for more information). The database contains information on alternative cropping systems for the U.S. and is available only on diskette or as a computer print out.

Available from:

Center for Alternative Plant and
Animal Products
305 Alderman Hall
1970 Folwell Avenue
University of Minnesota
St. Paul, MN 55108
(612) 625-5747

Agricultural Planning Expert (APEX) Computer Program

The APEX computer program was designed by the Agricultural Research Service and the University of Maryland Cooperative Extension Service to assist farmers in making production, economic, and other critical decisions. The system enables extension agents to show individual farmers how well they might

do raising one or more commodities from a broad array of possibilities.

For more information contact:

Yao-Chi Lu
USDA-ARS Systems Research
Laboratory
BARC-West
Beltsville, MD 20705
(301) 344-1821

IMPACT

The University of California's Division of Agriculture and Natural Resources and the Statewide IPM Project maintains a pest management database. Known as "IMPACT," the database includes pest and plant models, a degree-day program, meteorological information, and an electronic mail service. Access to the public is before 8:00 a.m. and after 5:00 p.m. on weekdays. A user's manual is available for \$13.

For more information contact:

IPM Implementation Group
2101 Wickson Hall
University of California
Davis, CA 95616
(916) 752-7826

Living Mulch Database

Many sources of information on living mulches including technical, scientific publications and general books are part of the database collection. The database is housed at the Integrated Plant Protection Center (IPPC) on the main Oregon State University campus in both hard copy files and on an IBM-compatible computer. There is no charge to access the database.

For more information contact:

Alan Cooper
IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331
(503) 737-3541

The National CD-ROM Sampler: An Extension Reference Library

The CD-ROM sampler program is an agricultural reference library on compact disc and contains about 50,000 pages of information from the USDA, state extension services, and land grant universities. The program was originally designed to help extension agents answer common questions, and is a joint venture of the Virginia Polytechnic Institute and State University (VPI&SU), the National Agricultural Library, and the University of Minnesota. Minimum hardware requirements are a CD-Rom player attached to an IBM PC-XT compatible computer. Price: \$99 for nonprofit groups, \$199 for other groups and individuals.

Available from:

Interactive Design and Development
VPI&SU
Plaza I, Building D
Blacksburg, VA 24061-0524

National Herbicide Use Database

The database contains estimates of use for 96 herbicides on 84 crops in the late 1980s. The database is available on national, state, and local levels. Prices vary.

For more information contact:

Resources for the Future
1616 P Street NW
Washington D.C. 20036
(202) 328-5025

Northern Rockies Sustainable Agriculture Network Database

The database includes information on how successful certain sustainable farming practices in the Northern Rockies were in achieving one or more of 15 designated farm goals. The database is a compilation of results from a survey of farmers using alternative practices in the Northern Rockies and prairie provinces of Canada. The database is not available "online", but information can be obtained by contacting the Alternative Energy Resources Organization (AERO) office. AERO will do the search and send a printed copy of the

requested information. The first two searches are free. Copies up to 5 pages long are free, after which copying and postage charges are applied.

For more information contact:

AERO
44 North Last Chance Gulch #9
Helena, MT 59601
(406) 443-7272

Pesticide Alternatives Database

The Division of Agriculture and Natural Resources (DANR) compiled this database from surveys sent to farmers about pesticides and alternative pesticides used on farms. The database contains information regarding currently available information including: biological alternatives to pesticides; chemical alternatives that meet the Organic industry regulations; synthetic organic chemicals; cultural alternatives; and genetic and plant improvements. The database is available on a 3.5-inch disk for IBM compatible microcomputers for \$20 plus \$2.50 shipping and handling. Printed copies of information on an individual crop are also available (inquire about prices for individual crops). A printout of the entire database is \$80.

Available from:

Statewide IPM Project
IPM/IG, University of California
Davis, CA 95616
(916) 752-8350

PlantMaster

PlantMaster is a computerized database containing information on over 1000 native California and other low-water-use plants. Available from Acacia Software Company, the database contains about 600 plants that require no more than one watering every two weeks in the summer, and about 300 requiring no more than one watering per month (assuming average weather conditions in southern California). Hundreds of characteristics such as growth habit, height, flower color, and soil needs are provided for each plant in the database, and users can generate lists of plants with

particular groups of characteristics. The PlantMaster software package costs about \$550.

For more information contact:

Acacia Software
P.O. Box 90525
Santa Barbara, CA 93190

Sustainable Dryland Cereal/Legume Database for the Northwest U.S.

The database contains information on sustainable farming systems of the Northwest region, concentrating primarily on dryland cereal and legume production. This database is not available "online." The information is stored on a shareware database program (PC File 5). PC File 5 is an easy to use database that can be accessed with an IBM compatible personal computer or on MacIntosh computers with ability to convert to IBM data programs. The database software may be purchased at computer software stores that handle shareware for approximately \$100. The information files only, not the software, are available from Washington State University for a nominal price.

For more information contact:

Bulletin Office
Cooperative Extension
Washington State University
Pullman, WA 99164-5912
(509) 335-2857

Traditional Agriculture and Plant Pathology Database

The TAPP computerized database contains references to published materials on traditional methods of managing plant diseases. Available in several file formats. A donation of \$35 is suggested.

For more information contact:

H. Dale Thurston
Department of Plant Pathology
344 Plant Sciences Building
Cornell University
Ithaca, NY 14853

USDA Pesticide Database

The USDA has developed a computerized database of over 100 common pesticides. Information includes the physical and chemical properties of pesticides. Work is underway to expand the list. The database will be available on floppy disks. Price: to be announced.

For more information contact:

USDA Agricultural Research Service
BARC, Building 011A, Room 165B
Beltsville, MD 20705

Weed Management Database

The Weed Science Society of America (WSSA) has developed a computerized listing of all extension service weed publications available in the U.S. and Canada. The database lists weed management guides, software programs, videos, and slide sets useful to farmers. \$20.

Available from:

WSSA
309 West Clark Street
Champaign, IL 61820
(217) 356-3182

Computer Bulletin Boards

Agricultural Library Forum (ALF)

ALF is the National Agricultural Library's (NAL) computer bulletin board. Information available includes bulletins, download-able data, publications, and messages. The "bulletins" section contains the NAL's hours and policies, a calendar of events describing NAL workshops, and a listing of job announcements. ALF can be accessed 24 hours a day, 7 days a week with a compatible microcomputer and modem. Cost: phone call.

For more information contact:

National Agricultural Library
Public Services Division Room 100
Attn: ALF
10301 Baltimore Blvd.
Beltsville, MD 20705
(301) 344-8510 - bulletin board
(301) 344-2113 - voice

ATI-NET

ATI-NET contains information on California agriculture, electronic mail, teleconferencing, extensive job listings, and free communications software. To access, set modem at 300 or 1200 baud when calling (209) 278-4265, or set modem at 1200 or 2400 when calling (209) 278-4615. Must use lower case, echo off. No restrictions, sign on as "public." For problems call (209) 294-2361. Cost: phone call.

California State University, Fresno
ATI-NET, 209-278-4265 (300/1200), 209-278-4615 (2400) (voice 209-278-4872). No access restrictions (sign on as "public"); must use lower case, echo off; cost: telephone call. USDA news, extensive job listings, electronic mail, teleconferencing, weather reports.

For more information contact:

California Agricultural Technology
Institute
California State University
Fresno, CA 93740-0079
(209) 278-4872

The Good Earth Forum of CompuServe Information Service

A pay-as-you-go computer bulletin board that offers information on homesteading, vegetable gardening, herbs, pests and fertilization. Also included are data libraries and computer programs available for downloading to home computers. A microcomputer and a modem are needed to access CompuServe. Trial subscriptions of the service are available at many computer stores.

For more information contact:

CompuServe
P.O. Box 20212
Columbus, OH 43220
(800) 848-8199

Organic Producers Computer Commodity Board

Contains lists of currently available organic crops. Growers may send their listings by mail or phone; information may be accessed

through a computer equipped with a modem or by requesting a printed copy. Listings are \$1 per day with a twenty day minimum charge. Printouts of the board information are \$5. There is no charge for reading the board other than long-distance phone charges.

For more information contact:

Garth Bare or Tim Walters
P.O. Box 9547
Kansas City, MO 64133
(816) 737-0064

National Biological Impact Assessment Program (NBIAP)

NBIAP is a computerized bulletin board program sponsored by the Virginia Polytechnic Institute. Designed to facilitate safe evaluation of genetically modified organisms in the environment. Contains a bulletin board and databases. No access restrictions, use modem set at 300/1200/2400. Cost: 30 minutes toll-free per 24 hours. (800) 624-2723.

Virginia Polytechnic Institute National Biological Impact Assessment Program (NBAIP), 800-624-2723. No access restrictions; 300/1200/2400; cost: 30 minutes toll-free per 24 hours. Designed to facilitate safe evaluation of genetically modified organisms in the environment; bulletin board, databases.

The list below is derived from information posted on the National Agricultural Library Forum BBS.

University of Missouri-Columbia

Extension AGEBB, 314-882-8289 (voice 314-882-4827). No access restrictions; 300/1200/2400; cost: telephone call. Message system, bulletins, public domain software.

National Agricultural Library Forum

(ALF), 301-344-8510 (voice 301-344-2113). No access restrictions; cost: telephone call. Bulletins, downloadable data and publications.

University of Kentucky EXTENSION-NET (voice 502-425-4482, Scott Wells). No access restrictions; cost: telephone call. Extension information, message system.

Alberta Agriculture COMPUT-FARM RBBS, 403-556-4240 (voice 403-556-4104). No access restrictions; 300/1200/2400; cost: telephone call. Downloadable programs, commercial agricultural software directory.

University of Arizona College of Agriculture Computer Applications Group BBS, 602-621-2997 (voice 602-621-2134). First-time users can leave messages only to SYSOP, but can download files immediately; 300/1200/2400; cost: telephone call. 20 megabytes of downloadable programs.

University of Nebraska IANR BBS, 402-472-6615 (voice 402-472-6708). No access restrictions; 300/1200; cost: telephone call. Bulletin board, downloadable files.

University of Wisconsin UWEX-IPM, 608-262-3656 (voice 608-262-0170). No access restrictions; 300/1200/2400/4800/9600; cost: telephone call. Dedicated to integrated pest management and sustainable agriculture.

North Dakota State University NDSU BBS, 701-237-8661 (voice 701-237-8627). Enter 20 when asked for class; 300/1200; cost: telephone call. Downloadable files for many kinds of computers, including Amiga, Apple, Commodore, IBM, and Macintosh.

National Small Flows Clearinghouse Wastewater Treatment Information Exchange, 800-544-1936 (voice 800-624-8301). Weekdays 12 noon to 9 a.m. and weekends Friday noon to 9 a.m.

Monday; 2400; cost: toll-free. Deals with wastewater technology and management for small communities.

Cornell University CENET (voice 607-255-8127). Extension and University faculty accounts free, New York private users pay \$50 annually, out-of-state users pay \$200 annually, not counting phone charges. Used mainly to disseminate information on vegetable and fruit crops, especially pest management and disease control; electronic mail; downloadable Macintosh software.

South Dakota State University ACCESS, 605-688-4710 (voice 605-688-4411). All users must register, otherwise no access restrictions; 300/1200/2400; cost: telephone call. Bulletins, extension information, downloadable software.

Rutgers University Cooperative Extension BBS, 800-722-0335 (New Jersey only), 201-383-8041. No access restrictions; 300/1200/2400; cost: telephone call (toll-free in New Jersey). Electronic mail, bulletin system, extension information.

North Central Computer Institute BBS, 608-262-6224 (voice 608-263-4791). \$25 annual fee plus phone charges; 1200/2400. Many downloadable programs, message service, conferences, bulletins.

National Weather Service Climate Dial-Up Service (voice 301-763-4670). Annual fee ranges from \$48 for very limited use to \$600 for unlimited use. Daily, weekly, monthly, and annual weather summaries; short- and long-term forecasts; Degree Day and Growing Degree Day summaries.

Iowa Cooperative Extension Service
EXNET, 515-294-8354 (voice 515-294-8658). No access restrictions; cost: \$25 per year plus phone call. Extension information, weather reports, downloadable software, state and regional newsletters, on-line question-and-answer sessions, electronic mail.

Computer Software

AGSTATS is a statistical analysis software program for IBM-PC compatible computers. The program allows growers to analyze information from field trials with up to 15 treatments and as many as 6 replications from completely randomized or complete block design experiments. The program generates a standard analysis of variance table with significance tested at the .05 level. DOS version 2.1 or higher and at least 256KB of memory are required; a hard disk drive is not necessary, and no graphics capability is required. To receive a copy send either a formatted 3.5-inch or 5.25-inch disk and a self-addressed stamped diskette mailer *or* a check or money order for \$5 made payable to Oregon State University.

Available from:

Extension Crop Science
Crop Science Building, Room 131
Oregon State University
Corvallis, OR 97331
(503) 737-5854

W.E.E.D.S. - Western Expert

Educational Diagnostic Systems is a random access software package that allows users to identify any of the 320 species illustrated in *Weeds of the West* (see *Vegetation Management* section of this guide for more information about the book). Developed by Richard R. Old, Robert T. Dobbins, Patricia J. Hine, and Robert H. Callihan of the University of Idaho. The program is accompanied by an extensive illustrated manual explaining how to quickly recognize the characteristics used in plant

identification. The program is designed for use on IBM-compatible computers. Requires DOS 3.0, 384K RAM; a hard disk is recommended. Specify disk size you prefer when ordering (3.5-inch or 5.25-inch). Cost: \$79.99 retail; \$59.99 educational; for either price include \$5 for shipping and handling. Make checks payable to: Weed Diagnostic Lab.

Available from:

Weed Diagnostic Lab
Department of Plant, Soil &
Entomological Sciences
University of Idaho
Moscow, ID 83843-4196
(208) 885-7831

AGASSISTANT software helps build a "knowledge base" of definitions and rules for making decisions in a given area of agricultural expertise. For example, **WEEDER** a knowledge base for identifying grass and weed species commonly found in lawns, was built using AGASSISTANT. Knowledge bases could be constructed to aide in pest identification, disease problem diagnosis, marketing decisions, and cultivar choices. The program requires an IBM PC compatible computer with a hard disk. Cost is \$30 postpaid.

For more information contact:

AGASSISTANT
Dr. T.W. Fermanian
University of Illinois
1201 South Dornier Drive
Urbana, IL 61801

PC-BEEPOP is a computer program for beekeepers and is designed to predict the effects on honey bees of various management decisions. The program helps estimate losses due to disease, weather, aging and pesticides (the program provides information on the toxicology of various pesticides). To operate, the program requires an IBM-AT compatible computer with a hard disk and color graphics. Available free; send a blank, formatted 5.25-inch, 1.2 mb floppy disk and an addressed mailing label to the address below.

Available from:

Gloria DeGrandi-Hoffman
 USDA Agricultural Research Service
 Carly Hayden Bee Research Center
 2000 East Allen Road
 Tucson, AZ 85719

Cornucopia, The Small Farm Planner is a software program designed to help farmers and ranchers make quick decisions about crop/livestock combinations and cost efficient strategies. The program contains enterprise budgets for small grains, livestock, berries, vegetables, Christmas trees, Shiitake mushrooms, herbs and pick-your-own fruit. The program runs on IBM PC compatible computers. A demonstration disk is available for \$15.

For more information contact:

Amber Waves Software
 202-D Central Manor Road
 Mountville, PA 17554
 (717) 285-3734

Washington State University has the following agricultural software programs available. For ordering information see the publications ordering information in the *University Resources* section of this guide.

- MCP0001 Finance: **Analyzing Agricultural Investments** (IBM-PC compatible) \$10
- MCP0003 **Buyorlea Farm Machinery Microcomputer Program** and User Guide (IBM-PC compatible) \$10
- MCP0003D **Economics of Alternative Methods of Financing Farm Machinery** (User Guide)
- MCP0005 **Potato Contract I: A Potato Contract Evaluation Program** (IBM-PC compatible) \$50
- MCP0006 **WIF: Washington Irrigation Forecaster**

- MCP0007 **Grain 89: Lotus Spreadsheet for Analyzing Farm Program Participation** (IBM-PC compatible) \$15
- MCP0008 **Hop Mildew Program** \$25

Oregon State University a few agricultural software programs available for \$25 (each program) plus \$3 shipping and handling. All programs listed are designed for use on IBM-compatible computers. For more information about a specific program call (503) 737-2513 and ask for the computer software descriptive brochure. For ordering information see the publications listing in the *University Resources* section of this guide.

- EM 8464 **ACE**
 Allows the user to select alfalfa cultivars that meet user-defined criteria from a database of about 450 cultivars. Information on brand, year of release, winter hardiness, and disease and insect resistance is included
- EM8308 **PLANTEMP**
 Predicts wheat plant development and ground cover by wheat plants in their vegetative stage
- EM 8310 **WOOLPRO**
 Simplifies record keeping associated with the operation of a wool pool
- EM 8396 **HAYVAL**
 Evaluates the winter feeding needs of cattle, sheep, and horses

The University of Minnesota produces several horticultural software programs. The following programs are designed for use on IBM PC compatibles, with DOS 2.1 or above.

Forecaster: Predicting Biological Phenomena Based on Daily Temperatures #AG-CS-3029. Predicts timing of certain biological events in plants and cold-blooded animals, such as egg hatching, presence of first adult insects, seed germination, and flower bloom, based on starting data of development,

lower developmental threshold temperature, and cumulative degree days required for an event. Records of local temperatures are necessary. Requires 256KB RAM, one or two disk drives; hard disk recommended, printer optional. \$69

Pesticide Mix Calculator #AG-CS-2500.

Provides five different ways to calculate pesticide mixes: product per acre, product per gallon, actual chemical per acre, water to dilute wettable powder, and dilution of concentrate to recommended percentage. Compares costs of applications of different pesticides. Can keep operation records. Requires 128KB RAM, two disk drives; printer optional. \$39

Turfgrass #AG-CS-2539.

Assists homeowners and grounds maintenance personnel in selecting proper grass seed mixtures to establish lawns, and in selecting appropriate fertilizers for new or established lawns. Recommendations are based on site properties and desired lawn characteristics. Also performs cost and suitability analyses of fertilizers, based on label information. Requires 128KB RAM, one disk drive; printer optional. \$30

WEEDIR #AG-CS-2163. Recommends herbicides for most common weeds found in Minnesota crops. Requires 256KB RAM, two disk drives, hard disk; printer optional. \$50.

Available from:

Distribution Center
University of Minnesota Cooperative
Extension Service
3 Coffey Hall
1420 Eckles Avenue
St. Paul, MN 55108

Advance Reports of the Census of

Agriculture are available in diskette form, on computer tape, and online via the AgriData Network and CENDATA. CENDATA, the Census Bureau's online information service, is available through two vendors: DIALOG and CompuServe. For the diskette, the file structure is Dbase III compatible (a 1.2 MB disk drive is required). Advance Reports highlight basic agricultural statistics for each

county with 10 farms or more in each state, and for the entire United States. The diskettes also include other information such as: farm size, land use practices, machinery, livestock, and major crops harvested. Geographic Area Series, Subject Series, Related Surveys and Horticultural Specialties are all available on computer tape. The Subject Series, Horticultural Specialties and Related Surveys are also available online.

For more information contact:

Census of Agriculture
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402-9325
(301) 763-4100

Farm General Ledger is an accounting shareware program available from Computerized Farm Information Systems (CFIS). CFIS markets software specifically for farmers. Sample program diskettes (5.25 inch or 3.5 inch) of the Farm General Ledger program are available for \$25. If a farmer decides to continue using the software program they are encouraged to order a registered version by sending an additional \$75. User manuals and training materials are included in the price of the registered version. Oftentimes authors will offer support, and program updates as well. Check with CFIS regarding other programs available.

For more information contact:

Computerized Farm Information
Systems
1710 Oldridge Avenue North
P.O. Box 302
Stillwater, MN 55082
(612) 436-6196

Computerized Advisory Service for

Horticulture (CASH) is a software program from Ohio State University that aides in farm management. The program assists fruit and vegetable growers in monitoring to improve the profitability of their farms and markets. The program does not require specific grower data. CASH has its own database with more than 30

enterprises ranging from tree fruit crops to processed vegetables.

For more information contact:

Franklin Hall
Department of Entomology
Ohio State University, OARDC
1680 Madison Avenue
Wooster, OH 44691
(216) 263-3726

North Central Computer Institute (NCCI) offers public domain agricultural software. NCCI has a computerized bulletin board, software catalogs and publishes a quarterly newsletter (available for \$10 a year). The programs are for IBM-compatible micro-computers and sell for moderate prices.

For more information contact:

North Central Computer Institute
667 WARF Office Building
610 Walnut Street
Madison, WI 53705
(608) 263-6224

The Cost and Return Estimator (CARE) software package was developed by the Soil Conservation Service (SCS) to simplify planning for sustainable agricultural systems. The program helps users compare and contrast alternative farming practices. It generates cost and returns for practices currently employed and uses a variety of scenarios that might affect usage, crop yields, and ultimately farm profits. Calculations are made beginning with a base budget put together by SCS personnel and farmers. The base budget is the foundation for customizing all other costs and for developing a picture of an individual farming system. The SCS has released CARE to all automated field offices in the U.S. It is available free of charge.

For more information contact your local SCS office or:

Douglas Christianson
SCS Midwest National Technical
Center
100 Centennial Mall North
Lincoln, NE 68508
(402) 437-5384

Grazing Land Applications (GLA) is another software program developed by the SCS. It helps record, organize, analyze, and transfer information needed to determine grazing management practices. The GLA can be used for any size operation anywhere in the United States.

For more information contact your local SCS office or:

Soil Conservation Service
P.O. Box 2890
Washington, D.C. 20013

A Survey of Geographic Information Systems (GIS) is a compilation of survey information regarding the GIS software package information. GIS is used by local governments and other planning agencies to assist them in making land use decisions. The survey reported in this publication outlines some of the attributes of GIS software packages which can be used to formulate farmland conservation policies. \$10.

Available from:

American Farmland Trust
Publications Department
1920 N Street NW, Suite 400
Washington, D.C. 20036
(202) 659-5170

The Pioneer DollarWise Farm Accounting Program is a single-entry accounting program designed to help farmers become familiar with computerized record-keeping while providing detailed reports of their current financial situation. Information such as production costs per head or acre, general and enterprise income, cash flow, net worth, and Schedule F, C, and A tax require-

ments and listings of vendors, transactions and accounts are included.

For more information contact:

Pioneer Hi-Bred International
(800) 838-5878

Doane has a variety of agricultural software programs available including bulletin boards, electronic mail, market information, and accounting and management programs. Some programs such as "agLine" require a computer with a modem. Doane also publishes a monthly newsletter, *Agricultural Computing*.

1989 Agricultural Computing Software Directory: A comprehensive reference to farm computer software. Included are 650 commercial programs available for on-farm use. A description of each program, equipment requirements, demonstration availability, producer's address and prices are provided. \$19.95.

Computerize Your Farm Accounting: A clear, non-technical reference that aids farmers in developing effective record-keeping systems. Information includes choosing a computer system, developing a chart of accounts, managing cash flow, budgeting, how to prepare an Income Tax Return, and more. Sample record-keeping forms are provided. \$19.95.

The Farmer's Complete Guide to Ag Computing: This guide includes practical tips for making computer work easier and more efficient. In-depth information on computerized accounting systems, spreadsheets, hardware, software programs, and services is provided. \$27.95.

Agricultural Computing is a monthly newsletter published by Doane Information Services. Subscription rate is \$88 a year.

For more information about the four programs listed above contact:

Doane Information Services
11701 Borman Drive, Suite 100
St. Louis, MO 63146
(800) 422-2434

Home Office Computing Magazine

The monthly computing magazine is not designed specifically for agricultural operations, but is a good resource for those who use microcomputers in their business. The magazine is published by Scholastic, Inc. and contains information on software, buyer's guides, business management and answers to common computer problems. \$19.97 per year.

For more information contact:

Home Office Computing
P.O. Box 51344
Boulder, CO 80321-1344

Hacker Freeway

Hacker Freeway is a board game developed by the College of Agriculture at Southern Illinois University-Carbondale to teach computer literacy. The game is designed to teach computer technology and basic computer principles. The game consists of 460 question cards, a playing board, and playing pieces. \$30.

Available from:

AgResources
Department of Agricultural Education
& Mechanization
Southern Illinois University
Carbondale, IL 62901
(618) 536-7733

Mi-Tor

A predator-prey simulation model that was designed to teach the concepts of arthropod population dynamics, but it is used more as a computer game. The playing field is a donut shaped plant consisting of 1250 spaces. Predators and prey move one random space per

chronon until the predators feed on the prey. Predators are capable of learning and must eat to reproduce. Players may change variables such as diapause, dispersal, learning, starvation and reproduction. Mi-Tor is available on a 5.25 floppy disk for IBM compatible microcomputers, free of charge while supplies last.

Available from:

D.J. Horn
Department of Entomology
Ohio State University
1735 Neil Avenue
Columbus, OH 43210
(614) 292-8209

Classes and Workshops

Community Colleges that have Farm Business Management courses generally provide courses on the use of computers in farm management. Check your local community college for computer and family business management classes in Washington, Idaho and Oregon.

"To err is human but to really foul things up requires a computer."

1978 Farmers Almanac



VIDEO TAPES AND OTHER MEDIA OFFERINGS

Pacific Northwest Focus National Focus Catalogs

A growing number of companies and organizations are producing video tapes, slide sets, and other visual media offerings with information about sustainable agriculture. In addition to the list provided below check the "resources" sections of newsletters and journals for listings of new releases and how to obtain them.

Pacific Northwest Focus

Easy Steps to Fruit Tree Pruning

The hour-long video was produced by commercial orchardists. Descriptions of tools, tree-training systems, and rejuvenation of neglected trees are included. \$32.50 post-paid, Washington residents add \$2.24 sales tax.

Available from:

Cedardale Orchards
P.O. Box 594
Conway, WA 98238

Fruit Production Video Tapes from Oregon State University

Budding and Grafting Fruit Trees Produced by the OSU Extension Service, the tape features tree fruit specialists Robert Stebbins and Harold Bjornstad describing budding and grafting information including: reasons for budding or grafting, terminology, tool selection, and step-by-step procedures for the most common budding and grafting methods.

A copy of the publication "Grafting Fruit Trees" is included with the tape. Available for \$40 postpaid from OSU Agricultural Communications (address listed below).

A Grower's Guide to Pruning Highbush

Blueberries The tape covers identification of growth stages, choosing pruning tools, efficient pruning techniques, and pruning for machine harvest. The tape is useful for both commercial and novice blueberry growers. VHS only, publication #VTP 002. \$30 postpaid.

Available from:

OSU Agricultural Communications,
see the *University Resources* section of
this guide for ordering information

1988 Apple Variety Trial Video-Taped

Progress Report A one-hour VHS video tape showing 73 apple varieties both on and off the tree, indexed for quick reference. Included are such new varieties as Royal Gala, Red Jonagold, Braeburn, Fuji, Liberty, and more. A written copy of the progress report helps viewers follow the information relayed in the

video tape. Previous years tapes may also be available. \$25 (post-paid) for the written and video tape reports, or \$2 (post-paid) for a copy of the written report alone. Make checks payable to OSU Extension Service.

Available from:

Robert L. Stebbins
Department of Horticulture
Oregon State University
Corvallis, OR 97331
(503) 737-3464

Irrigation Management Efficiency and Irrigation System Efficiency Two video tapes produced by the OSU Extension Energy Program.

Available from:

Extension Energy Program
Oregon State University
Batcheller Hall 344
Corvallis, OR 97331-2405
(503) 737-3004

Video Tapes available from Washington State University

Pruning Apple Trees: Basic Concepts

Available in both English and Spanish. VHS, 24-minutes each. English version: order publication #VT0001; Spanish: #VT0001S. \$10 each.

Pocket Gopher Management The 17-minute video tape includes information about biological, mechanical, and chemical methods of controlling pocket gophers. VHS. Publication #VT0007. \$28.

Orchard Airblast Spraying VHS. In English, 12 minutes, publication #VT0013; in Spanish, 16 minutes, publication #VT0014. \$30 each.

All three available from:

WSU Publications, see the *University Resources* section of this guide for ordering information

Noxious Weeds of Oregon: A Growing Concern

A video tape produced in 1988 that discusses the impact of noxious weeds on agriculture, recreation, and Oregon's economy in general. The need for early detection and control efforts is emphasized. Four noxious weeds are highlighted: leafy spurge, Italian thistle, tansy ragwort, and gorse. 17 minutes long, in color.

Available from:

Oregon Department of Agriculture
Weed Control
635 Capitol Street NE
Salem, OR 97310

Sustainable Agriculture Video Series

The video on Cover Crops is \$30 Canadian for non-REAP members, \$15 for members + 7% GST (see the *Organizations* section of this guide for more information). Check with REAP for information about U.S. prices and other video tapes in the series.

For more information contact:

REAP-CANADA
Box 125, Glenaladale House
Ste. Anne de Bellevue
Quebec H9X 1C0

Watershed Enhancement: Building Oregon's Future

A 14-minute video tape explaining Oregon's program for improving watersheds and streams. The tape is designed for agency, landowners and managers, or the general public. First distributed in 1989, the tape provides information on Oregon's Watershed Enhancement pro-gram during its first two years. Copies may be borrowed or purchased for \$12.

Available from:

The Governor's Watershed
Enhancement Board
3850 Portland Road NE
Salem, Oregon 97310

NATIONAL FOCUS

Agri-Balance

A slide show made into a video, Agri-Balance portrays the assets of organic farming. The company also produces six other video tapes.

For more information contact:

John Hughes
Shoestring Productions
9559 State Route #28
New Vienna, OH 45159

Alive and Well: Sustainable Soil Management

The video provides a technical introduction to sustainable agriculture and features five different farming operations in which sustainable practices have been successfully implemented. Practices shown in this 30-minute tape include: soil aeration; soil amendments; using biological diversity; reducing off-farm inputs; and market diversification. \$40, make checks payable to UC Regents.

Available from:

Visual Media
University of California
Davis, CA 95616
(916) 757-3278

Alternative Agriculture: Growing Concerns

A documentary originally shown on national television as a five-part series. The series investigates the benefits and drawbacks of low-input sustainable agriculture. \$15, order number: VT005.

Available from:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608
(800) 999-6779
8:30 - 5:00 EST

Alternative Agriculture Oral History Video Tapes

In 1988, the Alternative Farming Systems Information Center at the National Agricultural Library began videotaping a series of interviews with individuals who have made significant contributions to sustainable agriculture. Currently, four tapes are available for loan to individuals and organizations. To borrow any of the tapes listed below, contact your state land-grant university or local public library and ask the librarian to request an interlibrary loan. For additional information, contact Jayne T. MacLean, Coordinator, Alternative Farming Systems Information Center, National Agricultural Library, 10301 Baltimore Blvd., Beltsville, MD 20705; phone (301) 344-3719.

Oral History Interview with Dr. James A. Duke. Videocassette no. 629. Beltsville, MD, USDA, 1988. Dr. Duke is an economic botanist with the USDA Agricultural Research Service, and an internationally recognized authority on herbs.

Oral History Interview with Mr. Robert Rodale. Videocassette no. 670. Beltsville, MD, USDA, 1989. Mr. Rodale, who died in an automobile accident in 1990, headed Rodale Press, publishers of *Organic Gardening* and *The New Farm* (see the *Periodical* section of this guide for more information).

Oral History Interview with Dr. Wes Jackson. Videocassette no. 731. Beltsville, MD, USDA, 1990. Dr. Jackson is the director of The Land Institute near Salina, Kansas. The Institute is a nonprofit educational and research organization promoting sustainable farming techniques.

Oral History Interview with Dr. Paul F. O'Connell. Videocassette no. 732. Beltsville, MD, USDA, 1990. Dr. O'Connell is deputy administrator of the USDA Cooperative State Research Service; he directs several special programs on aquaculture, industrial crops, small-scale farming, and the Sustainable Agriculture Research and Education (SARE) program.

Commercial Vegetable Production (13 minutes) was also produced from the same joint venture as the aforementioned video tapes. Available for \$10 postpaid; make checks payable to Fort Valley State College CEP.

Available from:

John M. Bentley, Head
Extension Communications
P.O. Box 4061
Fort Valley, GA 31030

**California Polytechnic State University
Agricultural Videos**

The Vocational Education Productions (VEP) produces many instructional videos and other materials for agricultural educators. To obtain a complete catalog contact VEP at the address below. Some of the videos available are listed here.

Pest I.D. Kit Slide Sets: Over 105 pest slides illustrate insects, vertebrate pests and beneficial insects. Information on life cycles, insect, spider and mite morphology, and scientific names are included. The complete kit (\$149.95) includes the slide set, a pest identification manual, and a guide for students. Additional manuals and guides are available. A supplemental pest identification slide set includes 44 additional pests and sells for \$70.

Tractor Safety - It's Not Gonna Happen to Me: The 24-minute video discusses heavy equipment safety, including pre-operation checks, transporting tractors, operation check, accident prevention, and emergency response procedures. Available in VHS format in English (#6-084-100P) or Spanish (#6-084-200P). \$95.

Available from:

VEP
Cal Poly
San Luis Obispo, CA 93407
(800) 235-4146 Office
(800) 756-5550 FAX

Common Sense Pest Control for Home and Garden.

A good overview of pest control techniques on a small scale. May be rented for \$25. A \$25 refundable deposit and a \$2 shipping fee are charged in addition to the rental fee.

Available from:

BIRC
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

Composting for Farms

Discusses how to make compost on a commercial scale as a business for farmers. Request tape #8004. \$15.

Available from:

NOFA Video Project
RFD #2
Barre, MA 01005
(508) 355-2853

Conservation on Your Own

A joint project of the USDA Soil Conservation Service and the National Association of Conservation Districts, this video tape is a user's guide for the following conservation practices: measuring and managing crop residue; laying out contour lines and field borders; laying out contour buffer strips; laying out wind strips; using grass to control small gullies; planting and maintaining field breaks; terrace maintenance; and maintaining contour strip-cropping. \$7.50 plus shipping.

Available from:

National Association of Soil
Conservation Districts
Box 855
League City, TX 77574-0855
(713) 332-3402

Erosion Control Video Tape

Farmer built, low-cost gully erosion control structures are described in this 8-minute video tape produced by Indiana's T-by-2000 Educational Project, Purdue University, and the Soil Conservation Service. Directed toward a farmer audience, the video explains the advantages and construction skills needed to build controlled drops, rock or cement block chutes, and stabilized vegetative overfall chutes. Information about residue management and other mechanical and cultural practices to help prevent soil erosion are also discussed. \$15.

Available from:

Media Distribution Center
Purdue University
301 South Second
Lafayette, IN 47905-1092

Equipping for Maximum Net Forage

A 33-minute video about Voisin grazing management from the University of Vermont. Information discussed includes fencing and drinking water equipment, and pasture mass relationships that influence the amount of forage harvested by grazing livestock. \$15 postpaid; make checks payable to the University of Vermont.

Available from:

Bill Murphy
Dept. of Plant and Soil Science
Hills Building
University of Vermont
Burlington, VT 05405

Farmer-To-Farmer: Strategies for Sustainable Agriculture

A six-segment series discussing: field crops; rotational grazing; vegetables; IPM for vegetables and small fruit; IPM for apples; and high-value marketing. The videotapes are produced by Rooy Media and Rodale Institute, with support from the USDA LISA program. The six-part series is designed to be a resource for educators and farmers looking for practical and sustainable agriculture methods. Each

videotape sells for \$29.95, or the entire set may be purchased for \$149.95.

Available from:

Farm Videos
Rooy Media
7407 Hilltop Drive
Frederick, MD 21702

Growing Concerns: The Future of America's Farmland

The American Farmland Trust (AFT) produced this 15-minute video to introduce the critical issues confronting America's farmland. Produced in 1987, the video examines some of the effective conservation strategies in use by farmers, local governments, and organizations like AFT, and is designed to serve as an introduction for a discussion of farmland conservation. \$10 plus \$2.50 for shipping and handling; specify VHS or Beta.

Available from:

American Farmland Trust
Publications Department
1920 N Street NW, Suite 400
Washington, D.C. 20036
(202) 659-5170

Georgia Cooperative Extension Service Video Tapes

The Cooperative Extension Service Programs at Georgia's Fort Valley State College and North Carolina A&T State University have jointly produced several how-to videotapes on "Ways to Grow: Money-Making Ideas for Small Farmers." Two titles currently available videos are: "Growing Shiitake Mushrooms" (13 minutes) and "Woodlot Management" (15 minutes). Each tape costs \$10 postpaid; make checks payable to North Carolina A&T University CEP.

Available from:

Valerie F. McAlpin, Director
Extension/Research Communications
North Carolina A&T University
P.O. Box 21928
Greensboro, NC 27402

Integrated Pest Management

A video tape produced by BIRC. Purchase price: \$39.95.

Available from:

Bio-Integral Resource Center
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

The Key to Effective Irrigation

The Irrigation Association (IA) prepared a 13-minute video demonstrating five essential steps to save water through irrigation in both urban and rural landscapes. Design, equipment, installation, maintenance and water management are discussed. Programs and projects currently undertaken by IA to conserve water are also outlined. The video is available for \$25 to members of the IA, and \$35 for non-members.

Available from:

Irrigation Association
1911 North Fort Meyer Drive,
Suite 1009
Arlington, VA 22209-1630
(703) 524-1200

The Land Stewardship Project Video Tapes

A four-part sustainable farming practices video tape series produced by the Land Stewardship Project (LSP), Blue Moon Productions, and the Sustainable Farming Association of Minnesota is available. Tapes on 'Nitrogen Management', 'Rotational Grazing', and 'Cover Crops' will be available for sale or rental in the Spring of 1991. The 17-minute 'Rotary Hoe' tape is available for \$25 for the first copy, and \$20 for each additional copy. Each video features midwestern farmers sharing their experience with environmentally sound and economically profitable farming methods.

For more information contact:

The Land Stewardship Project
P.O. Box 815
Lewiston, MN 55952
(507) 523-3366

The Land Stewardship Project also loans video tapes. Include \$5 for postage. The LSP requests that borrowers return the tape promptly and in good condition. The following tapes are available:

The Amish: Not to be Modern A PBS documentary on Amish Farming Communities. 59 minutes.

Common Ground WTBS Atlanta Documentary that surveys the state of commercial organic agriculture in the United States. 58 minutes.

Ending the Silence A powerful look at the farm crisis and its effect on northeast-ern Iowa in the early 1980s. 40 minutes.

Fragile Harvest An examination of how our abundant agriculture systems affect the land. 49 minutes.

The Living Soil An intricate look at the miracles of soil. 59 minutes.

Nova: The Goddess of the Earth Explores the scientific evidence for the theory that the Earth is a living, self-regulating organism, and the debate that this radical hypothesis has stirred in the scientific community. 58 minutes.

On American Soil An historical overview of American soil conservation efforts and some of the failures associated with the efforts. 30 minutes.

The Promise of the Land A PBS "Smithsonian World" documentary on the fundamental importance of soil and farmland. Extensive interviews with Wendell Berry, West Jackson, and various farmers. 58 minutes.

Voisin Controlled Grazing Management, A Better Way to Farm 34 minutes.

Water Pollution: Where Does it Come From? 18 minutes

Wildlife and Agriculture Produced by Kansas State University.

Wrath of Grapes Produced by the United Farm Workers of America. 15 minutes.

For more information contact:

The Land Stewardship Project
14758 Ostlund Trail North
Marine, MN 55047
(612) 433-2770

Licking Creek Bend Farm Video

A 12-minute program designed for city children on questions about food and farms. Children in a classroom are shown asking question, and footage of the Licking Creek Bend organic farm is used as a background for the answers. \$17.50.

Available from:

Mike Tabor
706 Erie Avenue
Takoma Park, MD 20912

The Model 100 Moisture Meter

A short video tape explaining the Model 100 Moisture Meter is available for a small handling charge. The meter is designed as a portable field instrument that instantly measures soil moisture to help operators determine the most appropriate time to irrigate.

For more information contact:

Aquaterr Instruments
Tim Weems, Product Manager
P.O. Box 459
Freemont, CA 94538
(415) 657-1201 Office
(415) 657-1203 FAX

Nature's Ag School

The 40-minute video tape details many aspects of Dick and Sharon Thompson's 300-acre hog and beef operation in Iowa. Included with the VHS video tape is a transcript of the narration, and three copies of a book about the Thompson farm. The video tape can be rented

or purchased: \$55 for a 10-day rental of the video tape; purchase price is \$150 (rental cost may be applied toward the total purchase price). Both prices include shipping and handling charges.

Available from:

Regenerative Agriculture Association
222 Main Street
Emmaus, PA 18098

Perspectives on Solarization

A 20-minute audio cassette made specifically for California farmers unfamiliar with soil solarization techniques and processes for controlling pests and diseases. The tape features interviews with University of California farm advisors, growers, and others. \$5. Make checks payable to 'UC Regents.'

Available from:

The Small Farm Center
University of California
Davis, CA 95616-8699
(916) 757-8910

Pest Management in the Vegetable Garden

Purchase \$25.

Available from:

Colorado State University
Bulletin Room
171 Aylesworth SW
Fort Collins, CO 80523

Roots and Herbs Video

A VHS video tape shows where to look for several high-value wild plants such as ginseng, goldenseal, and bloodroot. Also included is information about responsible collection techniques, how to identify these plants, and information about preparing them for wholesale buyers. \$29.95 postpaid.

Available from:

Roots & Herbs
P.O. Box 110
Lebanon, MO 65536

Soil Management: The Key to Sustained Fertility

A technical introduction to sustainable agriculture. Taped on location in northern California, the program features five different farming operations where sustainable practices have been successfully implemented.

For more information contact:

Sustainable Agriculture Research and
Education Program
University of California
Davis, CA 95616
(916) 752-7556
Attention: Video

San Luis Video Publishing

San Luis Video produces three IPM video tapes: *Integrated Pest Management in Agriculture* (#B025), *Integrated Pest Management in the Greenhouse* (#B026), and *Integrated Pest Management: An Introduction* (#B027). The first two are available for \$75 each, the introductory tape is available for \$39.95. Include \$3 shipping and handling per tape ordered. San Luis Video also publishes a catalog of all the video tapes they produce; catalogs are available free.

Available from:

San Luis Video Publishing
P.O. Box 4604
San Luis Obispo, CA 93493
(805) 545-5426 office
(805) 545-5423 FAX

The Science and Necessity of Organic Residues in the Soil

Robert Parnes speaks about plant nutrients and organic matter in this 60-minute video tape. Copies are available for \$29.95.

Available from:

Peter Griesinger
Griesinger Films
7300 Old Mill Road
Gates Mills, OH 44040
(213) 423-1601

Trapping and Removing Nuisance Wildlife

A videotape that describes information such as equipment, bait selection, animal behavior, and live trapping of skunks, raccoons, squirrels, groundhogs, and other animals. \$42.

Available from:

Pest Wildlife Removal Services
P.O. Box 5628
Harrisburg, PA 17110

The Wealth in Wetlands

Advantages of wetlands on farms is the focus of this 23-minute video produced by the USDA's Soil Conservation Service. The video features interviews with farmers in California, Indiana, Louisiana, Minnesota and New York. Wetland restoration techniques and sources of help for wetland restoration and conservation are discussed. Sponsors of the production are: SCS, the National Association of Conservation Districts, Successful Farming magazine, Ducks Unlimited Inc., and the U.S. Department of Interior's Fish and Wildlife Foundation. Each Soil and Water Conservation District has a copy of the 1/2-inch VHS tape for local use. Copies may be purchased for \$10, or may be rented for \$5 from the national office.

Available from:

The National Association of
Conservation Districts
P.O. Box 855
League City, TX 77574-0855
(800) 825-5547

Windbreaks: Planning, Planting and Care

The 17-minute video details growing and maintaining a windbreak from the planning stages to the mature windbreak. Includes information on tree selection, planting, protecting, and pruning. The video is available for loan from local conservation districts in most of the Great Plains states, or may be ordered.

For more information contact:

Gary Schwen
U.S. Soil Conservation Service
655 Parfait
Denver, CO 80201
(303) 236-2886

CATALOGS

Several companies distribute video tapes, audio cassettes and slide sets on agriculture. The following companies have catalogs or listings of a variety of media offerings.

American Nurseryman Publishing Company
Horticulture Books and Videos Catalog
Book Department
111 North Canal Street, Suite 545
Chicago, IL 60606-7276
(800) 621-5727 office
(312) 782-3232 FAX

Bio-Integral Resource Center
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

Vocational Education Productions Catalog
California Polytechnic State University
San Luis Obispo, CA 93407
(800) 235-4146 office
(805) 756-5550 FAX

San Luis Video Publishing
P.O. Box 4604
San Luis Obispo, CA 93493
(805) 545-5426 office
(805) 545-5423 FAX

Natural Organic Farmers Association (NOFA)
RFD #2
Barre, MA 01005
(508) 355-2853

Send a self-addressed stamped, legal-size envelope for a catalog. The catalog lists over 50 video tapes available from NOFA.

Visual Media
University of California
Davis, CA 95616
(916) 757-8980

The Visual Media Center at the University of California, Davis has produced over 1,000 video tapes and slide sets on many topics including sustainable agriculture. A catalog on a 5.25-inch or 8-inch computer disk is available free on request.

NOTES

"About one-fifth of the people are against everything all the time."

Robert F. Kennedy



EDUCATIONAL OPPORTUNITIES

General References Directories of Information International Educational Work Opportunities

Information about a variety of educational opportunities in sustainable agriculture are listed in this section. We chose not to include information about colleges and universities as this information has been compiled by other sources (see the *Directories* subheading below).

General References

Abundant Life Seed Foundation

P.O. Box 772

Port Townsend, WA 98368

Contact: Forest Shomer, Director
(206) 385-5660

Seed Garden Apprenticeships lasting one to four months are available. The focus of the apprenticeship program is organic horticulture.

Aprovecho Institute

80574 Hazelton Road

Cottage Grove, OR 97424

(503) 942-9434

Aprovecho offers a number of workshops and apprenticeships in Oregon and in several Latin American countries. Emphasis is on permaculture and sustainable lifestyles. Some partial work trades are available.

Bear Tribe Medicine Society

Box 9167

Spokane, WA 99209

(509) 326-6561

Educational courses including two-week permaculture design workshops and various gardening apprenticeships are offered during the growing season. Native American traditions play an integral part in the activities.

Earth Cyclers

Route 1, Box 9C

Edwall, WA 99008

(509) 236-2265

Earth Cyclers is a nonprofit corporation located on 80 acres of farm and pasture land 40 miles west of Spokane. It was established in 1972 as a developing ecological demonstration farm utilizing: crop rotations; "keyline" landscaping; multispecies rotational grazing; selective logging; holistic planning; surface mulch tillage; tree planting; and direct local marketing. The farm is operated by a collective of six adults and offers internships which may include room and board.

Medicinal Herb Wildcrafting

Island Herbs

Waldron Island, WA 98297

Three, six, and ten-week apprenticeships are offered March through November.

Oregon Tilth

31615 Fern Road

Philomath, OR 97370

(503) 929-6742

Oregon Tilth is a participant in the national Tilth Placement Service Network, which provides opportunities on certified organic farms.

Washington Tilth Producers' Cooperative

P.O. Box 465

Olympia, WA 98507-0465

(206) 632-5534

Information about internships and apprenticeships throughout the Pacific Northwest may also be found in the monthly Tilth publications of Oregon and Washington.

Cooperative Extension Service Educational Programs

County Extension offices offer many classes, seminars, and workshops throughout the year. For more information contact your local Extension office; see the *Extension* section of this guide for addresses and phone numbers.

Campbell Farm

Box 3106, Route 3

Wapato, WA 98951

(509) 877-6413

This farm/school run by the Presbyterian Church focuses on small-scale, sustainable agriculture, especially for development workers in the Third World.

Center for Urban Horticulture

Elisabeth C. Miller Library

University of Washington, GF-15

Seattle, WA 98816

Many classes and courses are offered at this educational center for horticulture.

The Center for Well Being

82644 Howe Lane

Creswell, OR 97426

Contact: Barbara Hurwich

(503) 895-2953

Study tours and instructional courses are offered.

Friends of the Trees Society

P.O. Box 185

Port Townsend, WA 98368

Contact: Michael Pilarski

(206) 385-9288

Seminars and courses on permaculture and tree subjects, publications on world reforestation, sustainable agriculture, kiwi fruits, and net working service for international travelers.

Home Orchard Society

P.O. Box 776

Clackamas, OR 97015

(503) 630-3392

This organization is designed to educate novice as well as more experienced growers of fruit-bearing trees, shrubs, and plants in the home garden. An annual Fall Fruit Show includes lectures and demonstrations on many aspects of fruit growing while allowing participants to see and taste hundreds of varieties. The spring Scion Exchange allows members to share and exchange cuttings. The HOS Arboretum which is located at Clackamas Community College in Oregon City, has open-house workdays on the first and third Saturdays and second and fourth Sundays during the growing season. A quarterly publication, "Pome News" is mailed to members and contains information on fruit-growing and upcoming HOS workshops and programs. It also contains lists of fruit varieties displayed at the fall shows and of the scions and rootstocks available at the spring Scion Exchange.

Northwoods Nursery

28696 South Cramer Road
Molalla, OR 97038
(503) 651-3737

Annual classes such as grafting, pruning, edible landscaping, and orchard management are offered.

The Agricultural Training Course Group

Camphill Village, Kimberton Hills
P.O. Box 155
Kimberton, PA 19442

This small community manages a 350-acre biodynamic farm. The On-Farm Training Program offers a variety of apprenticeships. One, two, and three year programs are also available.

Alcyone Light Center

Route 1, Box 532
Colestin Road
Hornbrook, CA 96044
Contact: John McComb, Public Relations
(916) 475-3310

Apprenticeships and internships in environmental studies and organic gardening are conducted at this spiritual center.

American Association of Botanical Gardens and Arboreta (AABGA)

P.O. Box 206
Swarthmore, PA 19081

The AABGA compiles a guide listing summer jobs and internships at 88 botanical gardens, arboreta, and other horticultural institutions. There is a \$2 charge for the guide.

Ananda Village

14618 Tyler Foote Road
Nevada City, CA 95959
(916) 292-3656

Ananda Community offers apprenticeships in organic gardening and other rural skills.

Birdsfoot Farm

Natural Farmer Cooperative Apprenticeship Program
Star Route, Box 138
Canton, NY 13617
Contact: Doug Jones
(315) 386-4852

Apprenticeships are offered from March to November at this organic vegetable farm.

California Action Network

P.O. Box 464
Davis, CA 95617
Contact: Andy Faletti
(916) 756-8518

Offers information on networking within organic industry, political action, public education tours, and legislative internships.

California Certified Organic Farmers (CCOF)

State Office
P.O. Box 8136
Santa Cruz, CA 95061
(408) 423-2263

There are ten local chapters and certification offices are located throughout California. Information is provided about working farm stays throughout the state by CCOF's main office.

Camp Joy

131 Camp Joy Road
Boulder Creek, CA 95006
(408) 338-3651

Classes on sustainable agriculture and organic farming are available on this 2.5 acre mixed fruit and vegetable farm. The farm also offers subscription farming which allows people to harvest a crop they have requested Camp Joy to grow. Apprentices work for a six month period and perform a variety of duties including planting, pruning, and harvesting. Room and board are provided.

Carolina Farm Stewardship Association

P.O. Box 511
Pittsboro, NC 27312
(919) 742-4672

Contact: Kate Havel

Sponsors apprenticeships on farms in North Carolina.

Cedar Hollow

P.O. Box 649
Columbia, KY 42728
(502) 378-6588

This community hosts educational courses on permaculture and sustainable agriculture.

Center for Rural Affairs

P.O. Box 405
Walthill, NE 68067
Contact: Chuck Hassebrook
(402) 846-5428

A six month to one year internship position is available which includes experience in analyzing case studies, videotaping on-farm research, and organizing workshops on sustainable agriculture. Contact:

Committee for Sustainable Agriculture

P.O. Box 1300
ColFAX, CA 95713
Contact: Otis Wollan
(916) 346-2777

Offers conferences, farm field days, networking activities, and newsletter.

Common Ground Mini-farm

5798 Ridgewood Road
Willits, CA 95490
(707) 459-0150

An apprenticeship program is offered in the biodynamic/French intensive method of small-scale farming on 20 acres of rural land. Research is oriented towards finding the most sustainable way to grow food crops on the least amount of land possible. Yield, time, and water use are among the factors considered. A one-year commitment is required by apprentices. There is a fee for the program.

Common Ground Organic Supplies

2225 El Camino Real
Palo Alto, CA 94306
(415) 328-6752

Common Ground is a retail garden supply store that offers a reference library and classes on organic, bio-intensive, raised-bed gardening. Classes cover such techniques as double-digging beds, composting, intensive planting, and companion planting cover crops. Fee.

Community Environmental Council

930 Miramonte Drive
Santa Barbara, CA 93109
Contact: Tony Dominski
(805) 963-0538

Internships are available.

**Conservation Gardening and Farming
International Consultancy**

9049 Covina Street
San Diego, CA 92126
(619) 566-8994

Contact: Bargyla Rateaver

Courses, lectures, public demonstrations, publications and free international consultations are available.

Demeter Education Foundation

4214 National Avenue
Burbank, CA 91505
Contact: Maria Linder
(818) 843-5521

Tours, newsletters, advising for farmers, and conferences are offered.

Down Home Project

625 Phillips Street
Missoula, MT 59802
(406) 728-4549

This is a nonprofit educational center which offers talks, workshops, and events which mainly focus on gardening, farming, orcharding, composting, seeds, permaculture, and herbs. They also run Garden City Nursery which sells plants, seeds, and organic gardening supplies.

Ecology Action

5798 Ridgewood Road
Willits, CA 95490
Contact: Robin Jeavons
(707) 459-0150

Long-term apprenticeships are available for organic and bio-intensive farming techniques and research.

Ecology Action of the Mid-Peninsula

2225 El Camino Real
Palo Alto, CA 94306

Classes are offered, a newsletter is published, and a seed company is run by this group who have been teaching bio-intensive gardening which is a combination of French-Intensive and Biodynamic methods.

FarmHands

P.O. Box 1606
New York, NY 10013
Wendy Dubit
(212) 431-6078

The FarmHands apprenticeship program provides placement for farm stays of various types and lengths.

Farallones Institute Rural Center

15290 Coleman Valley Road
Occidental, CA 95465

Farallones has offered numerous workshops, classes, seminars, conferences and programs of study for college credit since its inception in 1974. Some offerings include organic gardening, edible landscape design, whole systems planning, and appropriate technology.

Frank P. Graham Experimental Farm and Training Center

Route 1, Box 95
Wadesboro, NC 28170

A free training program is run for disadvantaged rural people on this 650-acre farm. Sustainable farming methods for small families are emphasized.

Green Gulch Farm

Star Route
Sausalito, CA 94965
Contact: Peter Rudnick
(415) 383-3134

Green Gulch Farm is a Zen temple and training center which offers apprenticeships on the 15-acre organic farm. Room, board, and a modest stipend are offered.

Hawthorne Valley Farm Store

Road 2, Box 225A
Ghent, NY 12075
Contact: Christopher Meier
(518) 672-7500

Apprenticeships are offered on this 400-acre biodynamic farm and include: care of livestock, feeding and milking; vegetable growing; haying and field crops; biodynamic management; and logging/woodlot management. A commitment of at least one year is required.

The Kerr Center for Sustainable Agriculture

P.O. Box 588
Poteau, OK 74953
Contact: Ken Williams, Education Coordinator
(918) 647-9123

The Kerr Center is a private non-profit research ranch and farm with 4,150 acres of pastures, woodlands, and waterways. Educational programs include classes, internships, and seminars. Internship programs run from three months to one year and provide practical ecological farming experience. Interns also contribute to a newsletter and help develop educational materials.

The Land Institute

2440 East Water Well Road
Salina, KS 67401
Contact: Dana Jackson
(913) 823-5376

Internship positions last ten months and begin in February. Applications should be received by December 1 for the following year. Curriculum includes discussions on assigned readings, agricultural research, and maintenance of the facilities and equipment. Topics include plains ecology and genetics related to sustainable agriculture. Applicants should have, or be close to finishing, a Bachelor's degree. A small stipend is provided for living expenses.

Living Resources Company

P.O. Box 76
Citrus Heights, CA 95611-0076
Contact: Steven M. Zien
(916) 726-5377

Courses in ecological horticulture, lectures, and consultations are available.

Maine Organic Farmers & Gardeners Association

P.O. Box 2176, Department H
Augusta, ME 04338
Contact: Jay Adams
(207) 622-3118

The apprenticeship program places individuals on working organic farms throughout Maine.

Malachite School and Small Farm

A.S.R. 21 Pass Creek Road
Gardner, CO 81040
Contact: Alan Mace, Director
(719) 746-2412

Apprenticeships and internships are offered in organic gardening, experimental crop production, beekeeping, kitchen arts, farming with horses, barnyard animals, and wood working. There are also five-week "Farm Introduction Courses" offered two times each summer.

Maple Farm

Old Hardwick Road
Barre, MA 01005
Contact: Peter Wartainen, Jr.
(617) 355-4092

Apprenticeships are offered year-round on this organic homestead which raises roosters, hens, pigs, bees, vegetables, apples, strawberries, blueberries, and raspberries.

Meadowcreek Project

1 Meadowcreek Road
Fox, AR 72051
(501) 363-4500

Interns are provided with both classroom and field experience in sustainable agriculture, alternative energy, and agroforestry.

Michigan Land Trustees

R.R. 2, Box 316
Bangor, MI 49013
Contact: Maynard Kaufman

Workshops and apprenticeships are available in ecological agriculture.

Middle Atlantic Workers on Organic Farms

1601 Lakeside Avenue, Apt. 6
Richmond, VA 23228
Contact: Jeanne Nye
(804) 798-8107

Information is provided about working farm stays for periods from one day to several months in the mid-Atlantic states.

Natural Organic Farmers Association (NOFA)

P.O. Box 454
Ithaca, NY 14851
Contact: Patricia Kane
(607) 648-5557

Information and a list of working farm stays in New York is provided. Additionally, NOFA offers workshops, demonstrations, and winter and summer conferences.

New Alchemy Institute Internship Program
237 Hatchville Road
East Falmouth, MA 02536
(508) 564-6301

Two to six month internships are available throughout the year specializing in areas such as: resource-efficient housing and landscape design; organic market gardening; greenhouse horticulture; composting; permaculture design; and integrated pest management. The internships combine hands-on experience and classroom work and are designed for third-year college students or non-students with equivalent experience.

New England Small Farm Institute
P.O. Box 937
Belchertown, MA 01007
Contact: Kathryn Ruhf
(413) 323-4531

Apprenticeship training is available on organic farms in the New England area.

New England Workers on Organic Farms
c/o New England Small Farm Institute
P.O. Box 937
Belchertown, MA 01007
Contact: Judith Gillan
(413) 323-4531

A list of NOFA-certified farmers with internships available is provided.

New York Workers On Farms
4 Lake Lacoma Drive
Pittsford, NY 14535

Information is available regarding working farm stays in New York.

Ohio Ecological Food and Farm Association
Farm Apprenticeship Program
65 Plymouth Street
Plymouth, OH 44865
(419) 687-7665

Information is provided regarding working farm stays.

Old Mill Farm School of Country Living
P.O. Box 463
Mendocino, CA 95460
Contact: Chuck Hinsch
(707) 937-0244

A nonprofit organization offering an alternative form of education to individuals or families who want to experience farm life. Located on 320 acres surrounded by Jackson State (Redwood) Forest, this working farm and educational center emphasizes alternative energy, biodynamic intensive raised bed gardening, grains, herbs, fruit trees, sheep, goats, fowl, bees, and sustainable forestry practices. Opportunities include short stays, apprenticeships, and internships.

Organic Gardening Apprenticeship Program
Rodale Institute
33 East Minor Street
Emmaus, PA 18049

Information is provided on working farm stays.

Ozark Small Farm Viability Project
HCR 72, Box 35
Parthenon, AR 72666
(501) 446-5783

The project helps sponsor a limited number of apprentices on Ozark farms. Preference is given to area residents or those who wish to farm in the area.

People, Food, and Land Foundation
35751 Oak Springs Drive
Sun Mountain Land Trust
Tollhouse, CA 93667
Contact: George Ballis
(209) 855-3710

Workshops on low-input, low-water, and organic farming are offered. There is also a demonstrational organic farm and a newsletter published.

Permaculture

P.O. Box 16683
Wichita, KS 67216

Contact: Dan Hemenway, Founder

Lectures, workshops, and permaculture design courses are offered. Internship positions are available to people enrolled in the Advanced Permaculture Training programs. The internships provide training in writing for publications, teaching, marketing, fund raising, and other organizational functions.

The Putney School

Elm Lea Farm
Putney, VT 05346

Contact: Julia Chickering
(802) 387-5566

The Summer Program on this 500-acre organic farm offers internships and weekend organic gardening workshops.

Resources for the Future

Office of the Vice President
Box S

1616 P Street NW
Washington, D.C. 20036
(202) 328-5022

Summer interns help staff with projects ranging from technical studies to applied policy analyses.

Rodale Research Center

611 Siegfriedale Road
Kutztown, PA 19530

Contact: Dennis Scholl
(215) 683-6383

Internships are offered in farming systems, new crops, horticulture/entomology, corporate visitor, and computer modeling programs.

Shelburne Farms Resources

Shelburne, VT 05842

Contact: David Barash, Director of Education

Apprenticeships, internships, and volunteer training are provided in their Brown Swiss dairy and cheese plant, bakery, market garden, managed woodlots, portable sawmill, and furniture shop.

Society for Agricultural Training Through Integrated Volunteer Activities

Route 2, Box 242W
Viola, WI 54664

Contact: Steven Freer
(608) 625-2217

The society will provide information on work exchange opportunities in ecological farming throughout the Midwest. Farm stays may range from a weekend to several weeks with food and lodging supplied in return for labor.

Sonnewald Educational Homestead

R.D. #1, Box 1508
Spring Grove, PA 17362

Contact: Grace Lefever
(717) 225-3456

This 60-acre, family-operated organic homestead offers apprenticeships and information on food preparation and nutrition. The homestead also includes a natural food store.

Southern Organic Apprenticeship Program

P.O. Box 54
Utopia, TX 78884

Contact: Mark Hall, Director
(512) 966-3724

A newsletter provides information for apprenticeship positions throughout the Southern United States.

Stoneybrook-Millstone Watershed Association

Route 2, Box 263A

Titus Mill Road
Pennington, NJ 08534

Contact: Helen Atthowe, Farm Director
(609) 737-9183

Apprentices are trained in vegetable, egg, honey, herb, flower, strawberry, and sheep production. Internships are also offered and run from April until October. Practical and classroom experience is provided in such areas as soil analysis and basic soil chemistry, green manures, organic fertilizer preparation and application, planting design, intercropping, companion planting, insect and disease

identification and life cycles, IPM techniques, and basic ecology. Housing is provided on this nature preserve.

Sunny Valley Foundation

4 Sunny Valley Lane
New Milford, CT 06776
Contact: Steven Kafka
(203) 355-3715

Internships are offered in research and farm activities in conjunction with a small-scale dairy production system. Housing and a small stipend is also provided.

Sunshower

48548 - 60th Avenue
Lawrence, MI 49064
Contact: Paul Schultz, Owner
(616) 674-3103

Apprenticeships at this 80-acre fruit and vegetable farm are offered.

Tillers Small Farm Program

7000 North Westridge Avenue
Kalamazoo, MI 49007
(616) 381-0727

Ten-week summer and fall internships are offered through the Tillers Small Farm Program. Emphasis is on farming with animal power, including oxen and draft horses.

Windstar Foundation

P.O. Box 286
Snowmass, CO 91654
Contact: Mary Trahan
(303) 927-4778

Summer internships, apprenticeships, and workshops are offered. Practical experience is complemented by readings, lectures, and discussions on all aspects of sustainable agriculture.

Directories of Information

Alternative Farming Systems Information Center

National Agricultural Library, Room 111
10301 Baltimore Blvd.
Beltsville, MD 20705
(301) 344-3704

The AFSIC offers two directories of information on sustainable agriculture opportunities: *Educational and Training Opportunities in Sustainable Agriculture* (April 1991) and *List of Organizations Concerned with Organic Farming, Gardening, and Horticulture* (September 1989) are available free; send a self-addressed adhesive label to the address listed above.

Appropriate Technology Transfer for Rural Areas (ATTRA)

P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

ATTRA has four resource lists to aid networking in sustainable agriculture. For copies, contact ATTRA and request the following titles: 1. Internships, Apprenticeships, and Curricula in Sustainable Agriculture, 2. Sustainable Agriculture Organizations and Publications, 3. University Programs and Contacts in Sustainable Agriculture, 4. Videos, Slides, and Tapes on Sustainable Agriculture. There is no charge for these publications.

Bio-Dynamic Farming and Gardening Association

P.O. Box 550
Kimberton, PA 19442
(215) 327-2420

The *Bio-Dynamic Magazine*, a quarterly magazine, regularly prints information regarding educational opportunities in Bio-Dynamic farming.

International Educational and Work Opportunities

Australia

Willing Workers on Organic Farms
(WWOOF)
7 Duncan Avenue
Boronia, Victoria 3155

Australia

WWOOF
Mt. Murrindal Co-op
Buchan, Victoria 3885
c/o Lionel Pollard

Australia

WWOOF
P.O. Box 789
Fremantle, 6160, WA

Belgium

WEEBIO
Chaupregeid 64
B-4081, Cherron
c/o Dellisse Adophe

Canada

Willing Workers on Organic Farms - WWOOF
Maritimes
Paradise Lake Farm RR
Bridgetown, Nova Scotia B05 100
c/o J. Vanden Henvez

Denmark

VHH
Garsdalsveg 30
8800 Viborg
c/o Inna Busck-Petersen

England

WWOOF
19 Bradford Road
Lewes, E. Sussex BN7 1RB
The England office also publishes and sells
the "Directory of Organizations & Training in
the U.K. Organic Movement - and other
Relevant Bodies."

France

Nature Et Progres, Liste Des Stages
55 Rue de Vaugirord F-75006
Paris

Holland

De Kleine Aarde Munsel 17
Postbus 151
5280 AD Boxtel
c/o G. van den Berg
The Netherlands

Hungary

1056 Budapest, Molnar u.9.
c/o F. Fruhwald, Magyar Biokertmuvelok
Orszagos Kluba, Belvarosi Ifjusagi Haz

Hygenic Community Network

1231-A Oxford Street
Berkeley, CA 94709
Has information on listings in the U.S.,
Canada, Central and South America.

International Farm Placement Service

St. John's College
Annapolis, MD 21404
c/o Bruce Dempster
This organization helps to arrange work-
stays among members of WWOOF's in
England, Australia, and the U.S. Information is
also available on how to establish a regional
apprenticeship program.

Ireland

Carrigleagh, Shanballymore
Nr. Mallow, County Cork
c/o Gill Wenlock

Ireland

WWOOF EIRE
Ballymore, Tuambraney, Co. Clare
c/o Annie Sampson

Israel

12 Devora Street
Beer Shera
c/o J. Bar-Or

Japan
Kibbutz Akan
Shin Shizen Juku
Nakasetsuri, Akan Gun
Hokkaido 085-12
c/o Mose Matsuba

New Zealand
WWOOF
188 Collingwood Street
Nelson
c/o Tony West

Norway
Norwegian Alternative Farming Society
Alternativ Jordbruk
9, 5000 Bergen
c/o Herman Fossgt

Spain
INTEGRAL
Paseo Maragall 371
Barcelona 32

United Kingdom
Inter-WWOOF
Waungron, Cefn-y-Pant
Login, Whitland, Dyfed
Wales SA34 OTS
c/o Jean and John Myers and Jinny Thomas

West Germany
WWOOF
Stittinger Str. 3
D-6301 Pohleim

NOTES

"Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education."

Mark Twain



PEST MANAGEMENT

General References
Vegetation Management
Plant Disease Management
Insect Management
Nematode Management

The *Pest Management* section of this guide is divided into five sections: General References, Vegetation, Plant Disease, Insect, and Nematode Management. The first section lists sources of pest management strategies with a combination of disease, weed, insect or nematode management approaches. Each of the next four sections also contains a "general references" section that features broad-based information sources for the specified type of pests, followed by specific types of pest management approaches. The Table of Contents provides a complete description of the contents of each section.

General References

Biological Control by Natural Enemies

Paul DeBach 1974

DeBach traces the historical background of biological control and examines some well-known examples in the USA. Discusses on how some pesticides disrupt natural enemy populations is included.

Publisher:

Cambridge University Press
32 East 57th Street
New York, NY 10022
(800) 872-7423

Biometeorology in Integrated Pest Management - Conference Proceedings

J.L. Hatfield and I.J. Thomason, Editors
1982

The proceedings of a 1982 conference contain contributions from entomologists, plant pathologists, and weed scientists. One of the goals of this conference was to introduce the topic of microclimates in agricultural systems in order to describe what is known about the environment in which pests live. Chapters are included on the management of plant pathogens, radiation quality and plant diseases, and plant canopy modification impacts on plant disease incidence. \$81.

Published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 92101
(800) 321-5068

Common-Sense Pest Control

William Olkowski, Sheila Daar, and
Helga Olkowski 1991

The book offers information on integrated pest management (IPM) in a variety of situations including indoor plantings, non-horticultural pests, and landscape IPM. Also offered is some basic taxonomy and ecology information, direct vs. indirect pest suppression of pests, and information about various pesticides, including organic and inorganic options. \$39.95.

Published by:

Tauton Press
63 South Main Street, Box 5506
Newtown, CT 06740-5506

Encyclopedia of Natural Insect Control and Disease Control

Roger Yepson, Editor 1984

A reference book which details management of many insect and disease problems on a large variety of horticultural crops, flowers, trees and lawns with low chemical input. Tables on resistant varieties are included. \$24.95.

Published by:

Rodale Press Inc.
33 Minor Street
Emmaus, PA 18098
(215) 967-5171

Fruit, Berry, and Nut Inventory

Kent Whealy, Editor 1989

A complete listing of mail-order nursery catalogs which sell fruit, nut, and berry varieties. A good reference for locating varieties which are adapted for a specific climate or are resistant to specific diseases or pests. \$19.

Available from:

Seed Saver Publishers
Route 3, Box 239
Decorah, IA 52101
(319) 382-5990

Gardening at a Glance: The Organic Gardener's Handbook on Vegetables, Fruits, Nuts, and Herbs

Tanya Denckla 1991

The handbook consists of listings of vegetables, fruits, and herbs including important cultivars, cultural recommendations, significant pests and diseases, harvesting instructions, storage requirements, and miscellaneous notes. The chapter on organic remedies provides an up-to-date list of non-chemical methods of control. Comprehensive charts showing characteristics of fruit tree rootstocks are also included. \$22.95.

Published by:

Wooden Angel Publishing
P.O. Box 869
Franklin, WV 26807
(304) 358-2046

Insect-Plant Interactions

E.A. Bernays, Editor 1989

The whole spectrum of research including molecular and chemical aspects, and behavior, physiology, and ecology are discussed in this text book. \$65.

Published by:

CRC Press
2000 Corporate Blvd., N.W.
Boca Raton, FL 33431
(800) 272-7737

Knott's Handbook for Vegetable Growers - Third Edition

O.A. Lorenz and D.N. Maynard 1988

A comprehensive reference book providing information on the production, storage, and marketing of vegetables. Information on integrated pest management, soil solarization, row covers, polyethylene mulches is also included. \$37.50.

Publisher:

John Wiley & Sons Inc.
605 Third Avenue
New York, NY 10158-0012
(800) 879-4539

Multiple Cropping

American Society of Agronomy 1976

Reviews multiple cropping and intercropping patterns in various regions of the world. Papers include information on soil fertility management, radiation and microclimate, adapted varieties, machinery adaptations, integrated pest management, and strip intercropping for wind protection. \$12.

Available from:

American Society of Agronomy
677 South Segoe Road
Madison, WI 53711-1086
(608) 273-8080

Multiple Cropping Systems

Charles A. Francis, Editor 1986

Reviews multiple cropping from a world-wide perspective. Includes discussions on ecological, physical, and agronomic principles; research methods; management practices; economic and socio-cultural considerations; specific crops and future research objectives. \$44.95.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

The Orchard Almanac, A Spraysaver Guide

Steve Page and Joe Smillie 1986

Alternative management techniques are presented in an almanac format allowing growers to easily determine what should be done at a given time of year. \$10.95.

Available from:

Spraysaver Publishers
RR 1, Box 945
Morrill, ME 04952
(207) 342-5471

Pests of the Garden and Small Farm: A Grower's Guide to Using Less Pesticide

Mary Louise Flint 1990

A good general reference book which includes guidelines on the identification, biology, and management of almost 100 insects, mites, diseases, nematodes, and weeds. The introductory section on pest management also includes useful information on solarization, row covers, pest barriers, and intercropping. While the title mentions the book is for "gardens and small farms" the information provided offers much for larger-scale operations. \$30.

Postharvest Technology of Horticultural Crops - Second edition

Adel A. Kader, Editor 1992

A guide to the most effective measures to protect produce from injury and spoilage on the way to market. The book focuses on most food crops and ornamentals, and describes specific pests, storage techniques, and methods of quick-cooling produce to prevent damage. The book is an excellent resource. Publication #3311 sells for \$45.

Both available from:

Publications
University of California
Agriculture and Natural Resources
6701 San Pablo Avenue
Oakland, CA 94608-1239
(510) 642-2431

Rodale's Garden Insect, Disease, and Weed Identification Guide

Miranda Smith and Anna Carr 1988

Includes descriptions and illustrations of many different insects, diseases, weeds, and their resulting damage. \$16.95.

Published by:

Rodale Press, Inc.
33 East Minor Street
Emmaus, PA 18092
(800) 527-8200

Small Fruit Pests: Biology, Diagnosis, and Management

Washington State University 1991

A 20-page booklet with excellent color illustrations of pests and damage symptoms. Publication number WAEB 1388 sells for \$3.

Available from:

Washington State University publications department. See the *University Resources* section of this guide for ordering information.

Small Fruit Crop Management

G.J. Galletta and D.G. Himelrick, Editors
1990

Presents up-to-date recommendations for growing strawberries, raspberries, blackberries, currants and gooseberries, blueberries, cranberries, grapes, kiwi fruits, elderberries, highbush cranberries, and serviceberries. Included are current cultivars, training techniques, and pest and disease management techniques. \$50.

Published by:

Prentice Hall
15 Columbus Circle
New York, NY 10023
(800) 223-2348

Tree Fruit Production

B.J.E. Teskey and J.S. Shoemaker 1972

Presents growing techniques for the principal deciduous tree fruit crops including apples, pears, peaches, cherries, plums, apricots, and nectarines. Propagation methods, cultivars, site selection, orchard establishment, orchard floor management, pruning, pest control, pollination, fertilization, thinning, harvesting, packing, storage, and shipping are discussed. A separate chapter discusses dwarf pome fruits, emphasizing some of the unique problems and cultural practices relevant to dwarf trees. \$37.95.

Published by:

AVI Publishing Company
115 Fifth Avenue
New York, NY 1003-1004
(212) 254-3232

Western Fruits, Berries, and Nuts

Lance Walheim and Robert L. Stebbins
1981

Includes information on pruning, fertilization, cultural and climatic requirements of trees. Also contains very extensive and thorough varietal descriptions such as growing zones, maturity dates, and disease resistance. A section on tropical and unusual species is included. \$14.95.

Published by:

Price Stern Sloan, Inc.
360 North La Cienega Blvd.
Los Angeles, CA 90048
(800) 421-0892

Extension Publications

See the *University Resources* section of this guide for ordering information.

Oregon State University

Grape Cultivars For Your Home Garden
EC 1309

Growing Hazelnuts in Oregon EC 1219

Growing Rhubarb in Oregon EC 797

Growing Tree Fruits and Nuts in the Home Orchard EC 819

Oregon Potato Variety Trials CI 678

Raspberry Cultivars For Oregon EC 1310

Selecting Peach Varieties for the Willamette Valley EC 1181

Sweet Cherry Varieties and Pollenizers for Oregon FS 57

Using Leaf Analysis to Diagnose Nutrient Disorders in Tree Fruits and Small Fruits
FS 118

Washington State University

- Apple Cultivars for Puget Sound** EB 1436 \$8
- Cranberry Insect and Disease Control Program** EB 0845 \$1.50
- Evaluation of Selected Vineyard Sites in Washington State** XB 0908 Free
- Golden Delicious Apples for High Quality and Maximum Storage Life** EM 3496 25¢
- Granny Smith: An Important Apple for the Pacific Northwest** EB 0814 25¢
- High Quality Red Delicious Apples for Late Season Marketing** EM 3033 50¢
- Organic Gardening** EB 0648 75¢
- Pear Production** AH 0526 25¢
- Rootstocks for Sweet Cherries** EB 1150 25¢
- Small Fruits and Berries: Insect and Disease Control for Home Gardens** EB 1015 25¢
- Small Fruit Pests: Biology, Diagnosis and Management** EB 1388 \$3
- Sweet Corn Varieties for Western Washington** EB 0908 25¢
- Survey of Literature on Red Strains of 'Delicious'** EB 1515 50¢
- Sweet Cherry Varieties for Western Washington** EB 0882 25¢
- Tree Fruit Cultivars for Western Washington Homes and Orchards** EB 0937 50¢
- Washington Asparagus Production Guide** EB 0997 50¢
- Why Sweet Cherries Die** EB 0668 \$2.75

Pacific Northwest Extension Publications

- Choosing Pear Rootstocks for the Pacific Northwest** PNW 341 25¢
- Commercial Red Raspberry Production** PNW 176 \$1
- Cranberry Production in the Pacific Northwest** PNW 247 \$7.50
- Gala: A New Early-Maturing Apple Variety** PNW 319 25¢
- Growing Walnuts in the Pacific Northwest** PNW 235 50¢
- Highbush Blueberry Production** PNW 125 \$1
- Nutrient Disorders in Tree Fruits** PNW 121 25¢
- Rootstocks for Apple in the Pacific Northwest** PNW 208 25¢

University of California Publications

- Cling Peach Production** 1968 No. 2455 Various methods of cultivation, fertilization, cover crop use, and propping. 50¢
- Commercial Apple Growing in California** 1983 No. 2456 How to establish and manage an apple orchard: planning, varieties and rootstocks, pruning, thinning, irrigation, nutrition, pests and diseases, and postharvest handling. \$2
- Controlling Insects, Diseases, and Related Problems in the Home Vegetable Garden** 1979 No. 21086 \$1.50
- Grape Rootstock Varieties** 1980 No. 2780 \$2
- Greenhouse Cucumber Production** 1984 No. 2775 \$1.25

Growing Boysenberries and Olallie Blackberries 1982 No. 2441 Aspects of commercial production: establishment costs, disease and insect control, and harvesting problems. \$1.25

Growing Shipping Peaches and Nectarines in California 1983 No. 2851 Varieties, site preparation, cultural practices, pest and disease control, and postharvest handling. \$2

Growing Zucchini and Other Summer Squashes 1985 No. 2641 Varieties, climatic needs, pest control, pollination, and harvest. \$1

Insect and Disease Management in the Home Orchard 1981 No. 21262 Identification, damage, and control in deciduous fruit and nut trees. \$2.25

Integrated Pest Management for Cole Crops and Lettuce 1985 No. 3307 Covers lettuce, broccoli, cabbage, brussel sprouts, and cauliflower. Exceptional sections on diseases and physiological disorders. \$17

Integrated Pest Management for Potatoes in the Western United States 1986 No. 3316 Guides diagnosis and treatment of many pests and disorders. Exceptional sections on diseases and physiological disorders. \$17

Integrated Pest Management for Tomatoes 1990 No. 3274 \$17

Integrated Pest Management for Walnuts 1987 No. 3270 Identification, life cycles, and control of vertebrate, insect, and other arthropod, disease, nematode, and weed pests. \$17

Peaches, Plums, and Nectarines: Growing and Handling for Fresh Market 1989 No. 3331 Practical information is offered on production from orchard selection site to distribution. \$42.50

Pest and Disease Control Guide for Vegetable Seed Crops 1976 No. 2798 \$1

Soil Solarization: A Nonchemical Method for Controlling Diseases and Pests 1984 No. 21377 \$1

Strawberry Production in California 1989 No. 2959 Describes growth and management requirements. \$1.75

Vegetable Varieties for Home Gardeners 1988 No. 21444 Includes specific disease resistant varieties along with tips on their growth habits. \$1

Walnut Orchard Management 1985 No. 21410 Offers practical considerations of culture, disease and pest management, harvesting, and handling. \$21.50

"Farming always has the greatest capacity for exposing one's ignorance."

Fred Kirschenmann

Vegetation Management

General References

Cover Crops, Green Manures,
and Living Mulches

Herbicide Resistance in Weeds

Allelopathy

Biological Control of Weeds

Animals

Flaming

Non-Living Mulches

An integrated management system considers all options available for vegetation management and weed control including mechanical, cultural, biological, and chemical methods. The following sections include information on the above, excluding chemical options since there is extensive information already available on this subject. Another component which enhances an integrated weed management system is proper identification; resources on weed identification are listed in the *General References* section below.

General References

Biological Methods of Weed Control

K. Brunetti, D.M. Maddox, and
S.S. Rosenthal 1984

Monograph No. 1, from the California
Weed Conference held in 1984.

Available from:

California Weed Conference
6650 Belleau Wood Lane, Suite 209
Sacramento, CA 95822

Common Weeds of the United States

USDA 1970

A useful, hands-on identification guide and source of information on weeds of the continental United States. Included are drawings of plant flowers, fruit, seeds, and capsules. Additional information is provided on botany, habitat, area, peculiarities, and origin. \$8.95.

Publisher:

Dover Publications, Inc.
180 Varick Street
New York, NY 10014
(800) 223-3130

Growers Weed Management Guide

H.M. Kempen 1989

A comprehensive, integrated weed management guide for major irrigated crops such as field crops, vegetables, orchards, grapes and non-crop sites. There are special sections which cover weed management, herbicide carryover, effects of soil and irrigation, and herbicide safety usage. \$25.

Publisher:

Thomson Publications
P.O. Box 9335
Fresno, CA 93791
(209) 435-2163

Northwest Weeds

R.J. Taylor 1990

The most common weeds of the northwestern U.S. and Canada are included in this publication. Each weed is represented by a full-color photograph and description which includes origin, range, aggressiveness, and edibility. \$12.95.

Publisher:

Mountain Press Publishing Company
P.O. Box 2399
Missoula, MT 59806
(800) 234-2054

**Principles of Plant and Animal Pest Control:
Weed Control**

Volume 2 1968

Available from:

National Academy of Sciences
2101 Constitution Avenue NW
Washington, D.C. 20418
(202) 334-3180

Principles of Weed Control in California

Edward Kurtz, Editor 1985

A comprehensive collection of weed management strategies including cultural, mechanical, biological, and chemical methods. Weed control in agronomic crops, horticultural crops, ornamentals, turfgrass, forests, rangelands, Christmas trees, non-cropland, and aquatic areas are discussed. \$36.95.

Publisher:

Thomson Publications
P.O. Box 9335
Fresno, CA 93791
(209) 435-2163

**Survey of Weed Problems and Management
Technologies in Organic Agriculture**

Edwin McLeod and Sean Swezey

Available from:

Organic Agriculture Research Institute
P.O. Box 475
Graton, CA 95444

Weed Control

A.S. Crafts 1975

Available from:

University of California Press
2120 Berkeley Way
Berkeley, CA 94720
(800) 226-6657

Weeds: Control Without Poisons

Charles Walter, Jr. 1991

Information regarding alternatives to chemical weed control and descriptions of weeds are included. Other topics include using weeds as indicators of soil health, fertility, and organic matter content. \$17 plus \$2 shipping.

Available from:

In Good Tilth Bookstore
Oregon Tilth
31615 Fern Road
Philomath, OR 97370
(503) 929-6742 office
(503) 929-6743 FAX

Weed-Crop Competition: A Review

R.L. Zimdahl 1980

Discusses the different aspects of light, water, and nutrient competition; effects of weed densities; influences of plant arrangement in the community; and influence of seeding rate, tillage, and crop sequence.

For more information:

IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331-3904
(503) 737-3541

**Weed-Crop Ecology: Principles in Weed
Management**

R.J. Aldrich 1984

The ecological principles of weed management are outlined. Information on weed biology and ecology with an emphasis on prevention and use of "threshold values" for establishing weed suppression goals is included. \$46.

Publisher:

Breton Publishers
North Scituate, MA

Weeds of the West

Western Society of Weed Science 1991

More than 900 color photographs of more than 350 species of weeds for the twelve Western states (Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) are included in this book. Early growth stages, mature plants, habitat, and important identification features are described. The book has a 6-by-9 inch format with a waterproof, paperback cover. \$19.50. A computer program designed to assist readers identify species illustrated in *Weeds of the West* is available; see the *Databases and Computer Software* section of this guide for more information.

Available from:

Local bookstores and the WSU Bulletin Office, see the *University Resources* section for ordering information

A Guide to Selected Weeds of Oregon

La Rea J. Dennis, R.B. Hawkes, and T.D. Whitson 1985

A loose-leaf manual designed to be put in a binder, of color photographs and text describing 96 different weeds that present problems to agriculture and other activities. Price (includes shipping): \$15 in Oregon, \$16 out-of-state.

A Guide to Selected Weeds of Oregon - Supplement I

L. Burrill, La Rea J. Dennis, and R.B. Hawkes 1989

A loose-leaf supplement to *A Guide to Selected Weeds of Oregon*. Contains color photographs of 48 additional weeds posing a threat to Oregon's agriculture and economy. Price (includes shipping): \$10 in Oregon; \$11 for out-of-state orders.

Biological Control of Tansy Ragwort

Oregon Department of Agriculture 1977

A short bulletin describing biological control measures to control tansy ragwort. Weed Control Bulletin No. 1, 1977.

All three available from:

Oregon Department of Agriculture
Weed Control
635 Capitol Street NE
Salem, OR 97310

Integrated Plant Protection Center (IPPC) Papers

A collection of original papers, presentations, and reprints related to pest and pesticide management, and international agricultural development are available. Additions to the collection are on-going. Single copies are available free, send a self-addressed stamped envelope; for quantity orders contact IPPC regarding cost.

No. 1-B-1976 **Approaches to weed control in cropping systems** D.L. Plucknett, et. al. Reprinted from: 1976 Cropping Systems Symposium of the International Rice Research Institute, Los Banos, Laguna, Philippines

No. 8-B-1979 **Aquatic plants and their control** R.C. Hiltibran. Reprinted from: Weeds Today, Vol. 10, No. 1, Winter 1979

No. 11-B-1980 **The next revolution in weed control** R.U. Whedon. Reprinted from: Agrichemical Age, July-August, 1976

No. 12-B-1980 **Controlling scrubweeds with goats** G.J. Batten. Reprinted from: NZ Journal of Agriculture, October 1979

No. 15-B-1981 **Perspectives and priorities in weed research and control** S.L. Everist. Reprinted from: Australian Weeds, Vol. 1, No. 1

No. 16-B-1982 **Weed control in integrated crop protection** W.H. Vanden Born. Reprinted from: *Agriculture and Forestry Bulletin*, Vol. 5, No. 3, 1982

No. 19-B-1980 **The biology, control, and utilization of aquatic weeds** L. Holm and R. Yeo. Reprinted from: *Weeds Today*, various issues, 1980-81

Technical Assistance Bulletin #1 **Simple Device Helps Small Farmers Improve Weed Control and Gain More Crops**. A U.S. Agency for International Development (USAID) supported project has developed a simple device consisting of a shield attached to the nozzle of a knapsack sprayer for directing sprays in small areas. Spray shields improve cost efficiency, effectiveness, and safety. The bulletin describes how to make the spray shield.

Available from:

IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331
(503) 737-3541

Weed Management in Agroecosystems

M.A. Altieri and M. Liebman 1988

Published by:

CRC Press
2000 Corporate Blvd., N.W.
Boca Raton, FL 33431
(800) 272-7737

Extension Publications

See the *University Resources* section of this guide for ordering information.

Oregon State University Extension Publications:

Bur Chervil FS 30

Catchweed FS 31

Cattails FS 32

Cocklebur FS 35

Corn Cockle FS 36

Matchweed FS 43

Narrow-leaved Milkweed FS 44

Purple Filaree FS 45

Purple Mustard FS 46

Scouring Rush FS 47

Shoestring Weed FS 48

Wild Oats FS 51

Canada Thistle FS 205

Corn Gromwell FS 206

Transfer of Cinnabar Moth Larvae FS 252

Weed Control in Alfalfa FS 267

Complete Set of Weed Fact Sheets
FS WEEDS

Biological Control of Insects and Weeds in Oregon TB 90

Distribution, Growth Habits, and Control of German Velvetgrass in Western Oregon TB 107

Ecology and Plant Communities of the Riparian Area Associated with Catherine Creek in Northeastern Oregon TB 147

Washington State University Extension Publications:

Dodder and its Control F 2267 25¢

Canada Thistle Control EB 0780 25¢

Control of Aquatic Weeds EB 0928 75¢

Quackgrass Control in Croplands EB 1060 25¢

Weed Control in Cranberry Bogs EB 1098 25¢

Yellow Nutsedge Control, Central Irrigated Washington Weed Control Guide EB 1488
Free

Control of Volunteer Crop Plants EB 1523
25¢

Field Bindweed EB 15402 \$1.25

Weed Control in Cranberries EM 4267 25¢

**Western Washington Weed Control Guide:
Blueberry Plantings** EM 4337 25¢

Pacific Northwest Extension Publications:

Death Weed or Poverty Weed PNW 102
Free

Scotch Broom PNW 103 Free

Death Camas PNW 104 Free

Horsetail PNW 105 Free

Poison Oak and Ivy PNW 108 25¢

Water Hemlock PNW 109 25¢

Field Bindweed (Morning Glory) PNW 115
Free

Hoary Cress-White Top PNW 116 Free

Common and False Dandelion PNW 117
25¢

Puncturevine PNW 133 Free

Longspine Sandbur PNW 134 Free

Yellow Toadflax and Dalmation Toadflax
PNW 135 25¢

Tansy Ragwort PNW 175 Free

**Pasture Management for Control of Tansy
Ragwort** PNW 210 Free

**Aquatic Vegetation Management and
Control** PNW 224 50¢

Jointed Goatgrass PNW 256 50¢

**Weed Control Guide for the Conservation
Reserve Program** PNW 329 50¢

Lepyrodictis PNW 349 75¢

Purple Starthistle and Iberian Starthistle
PNW 350 Free

**Nightshade Biology and Control in the
Pacific Northwest** PNW 352 Free

Longspine Sandbur PNW 353 50¢

Pacific Northwest Weed Control Handbook
(revised annually) WEED \$15

University of California Publications:

Container Nursery Weed Control 1979
Publication 21059. \$1

Growers Weed Identification Handbook
1990 Publication 4030 \$65

Bibliographies

Refer to the Alternative Farming Systems
Information Center of the National Agricultural
Library in the *Organizations* Section of
this guide for ordering information.

Quick Bibliography Series

Cultural and Mechanical Weed Control
November 1990 QB 90-40

Double Cropping and Interplanting August
1989 QB 89-97

Periodicals

The following periodicals frequently print
articles on weed management techniques and
strategies. See the *Periodicals* section of this
guide or your local library for more
information.

Agronomy Journal
American Journal of Botany
Annual Review of Phytopathology
Botanical Gazette
Crop Protection
Canadian Journal of Botany
Journal of the American Society of Agronomy
Journal of Natural Products
The IPM Practitioner
Phytopathology
Plant Physiology
Weeds
Weed Science
Weeds Science Society of America

Video Tapes

See the *Video Tapes and Other Media Offerings* section of this guide for ordering information.

Noxious Weeds of Oregon: A Growing Concern

Washington State Resources

Washington State Noxious Weed Control Board

The Board serves in an advisory capacity to the Department of Agriculture on matters concerning noxious weed control in the state of Washington. In Washington, noxious weed control is a shared responsibility among the Noxious Weed Control Board, the Washington State Department of Agriculture, 41 county noxious weed control boards and weed districts, and the landowner. One of the major responsibilities is to compile and publish a State Noxious Weed List at least every year. The weeds on this list are classed into A, B, and C categories depending on the seriousness of the threat they pose to the area.

Information and services available from the Washington State Weed Board include:

- ❖ Weed identification expertise
- ❖ Field demonstrations and public seminars
- ❖ Individual weed control consultation
- ❖ Integrated pest management information
- ❖ Free weed identification, control, and related information
- ❖ Posters and displays for public use
- ❖ Extensive weed herbarium
- ❖ Public Education Program

For more information contact:

Washington State Noxious Weed
Control Board

1313 West Meeker Street, Suite 111
Kent, WA 98032

Executive Secretary: Catherine Hovanic
(206) 872-6480

Adopt-A-Lake Rehabilitation Program

The Adopt-A-Lake program started in 1985 when the Fly Fishing Club, working in conjunction with the Weed Board, Okanogen County, and the Washington State Department of Wildlife "adopted" Round, Ell, and Long Lakes. These areas were initially treated with herbicides purchased by the Fly Fishing Club for the control of diffuse knapweed. Since then, this group has annually raised money and "adopted" additional areas which include the areas around Aeneas, Chopaka, Green, and Conconully Lakes. Long-range management plans strive towards the rehabilitation of these areas which includes practices such as the application of a nitrogen-sulfur based fertilizer, hand pulling, seeding plants, and spot treatment herbicide applications. The benefits from this program include the cooperative work efforts from county, state, and private citizens, as well as the long-term benefits derived by people visiting these areas and future generations.

Biological Control Program

Biological control has been practiced since 1974 in Okanogen County with the release of the knapweed seed fly, *Urophora affinis*. Since that time there have been other host-specific bioagents released for control of diffuse and spotted Knapweed, goatweed, musk thistle, Russian knapweed, and puncturevine. The objective of this project is to continue introduction of biocontrol agents over larger geographic areas with emphasis on higher elevation and more inaccessible areas. Specific areas will also be established for the colonization of biological agents for future distribution and may also be used for educational and training facilities.

Cover Crops, Green Manures and Living Mulches

General References

An Assessment of Current Activities on the Use of Legumes for Soil Improvement in World Cropping Systems

Marianne Sarrantonio 1989

Major findings of an assessment undertaken to identify key programs and technologies worldwide that utilize legumes in order to improve physical, chemical, and biological properties of the soil are presented.

Available from:

Rodale Research Center & Institute
222 Main Street
Emmaus, PA 18099-0015
(215) 967-5171

Basics of Green Manuring and Crop Rotation Bulletin # 4 Eric Sideman

Available from:

Maine Organic Farmers and Gardeners
Association
P.O. Box 2176
Augusta, ME 04330

Crop Residue Management for Conservation

Soil and Water Conservation Society
(SWCS) 1992

Discusses crop residue management technology. Information on the conservation compliance implementation challenges included in the 1985 and 1990 Farm Bills is presented. 49 pages. \$10 postpaid.

Available from:

SWCS
7515 NE Ankeny Road
Ankeny, IA 50021-9764
(800) 843-7645

The Clover Project

The project began in 1979 to gather information on natural farming techniques for the Northwest. Six reports were originally published in the *Tilth* journal, but reprints can be obtained from Washington Tilth. Information in the articles includes: the role of grass and clover in agriculture; Masanobu Fukuoka's visit to North America; seed pelleting; intercropping grains and clover; and natural farming tools and techniques. \$10 (plus tax for Washington residents).

Available from:

Washington Tilth
P.O. Box 10813
Bainbridge Island, WA 98110
(206) 842-5612

Cover Crops for California Agriculture

P.R. Miller, W.L. Graves, W.A. Williams,
and B.A. Madson 1989

Contains topics on using cover crops for soil improvement, selecting cover crops, growing and working in cover crops, biological interactions, and an appendix on cover crop management systems. \$3.50 (publication #21471). Also available in Spanish (Agronomy Progress Report #219).

English version available from:

ANR Publications
University of California
6701 San Pablo Avenue
Oakland, CA 94608-1238
(510) 642-1239

Spanish version available from:

Agronomy and Range Science
Extension
University of California
Davis, CA 95616

Cover Crop Guide

Bob Hofstetter January 1988

Information on use of grasses, legumes, and legume-grass mixes as cover crops.

Available from:

The New Farm
Box 14
Emmaus, PA 18099-0014
(215) 967-5171

Cover Crop Hotline

Subscription to the Hotline includes personal telephone consulting with staff agronomists, research reports, the quarterly newsletter, a copy of the cover crop guide, and access to a 24-hour hotline. Membership is \$150 per year.

For more information:

Cover Crop Hotline
The New Farm
222 Main Street
Emmaus, PA 18098

Feed the Soil

Edwin McLeod 1982

Describes many cover crop species both common and uncommon. Also discusses subjects which would affect the choice and cultivation of a cover crop such as moisture relations, soil nutrient composition, and pests. A non-technical coverage of green manure crops for farmers and gardeners is included. \$12.95.

Available from:

Organic Agriculture Research Institute
P.O. Box 475
Graton, CA 95444
(707) 823-5106

Food and Feed Crops of the United States

J.R. Magness, G.M. Markle, and
C.C. Compton 1971

Contains a list and description of legume forage and pasture crops.

Available from:

Communications Center
New Jersey Agricultural Experiment
Station
College of Agriculture and
Environmental Science
Rutgers University
New Brunswick, NJ 08903

Forage Legume Conference, Proceedings

R.L. Dalrymple, Editor

Contains a chapter on the use and adaptation of legume varieties.

For more information contact:

Agricultural Division
Noble Foundation
Route 1
Ardmore, OK 73401

A Gardener's Guide to Fava Beans

Denise Ackert 1989

A comprehensive pamphlet which describes the history, types of favas, cultivation, sowing, harvesting, saving of seed, storage, seed selection, and nutritional and culinary information. Available for \$2. (Free with purchase of 2 or more pounds of AproSelect fava beans).

Available from:

Aprovecho Institute
80574 Hazelton Road
Cottage Grove, OR 97424
(503) 942-9434

Green Manuring: Principles and Practice

Otto Schmidt and Ruedi Klay 1981

The publication highlights reports on the benefits and uses of cover crops in Switzerland, but many of the cultural practices are applicable to farming systems in the United States. Includes growth characteristics, seeding rates, yields, and nutrient contents of both legume and non-legume green manures. \$8.50.

Available from:

Woods End Agricultural Institute
Old Rome Road, Box 4050
Mt. Vernon, ME 04984
(207) 293-2457

Green Manures

Lawrence Woodward and Pat Burge,
Editors 1982

Includes information on under-sowing green manures in corn and specialized uses of green manures in vegetable plantings and greenhouses. Lists and describes varieties and uses of green manures in Great Britain.

For more information contact:

Elm Farm Research Center
Hamstead Marshall
Near Newbury
Berkshire RG15 0488 582927

Green Manures and Cover Crops

Provides general information on green manures and cover crops, legumes and nitrogen, types of green manures, and sources of information. No charge.

Available from:

Appropriate Technology Transfer for
Rural Areas
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

Guide to Sustainable Agriculture in the Northern Rockies and Plains

Farmers in the inland Northwest who have experience with using green manure crops are listed in this guide.

Available from:

Alternative Energy Resources
Organization
44 North Last Chance Gulch
Helena, MT 59601
(406) 443-7272

An International Directory of Personnel and Organizations Involved in Activities Related to the Use of Legumes for Soil Improvement

Marianne Sarrantonio 1989

Includes personnel and organizations involved in the use of legumes for soil improvement, agroforestry, nitrogen fixation/rhizobium, and legume germplasm.

Available from:

Rodale Research Center & Institute
222 Main Street
Emmaus, PA 18099-0015
(215) 967-5171

Legume Cover Crops for Northern California

Rick Miller 1988

A newsletter article that briefly describes the most commonly used legumes including various types of winter annuals, summer annuals, and orchard cover crops.

Available from:

Small Farm News
Small Farm Center
Cooperative Extension - UC Davis
Davis, CA 95616
(916) 752-6609

Legume Seed Source Directory

Rodale Institute Research Center 1991

The 14-page directory includes listings of common and latin names of legumes, seed company lists, and a cross-reference of legumes and seed companies.

Available from:

Rodale Institute for Research Center
611 Siegfriedale Road
Kutztown, PA 19530
(215) 683-6383 office
(215) 683-8548 FAX

Living Mulch Database

A broadly-based technical literature review. Contact Alan Cooper at IPPC for more information.

For more information:

IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331
(503) 737-3541

Melrose Austrian Winter Pea

D.L. Auld, G.A. Murray, and
L.E. O'Keefe 1979

The short publication contains the results of five years of field trials on the "Melrose" variety of Austrian winter pea, developed by the University of Idaho. Request Current Information Series No. 497.

Available from:

Agricultural Publications Building
Building J40, Idaho Street
University of Idaho
Moscow, ID 83843
(208) 885-7982

Methodologies for Screening Soil-Improving Legumes

Marianne Sarrantonio 1991

Information about selecting the right legume for different locations, assessing nitrogen contributions, and fine-tuning the system are outlined in this 310 page book. \$24.95.

Available from:

The New Farm Library
222 Main Street
Emmaus, PA 18098
(215) 967-8946

Organic Farming Fact Sheet: Green Manure Crops

For more information contact:

William K. Kruesi
County Agricultural Agent
University of Vermont Extension
Service
31 The Green
Woodstock, VT 05091

Resource List: Green Manure/Cover Crops

Lists periodicals, extension publications, USDA farmers' bulletins, agriculture experiment station publications, journal articles, Rodale Research Center Reports, books, bibliographies, seed sources and more. Free.

Available from:

Appropriate Technology Transfer for
Rural Areas (ATTRA)
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

Rodale Research Center Reports

At the Rodale Research Center a machine has been developed to plant legume seed into standing crops, for example, corn. The cultivator/planter utilizes two machines in the building process: a Pittsburgh two-row, three-point hitch cultivator, and an 8-foot "John Deere Van Brunt" grain drill with end-wheel drive. Research reports are also provided on a number of projects. Listed below are several of the currently available reports.

Overseeding Cover Crops on Corn and Soybean No. 82-29 R. Hofstetter 1984

Overseeding Legume Cover Crops on Corn and Soybeans No. 81-29 M.C. Palada, et al. 1981

Overseeding Research Results: 1982-1984 No. 84-29 R. Hofstetter 1984

Progress Report - Overseeding 1982 No. 83-29 R. Hofstetter 1983

Vegetable Production in a Living Sod No. 80-9 S. Ganser 1980

For more information:

Rodale Institute Research Center
222 Main Street
Emmaus, PA 18049
(215) 967-8946

USDA Farmers' Bulletins

The USDA produces many information bulletins. Some older titles with information about cover crops are listed below.

Alsike Clover No. 1151 A.J. Pieters 1920

Buckwheat Culture No. 2095 W.J. Sando 1956

Bur-Clover Cultivation and Utilization No. 1741 R. McKee Rev. 1949

Cover Crops for Soil Conservation No. 1758 W.V. Kell 1936

Cowpeas: Culture and Varieties No. 1148 W.J. Morse Rev. 1924

Crotalaria Culture and Utilization No. 1980 R. McKee, G.E. Ritchey, J.L. Stephens, and H.W. Johnson 1946

Green Manuring No. 1250 C.V. Piper and A.J. Pieters 1922

Growing Crimson Clover No. 1142 L.W. Kephart 1929

Growing Rye No. 2145 L.W. Briggie 1959

Growing Summer Cover Crops No. 2182 R. McKee Rev. 1967

Leguminous Plants for Green Manuring No. 278 C.V. Piper 1907

Leguminous Plants for Green Manuring and Feeding No. 16 E.W. Allen 1894

Red-Clover Culture No. 1339 A.J. Pieters and W.R. Walton

Soybean Production for Hay and Beans No. 2024 W.J. Morse, J.L. Carter, and E.E. Hartwig 1950

Sweet Clover: Growing the Crop No. 797 H.S. Coe 1917

The Velvetbean No. 1276 C.V. Piper and A.J. Pieters 1922

Vetch Culture and Uses No. 1740 P.R. Henson and J.A. Schoth 1961

Vetches of the United States - Native, Naturalized, and Cultivated Agriculture Handbook No. 168 F.J. Hermann March 1960

Winter Annual Legumes for the South No. 2146 P.R. Henson and E.A. Hollowell 1960

Available from:

Government Printing Office
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
(202) 783-3238 8:00 - 4:00 EST

Bibliographies

See the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* section of this guide for ordering information.

Double Cropping and Interplanting
QB 89-97

Green Manures and Cover Crops QB 89-58

Legumes in Crop Rotations QB 90-02

Extension Publications

See the *University Resources* section of this guide for ordering OSU, WSU, and PNW publications.

Oregon State University

Cover Crop and Residue Management for Wind Erosion Control on Sandy Soils During Potato Planting CI 671

Cover Crops for Home Gardens FS 304

Forage Varieties for Oregon - Circular of Information 617 by W.S. McGuire, R.V. Frakes, N.R. Goetze, and W.H. Billings 1970. Provides general information on variety descriptions for the Oregon Coast, Willamette Valley, Southern Oregon, Columbia Basin and Blue Mountains, Central Oregon, and the Snake River Valley.

Living Mulch Options for Precision Management of Horticultural Crops
EC 1258

Washington State University

Green Manure and Cover Crops for Irrigated Land EB 0489 25¢

PNW Extension Publications

Managing Orchard Floor Vegetation in the Pacific Northwest PNW 313 75¢

University of Idaho

Winter Pea/Winter Cereal Mixtures as Potential Forage Crops in Northern Idaho
Bulletin No. 638 1985

Available from:

Agricultural Publications Building
Building J40, Idaho Street
University of Idaho
Moscow, ID 83843
(208) 885-7982

Seed Source List

Local seed dealerships may be the best place to purchase seed, however, they do not always carry a wide variety of cover crop seed. The seed sources listed below carry numerous varieties of cover crop seeds. Most of the companies listed have catalogs describing what they sell.

Adams-Briscoe Seed Company
P.O. Box 18
325 East Second Street
Jackson, GA 30233
(404) 775-7826

Bountiful Gardens
Ecology Action
5798 Ridgewood Road
Willits, CA 95490

Ernst Crownvetch Farms
R.D. #5, Box 806
Meadville, PA 16335
(814) 425-7276

Hale Dean Seed Company
P.O. Box 1458
Winter Gardens, FL 34787
(407) 877-3333

Harmony Farm Supply
P.O. Box 451
Graton, CA 95444
(707) 823-9125

Johnny's Selected Seeds
Foss Hill Road
Albion, ME 04910

Johnston Seed Company
Box 1392
Enid, OK 73702
(405) 233-5800

Kester's Wild Game Food Nurseries
P.O. Box V-NF
Omro, WI 5463
(414) 685-2929

Necessary Trading Company
New Castle, VI 24127
(703) 864-5103

C.M. Payne & Sons Seed Co.
9410 Payne Road
Sebring, FL 33870
(813) 38504642

Peaceful Valley
P.O. Box 2209
Grass Valley, CA 95945
(916) 272-4769

Herbicide Resistance in Weeds

The first case of weed resistance to an herbicide was documented in 1970. At present, herbicide resistance is known to exist in at least 54 weed species. This figure is an increase from twelve instances reported in 1980. These figures have important ramifications since weeds are reported to cause annual crop losses of over \$15 billion in the United States.

Quick Bibliography Series

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

Herbicides: Ecological Effects February 1989 QB 89-34

Herbicide Resistance April 1989 QB 89-51

Allelopathy

The term allelopathy includes all biochemical interactions among plants. It is most often associated with harmful effects or interactions. When chemicals produced by one plant inhibit growth or development in another plant, it may be possible to use the plant to inhibit weeds. Allelochemicals may form as a result of plant decomposition or may be produced directly by plants. Recent research has included work on weed suppression in orchards and in large-seeded vegetable crops with cereal mulches such as rye and wheat. The isolation of allelopathic toxins from plants for use as natural herbicides is also being studied.

Allelopathy

E.L. Rice 1984

Historical accounts of allelopathic research, roles of allelopathic compounds in vegetation establishment, allelopathy and prevention of seed decay before germination, and the impact of allelopathy on horticultural and agronomic crops are included. The book also discusses the chemical nature of inhibitors, plant parts that contain the inhibitors, and factors affecting the quantity of inhibitors produced by plants.

Publisher:

Academic Press, Inc.
1250 Sixth Avenue
San Diego, CA 92101
(800) 321-5068

The Chemistry of Allelopathy: Biochemical Interactions Among Plants

A.C. Thompson, Editor 1985

Chapters on allelopathic research in agriculture, economics of weed control in crops, chemistry and biology of allelopathic compounds, and the effects of allelopathy on mineral uptake and plant-water relations are included. \$79.95.

Publisher:

American Chemical Society
1155-16th Street NW
Washington, D.C. 20036
(800) 227-5558

Allelopathic Chemicals: Nature's Herbicides in Action

A.R. Putnam 1983

Chemical and Engineering News Special Report.

Available from:

Distribution Room 210
American Chemical Society
1155 - 16th Street
Washington D.C. 20036

Weed Physiology

S.O. Duke, Editor 1985

A two volume set of books. Volume I is entitled "Reproduction and Ecophysiology" and contains summaries of research findings on mechanisms and constraints of weed reproduction. A chapter entitled "Weed Allelopathy" contains a list of natural substances identified as allelopathic agents. Mode of action and impact on natural and agroecosystems is discussed. The second volume, "Herbicide Physiology", explains methods by which herbicides affect plants. Volume I: \$57, Volume II: \$86.

Publisher:

CRC Press, Inc.
2000 Corporate Blvd. NW
Boca Raton, FL 33432
(800) 272-7737

Quick Bibliography Series

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

Allelopathy: The Effects of Chemicals

Produced April 1990 QB 90-46

Biological Control of Weeds

Biological control of weeds involves the use of both herbivorous (plant-eating) insects and plant pathogens (diseases) which are used to attack a specific plant species. Biological control agents are used to reduce the abundance of a weed below the level which causes economic loss. This method of control is primarily used against non-native species found within an area.

Biological Control of Weeds - A World Catalogue of Agents and their Target Weeds

M.H. Julien, Editor 1987 (Second Edition)

Publisher:

Wallingford
Oxon OX10 8DE
United Kingdom
Tel: Wallingford (0491) 32111

Biological Control of Weeds with Plant Pathogens

R. Charudattan and H.L. Walker, Editors
1982

Plant pathogens which are used for weed control are termed "biological herbicides." They are commercially produced indigenous weed pathogens which are normally applied annually and integrated into an overall pest management program.

Publisher:

John Wiley and Sons
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Biocontrol of Weeds
1140 Cherry Drive
Bozeman, MT 59715
(406) 586-5111

This company sells insects as weed biocontrol agents for Canada thistle, musk thistle, and St. Johnswort on range and pasture lands.

Microbial Control of Weeds Symposium

D.L. Klingman, Editor 1986

This supplement contains 13 papers presented at a symposium on microbial control of weeds and the major focus is on use of fungi to achieve biological control of certain weeds. Weed Science, Vol. 34, Supplement 1.

Available from:

Weed Science Society of America
309 West Clark Street
Champaign, IL 61820

Quick Bibliography Series

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

IPM and Biological Control of Weeds

August 1990 QB 90-51

Commercial Sources of Biocontrol Agents for Weed Control

BioCollect
5841 Crittendon Street
Oakland, CA 94601
(415) 436-8052 or 524-6137

BioCollect will custom-collect insects for control of thistles, Klamath weed (St. Johnswort), tansy ragwort, purslane, puncturevine, Mediterranean sage, Scotch broom, and gorse.

Table 1. Current Status of Biological Weed Control Agents Released in Oregon, Washington, and Idaho

Weed	Agent	Distribution			Infestation			Control			Availability		
		OR	WA	ID	OR	WA	ID	OR	WA	ID	OR	WA	ID
Brown knapweed	<i>Urophora quadrifasciata</i>	L	L	U	L	M	U	U	U	U	L	M	O
Bull thistle	<i>Urophora stylata</i>	L	L	-	S	M	-	U	F	-	O	L	-
Canada thistle	<i>Ceutorhynchus litura</i>	L	U	L	S	U	M	U	U	U	O	O	L
	<i>Urophora cardui</i>	L	L	U	S	M	U	P	U	U	M	L	O
	<i>Rhinocyllus conicus</i>	L	-	L	S	-	L	F	-	F	L	-	L
	<i>Orellia ruficauda</i>	W	W	-	L	M	-	U	F	-	L	L	-
	<i>Calophasia lunula</i>	F	L	U	-	M	U	-	F	U	-	L	O
Dalmatian toadflax	<i>Calophasia lunula</i>	F	L	U	-	M	U	-	F	U	-	L	O
Diffuse knapweed	<i>Urophora affinis</i>	W	W	W	M	M	M	F	F	F	M	M	M
	<i>Urophora quadrifasciata</i>	W	W	W	H	H	M	M	M	F	M	M	
	<i>Sphenoptera jugoslavica</i>	L	L	L	H	H	M	F	F	U	M	M	L
	<i>Pterolonche inspersa</i>	F	U	U	-	U	U	-	U	U	-	O	O
	<i>Bangasternus fausti</i>	U	-	-	U	-	-	U	-	-	O	-	-
Gorse	<i>Exapion ulicis</i>	W	L	-	H	H	-	G	G	-	M	L	-
	<i>Agonopterix nervosa</i>	W	W	-	M	M	-	U	U	-	M	M	-
Halogeton	<i>Coleophora parthenica</i>	-	-	F	-	-	-	-	-	-	-	-	-
Italian thistle	<i>Rhinocyllus conicus</i>	W	-	L	H	-	H	G	-	U	M	-	L

(continued)

Weed	Agent	Distribution			Infestation			Control			Availability		
		OR	WA	ID	OR	WA	ID	OR	WA	ID	OR	WA	ID
Leafy surge	<i>Hyles euphoribae</i>	F	F	U	-	-	U	-	-	U	-	-	O
	<i>Oberea erythrocephala</i>	F	-	F	-	-	-	-	-	-	-	-	-
	<i>Chamaesphecia tenthredinigormis</i>	-	F	-	-	-	-	-	-	-	-	-	-
	<i>Aphthona nigricutis</i>	L	L	U	S	L	U	U	U	U	O	O	O
	<i>Aphthona flava</i>	L	L	U	S	L	U	U	U	U	O	O	O
	<i>Aphthona cyparissiae</i>	L	L	-	S	L	-	U	U	-	O	O	-
	<i>Spurgia esulae</i>	U	-	-	U	-	-	U	-	-	O	-	-
Meadow knapweed	<i>Urophora quadrifasciata</i>	L	L	-	L	M	-	U	U	-	L	M	-
Mediterranean sage	<i>Phrydiuchus tau</i>	W	-	L	H	-	H	P	-	U	M	-	M
	<i>Phrydiuchus spilmani</i>	F	-	-	-	-	-	-	-	-	-	-	-
Milk thistle	<i>Rhinocyllus conicus</i>	W	-	-	H	-	-	G	-	-	M	-	-
Musk thistle	<i>Rhinocyllus conicus</i>	W	W	W	H	H	H	G	E	G	M	M	M
Plumeless thistle	<i>Rhinocyllus conicus</i>	-	W	L	-	H	H	-	E	G	-	M	M
Poison hemlock	<i>Agonopterix alstroemeriana</i>	W	W	W	M	H	M	G	E	G	M	M	M
Puncturevine	<i>Microlarinus lareynii</i>	L	F	U	L	-	U	G	-	U	L	-	O
	<i>Microlarinus lypriformis</i>	L	F	U	L	-	U	F	-	U	L	-	O
Rush skeletonweed	<i>Cystiphora schmidtii</i>	L	W	W	L	H	H	U	E	G	O	M	M
	<i>Eriophyes chondrillae</i>	L	W	W	L	H	H	U	E	E	O	M	M
	<i>Puccinia chondrillina</i>	L	W	W	L	H	H	U	G	U	O	M	M
Russian knapweed	<i>Subanguina picridis</i>	U	U	-	U	U	-	U	U	-	O	O	-

(continued)

Weed	Agent	Distribution			Infestation			Control			Availability		
		OR	WA	ID	OR	WA	ID	OR	WA	ID	OR	WA	ID
Russian thistle	<i>Coleophora parthenica</i>	-	F	F	-	-	-	-	-	-	-	-	-
	<i>Coleophora klimeschiella</i>	-	L	L	-	U	L	-	U	U	-	O	L
St. Johnswort	<i>Chrysolina quadrigemina</i>	W	W	W	H	H	H	E	E	E	M	M	M
	<i>Chrysolina hyperici</i>	W	W	L	H	H	M	G	E	U	M	M	L
	<i>Agrilus hyperici</i>	L	L	W	M	H	M	F	E	U	L	L	L
	<i>Zeuxidiplosis giardi</i>	F	F	F	-	-	-	-	-	-	-	-	-
	<i>Aplocera plagiata</i>	U	L	U	U	S	S	U	U	U	O	L	O
Scotch broom	<i>Leucoptera spartifoliella</i>	W	L	-	F	M	-	U	U	-	L	L	-
	<i>Apion fuscirostre</i>	L	U	-	L	U	-	F	U	-	M	O	-
	<i>Agonopterix nervosa</i>	W	W	-	M	M	-	U	U	-	M	M	-
Slenderflower thislte	<i>Rhinocyllus conicus</i>	W	-	-	H	-	-	G	-	-	M	-	-
Spotted knapweed	<i>Urophora affinis</i>	W	W	W	M	H	M	G	G	F	M	M	M
	<i>Urophora quadrifasciata</i>	W	W	W	H	H	M	G	G	F	M	M	M
	<i>Metzneria pauciunctella</i>	L	W	L	H	M	S	G	G	U	M	M	L
	<i>Agapeta zoegana</i>	U	U	U	U	U	U	U	U	U	O	O	O
Squarrose knapweed	<i>Urophora quadrifasciata</i>	L	-	-	M	-	-	U	-	-	L	-	-
Tansy ragwort	<i>Tyria jacobaeae</i>	W	W	-	H	H	-	E	E	-	M	M	-
	<i>Pegohylemyia seneciella</i>	W	W	-	H	H	-	F	G	-	M	M	-
	<i>Longitarsus jacobaeae</i>	W	W	-	H	H	-	E	E	-	M	M	-

(continued)

Weed	Agent	Distribution			Infestation			Control			Availability		
		OR	WA	ID	OR	WA	ID	OR	WA	ID	OR	WA	ID
Yellow starthistle	<i>Urophora sirunaseva</i>	L	U	U	S	U	U	U	U	U	L	O	O
	<i>Bangasternus orientalis</i>	L	L	L	M	M	S	P	F	U	L	M	O
	<i>Chaetorellia australis</i>	U	U	U	U	U	U	U	U	U	O	O	O
	<i>Eustenopus villosus</i>	U	L	U	U	S	U	U	U	U	O	O	O
Yellow toadflax	<i>Calophasia lunula</i>	F	-	L	-	-	M	-	-	F	-	-	L
	<i>Gymnaetron antirrhini</i>	L	L	U	M	H	U	U	G	U	L	L	O
	<i>Brachypterolus pulicarius</i>	L	L	L	M	M	M	F	F	F	L	L	L

Distribution within host range: W = widespread; L = limited sites; F = failed to establish; U = unknown status; - = not released.

Infestation of hosts: H = heavy (>70%); M = medium (>30%); L = light (>10%); S = slight (<10%); 0 = nondetected; U = unknown status.

Control ability on seeds and/or plant density: E = excellent; G = good; F = fair; P = poor; U = undetermined.

Availability for redistribution: M = mass collections; *L = limited; O = not collectable at present.

*Limited availability indicates agent populations are slow in building or are recently introduced. Work on these species should be coordinated through biological control specialists at the state department of agriculture or state university. Collection and/or transportation of biological control agents may require special permits and procedures.

Reprinted with permission from the 1991 PNW Weed Control Handbook.

Table 2. Biological Agents and their Roles. The biological agents introduced into the Pacific Northwest for the biological control of weeds, and the general role of each agent. Other names by which the agents are known are in parentheses. (C = classical introduction; A = accidental introduction)

SPECIES	ROLE
<i>Agapeta zoegana</i>	root boring moth C
<i>Agonopterix alstroemeriana</i>	defoliating moth A
<i>Agonopterix nervosa</i>	shoot tip moth A
<i>Agrilus hyperici</i>	root boring beetle C
<i>Aplocera plagiata</i> (Anaitis)	defoliating moth C
<i>Aphthona cyparissiae</i>	root/defoliating flea beetle C
<i>Aphthona flava</i>	root/defoliating flea beetle C
<i>Aphthona nigriscutis</i>	root/defoliating flea beetle C
<i>Apion fuscirostre</i>	seed weevil C
<i>Bangasternus fausti</i>	seed head weevil C
<i>Bangasternus orientalis</i>	seed head weevil C
<i>Brachypterolus pulicarius</i>	flower beetle A
<i>Calophasia lunula</i>	defoliating moth C
<i>Ceutorhynchus litura</i>	crown/root weevil C
<i>Chaetorellia australis</i>	seed head fly C
<i>Chamaesphecia tenthrediniformis</i>	root boring moth C
<i>Chrysolina hyperici</i>	defoliating beetle C
<i>Chrysolina quadrigemina</i>	defoliating beetle C
<i>Cystiphora schmidtii</i>	stem/leaf gall midge C
<i>Eriophyes chondrillae</i> (Aceria)	bud gall mite C
<i>Eustenopus villosus</i>	seed head weevil C
<i>Exapion ulicis</i> (Apion)	seed weevil C
<i>Gymnaetron antirrhini</i>	seed head weevil A
<i>Hyles euphorbiae</i>	defoliating moth C
<i>Leucoptera spartifoliella</i>	twig mining moth A
<i>Longitarsus jacobaeae</i>	root/defoliating flea beetle C
<i>Metzneria paucipunctella</i>	seed head moth C
<i>Microlarinus lareynii</i>	seed weevil C
<i>Microlarinus lypriformis</i>	stem boring weevil C
<i>Oberea erythrociphala</i>	stem/root boring beetle C
<i>Orellia ruficauda</i>	seed head fly A
<i>Pegohylemyia seneciella</i> (Hylemyia)	seed head fly C
<i>Phrydiuchus spilmani</i>	crown/root weevil C
<i>Phrydiuchus tau</i>	crown/root weevil C
<i>Pterolonche inspersa</i>	root boring moth C
<i>Puccinia chondrellina</i>	rust fungus C
<i>Rhinocyllus conicus</i>	seed head weevil C
<i>Sphenoptera jugoslavica</i>	root boring beetle C
<i>Spurgia esulae</i> (Bayeria capitigena)	shoot tip gall midge C
<i>Tyria jacobaeae</i>	defoliating moth C
<i>Urophora affinis</i>	seed head gall fly C
<i>Urophora cardui</i>	stem gall fly C
<i>Urophora quadrifasciata</i>	seed head gall fly A
<i>Urophora sirunaseva</i>	seed head gall flu C
<i>Urophora stylata</i>	seed head hall fly C
<i>Zeuxidiplosis giardi</i>	leaf gall midge C

Reprinted with permission from the 1991 PNW Weed Control Handbook.

Table 3. Selected Microbial Herbicides Now Available and Under Development

Trade name	Microbial Agent	Target Weed	Used since	Producer
1. Devine	<i>Phytophthora</i>	milkweed vine	1981	Abbott Laboratories
The target area for this microbial has been citrus groves in Florida.				
2. Collego	<i>Colletotrichum gloeosporioides</i>	Northern jointvetch aeschynomene	1982	Ecogen Inc. Langhorne, PA
The target area for this microbial has been rice and soybean fields in Arkansas.				
3. Lu-bao No. 1	<i>Colletotrichum gloeosporioides</i>	Dodder	1960's	Chinese Govt.
The target area for this microbial has been soybean fields in China.				
4. Unnamed	<i>Chondrostereum purpureum</i>	Black cherry	to come	Koppert Co. The Netherlands
The target area for this microbial has been replanted forests in the Netherlands.				
5. Unnamed	<i>Acremonium diospyri</i>	persimmon	Late 1960's	Noble Foundation Ardmore, OK
The target area for this microbial has been pasture land in Oklahoma.				
6. BioMal	<i>Colletotrichum gloeosporioides</i> malve	round-leaved mallow	to come	Philom Bios Saskatoon, Sask.
The target area for this microbial has been lentil, wheat, and other crops on the Canadian prairies.				
7. Casst	<i>Alternaria cassiae</i>	sicklepod	to come	Mycogen Corp. San Diego, CA
The target area for this microbial has been peanut and soybean in southeastern United States.				
8. (MYX-1200)	<i>Fusarium lateritium</i>	velvetleaf	to come	Mycogen Corp.
The target area for this microbial has been soybean in the United States.				
9. (MYX-1621)	<i>Colletotrichum truncatum</i>	Florida beggarweed	to come	Mycogen Corp.
The target area for this microbial has been soybean and peanut in the United States.				
10. Unnamed	<i>Colletotrichum orbiculare</i>	spiny cocklebur	to come	Agrichemical firm requests anonymity
The target area for this microbial has been sheep grazing lands, cotton, and soybean fields in Australia.				

Reprinted with permission from Agrichemical Age.

Animals

Weed control using various species of grazing animals has been practiced and experimented with for years. Animals such as goats, chickens, sheep, and hogs are sometimes used to control weeds, and they may feed on both crop residues and herbaceous growth while also fertilizing soil. Both chickens and geese have been successfully used to control weedy growth in orchards. Geese have also been used for weed control in crops such as strawberries, onions, garlic, carrots, and raspberries, and they are especially useful in the reduction of certain grasses.

The Book of Geese

Dave Holderread

A valuable reference for waterfowl raisers and containing information on the usefulness of geese, their limitations, characteristics, behavior, breeds, getting started, incubation, rearing goslings, managing adult geese, diagnosing diseases, sexing and butchering, and more. \$7.95.

The Home Duck Flock

Dave Holderread 1979

A complete guide to raising ducks and includes information on starting and maintenance of the flock. \$7.95 paperback; \$10.95 hardbound.

Both available from:

Holderread's Waterfowl Farm &
Preservation Center
P.O. Box 492
Corvallis, OR 97339
(503) 929-5338

Sources of Weeder Geese

Feather Creek Farm, Incorporated
P.O. Box 70
Grants Pass, OR 97526
(503) 474-1526

Holderread's Waterfowl Farm & Preservation
Center
P.O. Box 492
Corvallis, OR 97339
(503) 929-5338

Morris Farms & Hatcheries, Incorporated
18370 SW 323rd Street
Goulds, FL 33170
(305) 248-5589 or (305) 247-1070

Pina
644 Maxwellton Road
Clinton, WA 98236
(206) 221-3976

Webfoot Farm & Hatchery Limited
Elora, Ontario NOB ISO
(519) 846-9885

Flaming

The first flame weeder was developed and patented in the United States in 1856. Flaming uses a controlled flame to kill both grasses and broadleaf weeds, although it is not as effective on grasses as it is on broadleaf weeds. Gas pressure and ground speed are used to control the heat. Flaming units are sold by several different companies and are mountable on various cultivators.

Sources of Flame Weeders

Ben Meadows Company
P.O. Box 80549
Atlanta, GA 30366
(800) 547-8813

Flame Engineering, Inc.
P.O. Box 577
LaCrosse, KS 67548
(800) 255-2468

Forestry Suppliers, Inc.
205 West Rankin Street
Jackson, MS
Mailing address:
P.O. Box 8397
Jackson, MS 39204-0397
(800) 647-5368 or (800) 682-5397

Thermal Weed Control Systems Inc.
3403 Highway 93
Eau Claire, WI 54701
(715) 839-7242

Turf-Tec International
2210 North 124th Street
North Miami, FL 33181

Non-Living Mulches

There are many types of mulching materials and weed barriers available to commercial growers. Mulching films can be made of clear or black materials. Clear plastic mulches pass infrared radiation (heat) through them and are often used for early warming in the spring and for soil solarization. Black plastic mulches do not allow visible radiation to pass through and are often used to suppress weed growth. Plastic mulches are available which are photo-degradable; the degradation rate varies and depends on the type of plastic used. There are also biodegradable mulches comprised of a variety of materials such as peat.

Sources of Weed Mats and Sunlight Barriers

Blunk's Wholesale Supply Inc.
8923 South Octavia
Bridgeview, IL 60453
(312) 430-2025

EI duPont de Nemours & Company
Textile Fibers Department
Wilmington, DE 19898
(800) 448-9835

Phillips Fibers Corporation
P.O. Box 66
Greenville, SC 29602
(803) 242-6600

Aquashade, Inc.
P.O. Box 198
Eldred, NY 12732
(914) 557-8077

Aquashade is a non-phytotoxic product for use in control of weeds and algae in ponds and lakes. Photosynthesis of weeds or algae is prevented by dyes which absorb the orange and yellow wavelengths of light.

PLANT DISEASE MANAGEMENT

General References
Alternative Pesticides
Postharvest Diseases and
Control

General References

Biocontrol of Plant Diseases - Volumes 1 & 2

K.G. Mukerji and K.L. Garg, Editors
1988

A comprehensive book on plant disease biocontrol containing chapters on: concepts and practices; uses and practical constraints; application of biocontrol agents; diseases of fruit; plant breeding strategies; fungi as agents of biocontrol; and storage mold diseases of seed. Each volume sells for \$155.

Published by:

CRC Press
2000 Corporate Blvd. NW
Boca Raton, FL 33431
(800) 272-7737

Biological and Cultural Tests for Control of Plant Diseases

American Phytopathological Society -
Published annually

A compilation of research reports of biological and cultural tests in such areas as fruits and nuts, vegetables, ornamentals, and small grains. \$20.

Available from:

American Phytopathological Society
Press
3340 Pilot Knob Road
St. Paul, MN 55121
(800) 328-7560

Compendium Plant Disease Series

The guides within the Compendium Plant Disease Series provide useful information about diagnostic tools and assist in explaining various methods of disease control. Technical information on plant pathology is included along with a special section of color photos. \$26 each.

Compendium of Apple and Pear Diseases

Herbert Aldwinckle and Alan Jones, Editors
1990

Compendium of Corn Diseases

M.C. Shurtleff, Editor 1980

Compendium of Grape Diseases

R. Pearson and A. Hoheen, Editors 1988

Compendium of Pea Diseases

D.J. Hagedorn, Editor 1984

Compendium of Potato Diseases

W.J. Hooker, Editor 1981

Compendium of Strawberry Diseases

J.L. Maas, Editor 1984

Compendium of Sweet Potato Diseases

C.A. Clark and J.W. Moyer 1988

Available from:

American Phytopathological Society
3340 Pilot Knob Road
St. Paul, MN 55121
(800) 328-7560

Cultural Practices and Infectious Crop Diseases

J. Palti 1981

The book examines cultural practices and their effects on crop disease incidence, with a brief look at the principal agroclimates of the world. Emphasis is on what growers can do, either alone or in cooperation with others in the farming community. Some of the cultural practices discussed include sanitation, crop sequence, soil amendments and mulches, tillage, nutrition, plant density, harvesting dates and methods, moisture relationships, pruning, and physical barriers. \$85.

Published by:

Springer Verlag New York, Inc.
175 Fifth Avenue
New York, NY 10010
(800) 777-4643

**Cucurbit Diseases: A Practical Guide for
Seedsmen, Growers, and Agricultural
Advisors**

Bernhardt, Dodson, and Watterson 1985

Includes color photographs of many diseases showing plants and fruit, including stems and root pictures when relevant. Also included are sections on nutrient deficiencies, resistant varieties, and environmental disorders. \$10.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

**Disease Resistant Apple Cultivars Developed from the Apple Breeding Program at
The University of Illinois**

University of Illinois

Provides descriptions of nine scab-immune apple cultivars released by Purdue University, Rutgers University and University of Illinois breeders. Publication number PRI-B790. \$1.

Available from:

Office of Agricultural Communications
University of Illinois
69-BB Mumford Hall
1301 West Gregory Drive
Urbana, IL 61801

Diseases of Greenhouse Plants

J.T. Fletcher 1984

A standard reference book for information on disease control in greenhouses. Also included are chapters on tomato, cucumber, lettuce, mushroom, pepper, and ornamental diseases. \$44.95.

Published by:

John Wiley & Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 526-5368

Identifying Diseases of Vegetables

A.A. MacNab, A.F. Sherf, and J.K.
Springer 1983

Contains information on observed symptoms and color photographs of common diseases attacking 18 different vegetable crops. Abiotic diseases, nutrient related disorders, and herbicide injury information are included for some crops. \$13.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Pathogens, Vectors, and Plant Diseases

K.F. Harris and Karl Maramorosch,
Editors 1982

Illustrates how knowledge of pathogen-vector-host interactions, vector ecology, and disease epidemiology is applied to disease prevention and control. Discussions on less well-known strategies such as non-pesticidal control of vector-borne diseases, use of oil sprays and reflective surfaces for control of insect-transmitted viruses, and biocontrol of mycoplasmas are included. \$55.

Published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 92101
(800) 321-5068

Plant Pathogens and Their Control in Horticulture

G. R. Dixon 1984

Fungal, viral, and bacterial pathogens are described including information on transmission, survival, spread, and classification. There is also a section on control which includes details on host resistance, spray application, plant health regulations, and cultural and biological methods.

Published by:

MacMillan Publishing Company
866 Third Avenue
New York, NY 10022
(800) 257-5755

Plant Pathologist's Pocketbook

Commonwealth Mycological Institute
1983

Chapters are included on mycoplasmas, air pollution, forecasting, crop loss assessment, postharvest loss, nematodes, plant quarantine, regional and country disease lists, weeds, media and fixatives, and seed health tests. \$15.95.

Published by:

Lubrecht & Cramer, Ltd.
RD 1, Box 244
Route 42
Forestburgh, NY 12777
(914) 794-8539

Plant Pathology

George N. Agrios 1986

A good, general book which discusses the ways pathogens attack, their effects on the physiological functions of plants, defense mechanisms of plants, effect of the environment on development of infections, and control of plant diseases. Chapters on plant diseases specifically caused by fungi, bacteria, viruses, nematodes, and protozoa are included. \$49.50.

Potato Diseases

A.E. Rich 1983

Potato diseases are thoroughly described including information on causes and controls. \$59.

Both published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 02101
(800) 321-5068

**Principles of Seed Pathology -
Volumes 1 & 2**

V.K. Agarwal and J.B. Sinclair 1987

A general book which discusses the significance of seedborne pathogens, location of seedborne inoculum, mechanism of infection, factors affecting infection, factors affecting seed transmission, detection of seedborne pathogens, and the control of seedborne pathogens. Biological, chemical, mechanical, and physical control of seedborne pathogens is also included. \$259.90.

Published by:

CRC Press
2000 Corporate Blvd. NW
Boca Raton, FL 33431
(800) 272-7737

The Production of New Potato Varieties

G. Ellis and D. Richardson, Editors 1987

Contains a variety of papers on breeding new varieties, germplasm sources, input uses, drought, pest, and disease factors. \$49.50.

Published by:

Cambridge University Press
40 West 20th Street
New York, NY 10011
(800) 221-4512

Raspberries and Blackberries: Their Breeding, Diseases, and Growth

D.L. Jennings 1988

An academic text covering research, history, and breeding progress of raspberries and blackberries and their derivatives. The disease section and reference lists are particularly useful. \$43.95.

Published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 92101
(800) 321-5068

Small Fruit Varieties and Disease Resistance

Two new berry varieties have been released by the Oregon State University Agricultural Experiment Station and the Washington State University Agricultural Research Center. "Waldo" is a new blackberry featuring thornless canes and is resistant to cane and leaf spot. It is similar to Evergreen variety blackberries in its growth characteristics. "Summit" is a new red raspberry variety with strong resistance to foliage and root diseases and appears to survive well in heavy soils.

For more information about these varieties contact:

F.J. Lawrence
USDA-ARS
National Clonal Germplasm Repository
33447 Peoria Road
Corvallis, OR 97333

The nurseries listed below may have supplies of "Waldo" and "Summit" berries:

Cedar Valley Nursery
3833 McElfresh Road, SW
Centralia, WA 98531
(206) 736-7490

Ken Spooner Farms
10816 Orting Highway East
Puyallup, WA 98373
(206) 845-5519

Raintree Nursery
391 Butts Road
Morton, WA 98233
(206) 496-5410

Sakuma Brothers Farms, Inc.
P.O. Box 427
Burlington, WA 98233
(206) 757-6611

Week's Berry Nursery
6494 Windsor Island Road, North
Salem, OR 97303
(503) 393-8112

Tomato Diseases: A Practical Guide for Seedsmen, Growers, and Agricultural Advisors

Jon C. Watterson 1985

Includes color pictures of many diseases of plants, fruit, stems and roots. Also included are sections on nutrient deficiencies, resistant varieties, and environmental disorders. \$10.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Vegetable Diseases and Their Control

C. Chupp and A.F. Sherf 1960

Contents are organized by crop and contain detailed descriptions of vegetable diseases and their control. Many cultural and physical disease management techniques are included. \$47.50.

Published by:

John Wiley & Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Virus Diseases of Small Fruits

R.H. Converse, Editor 1987

Includes discussions on the history, geographic distribution, importance, symptoms, transmission, cause, detection, and control for strawberry, blueberry, cranberry, currant, gooseberry, blackberry, and raspberry virus and virus-like diseases. Publication number: Agriculture Handbook 631.

Available from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Virus and Viruslike Diseases of Pome Fruits

Washington State University - SP0003

Describes and illustrates the symptoms produced by all known viruses of apples and pears, worldwide. Other disorders which are sometimes mistaken for viral infections are also included. \$37.50.

Available from:

Washington State University
See the *University Resources* Section
of this guide for ordering information

Bibliographies

Refer to the Alternative Farming Systems Information Center of the National Agriculture Library in the *Organizations* section of this guide for ordering information.

IPM and Biological Control of Plant Pests:

Horticultural Crops QB 90-47

Extension Publications

See the *University Resources* section of this guide for information about ordering OSU, WSU, PNW, and University of California publications.

Oregon State University

Bean Necrosis Disease FS 212

Bean Rust FS 83

Bibliography of Nematode Interactions with Other Organisms in Plant Disease Complexes SB 623 Free

Blossom-End Rot of Tomatoes FS 139

Blueberry Cultivars for Oregon EC 1308

Controlling Bacterial Soft Rot and Blackleg Potatoes EC 954

Controlling Diseases and Insects in Home Orchards EC 631

Control of Walnut Blight in Oregon EC 646

Detecting and Controlling Eastern Filbert Blight EC 1287

Discourage Plant Diseases in Your Home Garden FS 242

Dutch Elm Disease EB 836

Halo Blight of Beans FS 82

Management of Aphid-Borne Legume Viruses SB 615

Onion White Rot FS 235

Preparation of Tank-Mix Bordeaux Mixture DFFS 185

Relation of Environment and Nutrition to Plant Susceptibility to Bean Yellow Mosaic Virus by Aphid Transmission TB 106

Scab-Immune Apple Varieties for New Orchards EC 1334

Stony Pit of Pear in Oregon TB 93

Tobacco Rattle Virus in Oregon Potatoes
EC 844

White Mold and Grey Mold of Snap Beans
FS 222

Washington State University

Apple Anthracnose EB 0940 25¢

Apple Scab EB 1044 50¢

Bark Disorders of Apple EB 1421 50¢

Black Leaf of Grapes in Washington EB
0745 25¢

Botrytis Bunch Rot of Grape EB 1370 25¢

Botrytis Neck Rot of Onion EB 1359 25¢

Brown Rot of Stone Fruits EB 1047 75¢

Cherry Leaf Mottle EB 0981 25¢

Club Root of Cabbage and Other Crucifers
EB 1049 25¢

Collar Rot of Pome and Stone Fruits
EB 1497 75¢

Coryneum Blight of Stone Fruits EB 1266
25¢

Crown Gall EB 0923 25¢

Crown Gall of Grapes EB 0742 25¢

Curly Top of Tomato EB 1255 25¢

Cytospora Canker of Stone Fruits EB 1448
50¢

Dead Spur on Delicious Apples EB 1322
25¢

Downy Mildew of Onion EB 1310 50¢

**Economics of Culture Methods to Suppress
Green Peach Aphid as a Virus Vector**
XB 0900 Free

**Effect of Two Tomato Growth Methods on
Curly Top Virus** XC 0600 Free

**Field Guide to Sweet Cherry Diseases in
Washington** EB 1323 \$2.50

Fire Blight EB 1352 25¢

Gray Mold (Botrytis Blight) EB 1045 25¢

**Incidence and Yield and Eutypa Dieback of
Grapevine in Washington State** XB 0993
Free

Late Blight of Potato and Tomato EB 0958
75¢

**New Disorder of Sweet Cherry in the
Yakima Valley** EB 1152 25¢

Peach Leaf Curl EB 1046 25¢

**Pea Wilt and Pea Root Rots in the Home
Garden** EB 1262 25¢

**Perennial Canker and Bull's Eye Rot of
Apples** EB 1517 25¢

Plant Diseases EB 1239 \$1.25

Potato Leaf Roll EM 2704 25¢

Potato Scab EB 1243 25¢

Powdery Mildew of Cherry EB 1539 75¢

Powdery Mildew of Grapes in Washington
EB 1202 25¢

**Purple Spot and Stemphylium Leaf Spot of
Asparagus** EB 1418 25¢

**Raspberry and Strawberry Root Rots in
Home Gardens** EB 1082 25¢

Reducing Sweet Cherry Surface Pitting
EB 1219 50¢

Sclerotinia Disease (White Mold) of Bean
EB 1178 25¢

Sclerotinia Stem Rot on Potato EM 2936
25¢

**Symptoms of Grape Disorders in
Washington** EB 0722 \$3.50

Strawberry Aphids and Strawberry Viruses
EB 1012 25¢

Verticillium Wilt EB 1407 50¢

Virus Diseases of Squash in Washington
EB 1508 50¢

Walnut Blight EB 1276 25¢

WSU Official Bacterial Ring Spot Report on Commercial Potatoes EM 2506 Free

Pacific Northwest Extension Publications

Identifying Diseases of Vegetables PENN \$8

Pacific Northwest Plant Disease Control Handbook (revised annually) PLANT \$15

University of California Extension Publications

Almond Disease Guide 1980 No. 2609
Identification, control, and economic impact of common diseases. \$1.75

Apple Scab Management 1985 No. 21412
How to recognize and treat early stages of the disease. \$1

Asian Pear Varieties in California 1977 No. 4068
Origin, sources, bloom dates, pollination requirements, training and pruning, susceptibility to diseases and pests, harvest dates, and fruit quality and storage. \$1.75

Bacterial Canker and Blast of Deciduous Fruits 1980 No. 2155 \$1

Bitter Pit of Apples 1975 No. 2712
Symptoms, causes, treatment, and preventative measures. \$1

Blackmold of Ripe Tomato Fruit 1980 No. 21154
Symptoms, habits, and control of *Alternaria alternata*. \$1

Branch Wilt Disease of Walnut Trees 1962 No. 2610
How to treat at the first signs of disease. 50¢

Brown Rot of Stone Fruits 1980 No. 2206
Symptoms, cycles, and control measures. \$1

Cherry Crinkle and Deep Suture Diseases 1976 No. 2454 50¢

Controlling Ceratocystis Canker of Stone Fruit Trees 1969 No. 2205 50¢

Controlling Damping-Off Diseases in the Garden 1982 No. 21299
Identification and non-chemical control. \$1

Diseases of Temperate Zone Tree Fruit and Nut Crops 1991 No. 3345 \$55

Edible-Pod Pea Production in California 1983 No. 21328
Varieties and cultivation; disease, pest, and weed control; harvesting and marketing. \$1

European Canker of Apple in California 1972 No. 2612 50¢

Eutypa Dieback of Apricot and Grape in California 1980 No. 21182 \$1

Leaf Curl Control in Peaches and Nectarines 1979 No. 2613
Symptoms, cycle, and control. \$1

Shot Hole of Stone Fruits 1983 No. 21363
Identification, symptoms, and control. \$1

Virus Diseases of Small Fruits and Grapevines 1970 No. 4056
Distribution, history, importance, hosts, symptoms, therapy, and control. \$7.50

Yellow Bud Mosaic 1985 No. 2862
How to identify and control yellow bud mosaic in peaches, nectarines, almonds, cherries, plums, prunes, and berries. \$1

Alternative Pesticides

Crown Gall Biocontrols

These products are found under many different names but all are cultures of a beneficial bacteria, *Agrobacterium radiobacter* (strain K84), which infests the roots of plants and prevents establishment of the bacteria which causes crown gall. Plants, seeds, and cuttings may be dipped in this material prior to planting. Crown gall biocontrols are useful with such plants as stone fruits, caneberries, weeping cherries, euonymus, and clematis. This product may be purchased from the following suppliers:

Ag Bio Chem Inc.
3 Fleetwood Court
Orinda, CA 94563
(415) 254-0798

IPM Laboratories
Locke, NY 13092-0099
(315) 497-3129

Peaceful Valley Farm Supply
11173 Peaceful Valley Road
Nevada City, CA 95959
(916) 265-3276

F-Stop

F-Stop is a biological fungicide developed by the Eastman Kodak Company; it is expected to be on the market by late 1991. The product contains spores of a beneficial fungus, *Trichoderma harzianum*, which reportedly effectively controls Pythium infestations and some other fungal diseases. It may be applied directly to the seed or added to the seed coating or pelleting material.

Mycoshield Fire Blight Control

Mycoshield is a naturally occurring antibiotic and provides protection against fireblight on pears and Bacterial Spot on peaches. This is a low toxic material which is applied at 10% bloom and is available from Peaceful Valley Farm Supply (address given above).

Postharvest Diseases and Control

General References

The Commercial Storage of Fruits, Vegetables, and Florist Nursery Stocks
USDA 1968

A classic handbook on postharvest handling of horticultural crops. Presents brief summaries of the essential average storage requirements of horticultural crops. Includes discussion of the factors involved in cold storage, ranging from pre-cooling and air circulation to controlled atmospheres and freezing injury. Publication number AH0066. \$2.75.

Available from:

Washington State University
Bulletin Office

See the *University Resources* section of this guide for ordering information

Controlled Atmospheres For Storage and Transport of Perishable Agricultural Commodities

D.G. Richardson, Editor 1982

Contains information on controlled atmosphere storage structure, energy use, relative humidity, automated control systems, and modified-atmosphere packaging. Studies on controlled atmosphere effects are presented for cherries, peaches, nectarines, strawberries, kiwi-fruits, tomatoes, cabbage, and many other horticultural commodities. \$39.95.

Publisher:

Timber Press
9999 SW Wilshire
Portland, OR 97225
(800) 327-5680

Refrigeration and Controlled Atmosphere Storage for Horticultural Crops

J.A. Bartsch and David Blanpied 1990

A Cornell University extension publication which addresses construction of cold rooms, different types of refrigeration systems, and controlled atmosphere storage. \$5.25.

Available from:

Northwest Regional Agricultural
Engineering Service
152 Riley-Robb Hall
Cooperative Extension
Cornell University
Ithaca, NY 14853
(607) 255-7654

Postharvest Technology of Horticultural Crops Second Edition

A.A. Kader, Editor 1992

The book reviews information on post-harvest handling of crops including: pre-harvest factors affecting postharvest quality; cooling, packaging and storage concepts; pathology and disease control; transport; standards and quality evaluation; and gives an overview of postharvest handling procedures for vegetables, fruits, nuts, and ornamental commodities. Included are numerous flow diagrams, charts, tables, and color plates for disease identification. Publication #3311. \$45

Available from:

University of California. See the *University Resources* section of this guide for ordering information

Extension Publications

See the *University Resources* section of this guide information about ordering OSU, WSU, PNW, and University of California publications.

Washington State University Extension Publications

Designing Bulk Potato Structures

PNW 0236 50¢

Effect of Some Potato Harvester Operating Variables on Tuber Injury XC 0583 Free

Potato Storage and Ventilation EM 2799 50¢

Reducing Potato Damage During Harvest EB 0646 50¢

Reducing Potato Harvesting Bruise EB 1080 25¢

Refrigerated Storage for Horticultural Crops NRAES 22 \$4.75

Vacuum Cooling Vegetables NY/IB186 50¢

Pacific Northwest Extension Publications

Insulation and Vapor Barriers in Potato Storage Buildings PNW 0295 75¢

Onion Storage: Guidelines for Commercial Growers PNW 0277 75¢

Potato Storage and Quality Maintenance in the Pacific Northwest PNW 0257 75¢

University of California Publications

Handling Strawberries for Fresh Market 1964 No. 2442 Information on how to preserve quality. \$1

Harvesting and Handling California Table Grapes for Market 1985 No. 1913 How to market high-quality grapes over long periods and in large distribution areas. \$10

Postharvest Treatment of Pear Trees for Control of Pear Decline 1974 No. 2614 50¢

Potato Storage Diseases 1981 No. 2596 \$1

Small-Scale Cold Rooms for Perishable Commodities 1987 No. 21449 \$1

Walnut Harvesting and Handling in California 1978 No. 21036 50¢

Color Slide Sets from the University of California:

Ethylene in Postharvest Biology and Technology of Horticultural Crops No. 84/115
Presents beneficial and detrimental effects of ethylene treatment. Eighty 2x2 color slides, script, audio cassette. \$52

Maintaining Transit Temperatures in Truckloads of Perishables No. 86/132
Describes conditions influencing perishable product temperatures in transit and practices for maintaining desired temperatures. Details effects of load size and tightness, loading practices and patterns, ambient weather en route, and length of transit period. Sixty-nine 2x2 color slides, script, audio cassette. \$44.90

Modified Atmospheres During Transport and Storage of Horticultural Crops No. 84/118
Summarizes the beneficial and harmful effects of modified atmospheres on fresh produce. Illustrates methods for establishing, maintaining, and monitoring controlled atmospheres. Eighty 2x2 color slides, script, audio cassette. \$52

Postharvest Biology of Horticultural Crops: An Overview No. 84/117
Offers an overview of currently available postharvest handling procedures to maintain quality. Outlines biological and environmental factors that contribute to postharvest deterioration and losses. Eighty 2x2 color slides, script, audio cassette. \$52

Postharvest Cooling of Horticultural Crops No. 83/130
Covers cooling terms, cooling methods, and factors affecting cooling efficiency. Eighty 2x2 color slides, script, audio cassette. \$52

Insect Management

Insect Identification
Insect Pest Management
Alternative Pesticides
Beneficial Organisms

There are many pest control options to choose from in pursuit of insect pest management. In an integrated pest management (IPM) system, decisions are made after considering cultural, mechanical, biological and chemical options. Other components of an IPM system that enhance its success include prevention of the pest problems, proper problem identification, and good monitoring skills. These components are covered in this section. However, conventional chemical options have been excluded from this guide as there is a wealth of information already available to growers on this subject.

Your local county Extension Agent can answer many pest management questions. It is best to call ahead to make an appointment; when speaking with the agent, be as specific as possible about the pest problem. See the *University Resources* section of this guide for information about office locations and phone numbers of Extension offices in Washington and Oregon. Two other good sources of information about insect management are the Appropriate Technology Transfer for Rural Areas (ATTRA) and the Bio-Integral Resources Center (BIRC); see the *Organizations* section of this guide for more information. Books on pest management that include information on insect identification can also be found under the *Beneficial Organisms* section in this chapter.

Insect Identification

General References

The Audubon Society Field Guide to North American Insects and Spiders
Audubon Society 1980

The book has a flexible binding and a lightweight plastic cover making it suitable for field use. Color photographs are included.
\$14.95.

Published by:

Alfred A. Knopf
400 Hahn Road
Westminster, MD 21157
(800) 733-3000

A Field Guide to the Insects of America North of Mexico

Donald J. Borror and Richard E. White
1974

A Peterson Field Guide Series handbook. The book contains extensive photographs and descriptions of insects found in the U.S. and Canada. Paperback \$12.95; hardbound \$17.95.

Published by:

Houghton Mifflin Company
Wayside Road
Burlington, MA 01803
(800) 225-3362

The Field Scouting Manual
1990 \$25

Published by:

University of Nebraska
Field Scouting
104 Agricultural Communications
Lincoln, NE 68583-0918
(402) 472-7211

A Guide for Integrated Pest Management in Western Snap Beans

Rick Weinzierl, Paul Koepsell, Glenn Fisher, and Ray William 1983

A short article detailing an IPM program in snap beans.

Available from:

Glenn Fisher
Entomology Department
Oregon State University
Corvallis, OR 97331
(503) 737-3151

Insects and Mites of Economic Importance in the Northwest

Ralph E. Berry 1978

Published by and available from:

Oregon State Bookstores, Inc.
P.O. Box 489
Corvallis, OR 97331
(503) 737-4323
\$11.95

Insect Pests of Farm, Garden, and Orchard

Eighth Edition

Ralph Davidson, Howard and Leonard Marion Peairs

Published by:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539
\$42.50

Japanese Beetle: A Major Pest of Plants

Available from:

Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97310-0110
(503) 378-6458
No Charge

Keys to Damaging Stages of Insects Commonly Attacking Field Crops in the Pacific Northwest

Robert L. Stoltz 1987

A University of Idaho Extension field identification guide. Written in a non-technical style, it describes many common pests of specific crops grown in the Pacific Northwest. Color plates are included. \$15.

Available from:

Cooperative Extension Services
University of Idaho
Agricultural Science Building
Moscow, ID 83843
(208) 885-6639

Pest Control for Organic Vegetable Growers

Published by the New Hampshire Cooperative Extension Service with the assistance of the Natural Organic Farmers Association of New Hampshire. No charge.

Available from:

Richard Dick
Department of Crop and Soil Science
Ag & Life Sciences Building 3017
Oregon State University
Corvallis, OR 97331
(503) 737-5718

Extension Publications on Insect Identification and Monitoring

See the *University Resources* section of this guide for OSU, WSU, PNW, and University of California publications ordering information. Be sure to include the publication number when ordering.

Oregon State University Extension Publications

Bees of Northwestern America:

HALICTUS TB 126

Biological Control Agents and Where to Find Them EC 1328

**Biology and Control of the Garden
Symphylan** EC 845

**Bionomics and Control of the Two-Spotted
Spider Mite on Pear in Southern Oregon**
TB 101

**Detecting and Controlling Honey Bee Brood
Mites (*Varroa jacobsoni* Oudemans)**
EC 1272

**Detecting and Controlling the Corn
Earworm in the Willamette Valley** EC 1180

Sampling for Soil Insect Pests EC 1079

**Selecting and Monitoring Pheromone Traps
in Insect Pest Management** EC 1207

**Small Fruit Pests: Biology, Diagnosis and
Management** WAEB 1388

The Strawberry Crown Moth EC 1175

Washington State University Extension
Publications

**Insect Publications and Extension Entomolo-
gists** CO 921 Free. A complete listing of all
the entomological extension publications
available from Washington State University

Grape Phylloxera EB 1566 50¢

**1991 Pest Control Guide for Commercial
Small Fruits** EB 1491

PNW Extension Publications

**How to Recognize Cut Worms, Army
Worms, Loopers** PNW 130 25¢

Insects of Peas PNW 150 50¢

Mint Root Borer in the Pacific Northwest
PNW 322 \$1.25

Insects on Mint PNW 182 \$1.50

**A Sampling Plan for the Two-spotted Spider
Mites in Mint** PNW 251 25¢

**Integrated Pest Management of Insects and
Mites Attacking Pears in Southern Oregon**
SB 634 Free

**Beneficial Organisms Associated with Pacific
Northwest Crops** PNW 343 \$1

Private Labs and Consultants

A few private consultants and laboratories
that specialize in identifying pest problems are
listed below.

Oregon

Collins Ag. Consultants, Inc.
Ron Collins, Greg Collins, Paul Kloft
Route 2, Box 344
Hillsboro, OR 97123
(503) 628-2180

Marvin D. Kauffman
Soil Scientist
4520 SE Balboa Place
Albany, OR 97321
(503) 926-8973

Northwest IPM
Dan Stein
P.O. Box 11445
Eugene, OR 97440
(503) 344-2487

Washington

Agrimanagement, Inc.
1001 South Third Street
P.O. Box 583
Yakima, WA 98907
(509) 453-4851

Ron Britt & Associates
107 - 68th Place North
Yakima, WA 98908
(509) 966-9681

Microbiotica International, Inc.
Olaf K. Ribeiro
10744 Manitou Beach Drive NE
Bainbridge Island, WA 98110
(206) 842-1157

Organic Pest Management

David C. Mirogon
P.O. Box 55267
Seattle, WA 98155
(206) 367-0707

Peninsu-Lab West

P.O. Box 3000
Kingston, WA 98346
(206) 297-3295 or
1-800-635-6866

Send samples to:

5796 NE Minder
Poulsbo, WA 98370

Soil & Plant Lab, Inc.

1347 - 27th Place SE, Suite 3-B
P.O. Box 4
Bellevue, WA 98009
(206) 746-6665

Idaho

Agri-Test

Dave Argyle
2043 Kimberly Road
P.O. Box 4
Twin Falls, ID 83304
(208) 734-2303

Stukenholtz Laboratory, Inc.

Dr. Dale Stukenholtz
Addison Avenue East
Box 353
Twin Falls, ID 83301
(208) 734-3050

Monitoring Equipment Suppliers

Automata

19393 Redberry Road
Grass Valley, CA 95945-9615
(916) 273-0380

"Bug Counters" and Data Lynx Telemetry
Equipment

BioQuip Products

P.O. Box 61
Santa Monica, CA 90406
(213) 324-0620

A biological supply company selling
equipment for entomological storage, lab and
field equipment, supplies and books

Bio-Integral Resource Center (BIRC)

P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

Common Sense Pest Control Products and
Services Directory

Peaceful Valley Farm Supply

P.O. Box 2209
Grass Valley, CA 95945
(916) 272-4769

Pocket microscopes and hand lenses,
sweep nets, thermographs and thermometers,
and D-Vacs.

Pest Management Supply Company

P.O. Box 938
Amherst, MA 01004
(413) 253-3747

Carries a large line of pest management
supplies including physical barriers, phero-
mone traps, recording equipment etc. Free
telephone consultation and referral.

Ward's Natural Science Establishment, Inc.

Biology Catalog
11850 East Florence Avenue
P.O. Box 2567
Santa Fe Springs, CA 90670-0567
(213) 946-2439

A science materials supplier. Ward's
carries a large array of insect collecting,
rearing and displaying materials, including
instructional media.

Insect Pest Management

General References

Handbook of Plants with Pest Control Properties

Michael Grainge and Saleem Ahmed 1988

Prepared by staff at the East West Center in Hawaii, the handbook provides information on plant species that have pest control properties. Plant scientific, family, and common names along with information about each plant are listed. Life cycle and the ecological conditions that best suit growth are outlined. The active ingredients for each plant are given along with the types of activity, plant parts used, and methods of preparation and application. \$54.95.

Plant Resistance to Insects: A Fundamental Approach

Michael Smith 1989

Contains information about how scientists identify and develop plant materials resistant to insects, including discussions of terminology and categories of resistance. Techniques for studying plant resistance are explained. The book also includes descriptions of crop pest management systems that utilize insect resistant varieties. \$37.50.

Plant Stress-Insect Interactions

E.A. Heinrichs, Editor 1988

The physiological, chemical, and morphological responses that result from plant stresses and alter the plants' susceptibility to insects.

All three of the above listed published by:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Natural Resistance of Plants to Pests: Roles of Allelochemicals

Maurice B. Green and Paul A. Hedin,
Editors 1986 \$49.95

Published by:

American Chemical Society
1155 - 16th Street NW
Washington, D.C. 20036
(800) 227-5558

Video Tapes on Pest Management

Biological Control of Vegetable Pests 2 hour
#8009 Pest and beneficial insect identification. How to manage insects with biological resources.

Organic Strawberry Production #8012
Covers site selection, site preparation, varieties, planting systems as well as pest and weed control. Aimed at the small commercial grower.

Growing Raspberries #9014 Covers varieties, site selection, bed preparation, planting and care of the crop through harvesting and marketing. Pest and disease management are included.

Organic Pest and Weed Control 30 minutes
#8002 A general explanation of organic methods of controlling insects and diseases. Specific examples of pest and weed control are given.

All four available from:

Natural Organic Farmers Association
(NOFA), see the *Video tapes and Other Media Offerings* section of this guide for more information

Common Sense Pest Control for Home and Garden

\$25 rental fee, plus a \$2 shipping fee. A refundable deposit of \$25 is required.

Integrated Pest Management

Purchase price: \$39.95

Both available from:

Bio-Integral Resource Center
P.O. Box 7414
Berkeley, CA 94707
(510) 524-2567

Pest Management in the Vegetable Garden

Purchase price: \$25

Available from:

Colorado State University
Bulletin Room
171 Aylesworth SW
Fort Collins, CO 80523

Periodicals

The resources listed below often print articles about beneficial insects, insect pests and pest management. See the *Periodicals* section of this guide for more information.

American Journal of Alternative Agriculture
Common Sense Quarterly
HortIdeas
IPM Laboratories Quarterly
IPM Practitioner
Journal of Pesticide Reform
Journal of Sustainable Agriculture
The New Farm
PNW Sustainable Agriculture

Computer Population Models (Pest Loss Models)

Codling Moth Management Using Degree Days

C. Pickel, R.S. Bethell and W.W. Coates
1986

A computer program designed to assist in determining potential losses from codling moths based on temperature. Request UC IPM Publication number 4. No charge.

Manual for Research Version of the Generalized Population Model

J.G. Morse and A. Strawn 1987

A model developed for the UC IPM Computer System. Request UC IPM Publication number 2. No charge.

User's Manual for Degree-Day Utility

J.G. Morse and A. Strawn 1987

A program on the Statewide UC IPM computer system. Request UC IPM Publication number 3. No charge.

For more information about all three models contact:

IPM Education and Publications
University of California
Davis, CA 95616

Codling Moth Control: A New Tool for Timing Sprays

Washington State University Publication number EB 1072 25¢

See the *University Resources* section of this guide for ordering information.

Pests and Pest-Loss Models

Agrotechnology Transfer No. 8 October 1988

Reprinted and distributed by:

IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331-3904
(503) 737-3541

University of California Integrated Pest Management Program

The University of California has a State-wide Integrated Pest Management Program that has been in existence for over ten years. The project's prime goals are: to reduce the pesticide load in the environment; increase the predictability and thereby the effectiveness of pest control techniques; develop pest control programs that are economically, environmentally, and socially acceptable; assist agencies with integrated pest management programs; increase the utilization of natural pest controls.

The project has about two dozen permanent staff members. The implementation staff includes eight area farm advisors situated in regional offices. The computer network produces and runs an integrated pest management database called IMPACT (see the *Computer Programs and Databases* section of this guide for more information). The education and publications group has a director, three senior writers, a pesticide training coordinator, a farmworker safety coordinator, and support staff.

Pest Management Guidelines

Also available from California farm advisors offices and the IMPACT computer. The Guidelines are the official California guidelines for monitoring techniques, pesticide use, and alternatives to pesticides in agricultural crops for the following crops: almonds, apples, apricots, cherries, dry beans, figs, grapes, lettuce, peaches, pears, pecans, potatoes, prunes and plums, tomatoes, walnuts. \$80 for the first set; guidelines will be updated yearly; the initial fee includes a free subscrip-

tion to all updates and new material for one year. \$35 for subsequent annual update subscriptions. Publication No. 3339.

Grape Pest Management Publication No. 3343. \$68

The following IPM Manuals sell for \$17 each, including tax and postage:

Integrated Pest Management for Almonds Publication No. 3308

Integrated Pest Management for Cole Crops and Lettuce Publication No. 3307

Integrated Pest Management for Potatoes Publication No. 3316

Integrated Pest Management for Tomatoes Publication No. 3274

Integrated Pest Management for Walnuts Publication No. 3270

All available from:

ANR Publications
University of California
6701 San Pablo Avenue
Oakland, CA 94608-1239
(510) 642-2431

General Sources of Information on IPM**Libraries and literature collections**

University and Public Libraries (see the *University Resources* section of this guide for more information)

Alternative Farming Systems Information Center (see the *Organizations* section of this guide)

Databases

For more information refer to the *Databases and Computer Software* section of this guide.

Agricola
CompuServe
IMPACT

Organizations

See the *Organizations* section of this guide for more information

Appropriate Technology Transfer for Rural Areas (ATTRA)
Bio-Integral Resource Center ((BIRC)
County Extension Offices
Northwest Coalition for Alternatives to Pesticides

Trap Crops, Intercropping and Crop Rotations

Plants can function as decoys by luring pests away from valuable crop plants or by repelling them. These "trap plants" can be placed around the crop, either between or within rows. By altering plant texture, color, or other characteristics, the insect pests can be confused and dispersed. Crops can be followed by other crops which have detrimental effects on target pests. Although there are few printed resources devoted solely to this topic, the following are sources of information on the subjects. For further information see the chart on pages 420-421 in the *Encyclopedia of Natural Insect and Disease Control* book listed in the General References Section of the *Pest Management* section at the beginning of this chapter.

Bibliographies

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for "QB" ordering information.

Complimentary Interactions Between Weeds, Weed Control Practices and Pests in Horticultural Cropping Systems R.D. William HortScience 16:0 1981

Double Cropping and Interplanting Quick Bibliography Series No. 89-97 1/87-5/89
Breeding and Selecting Crops for Insect Pest Resistance 1/83-6/88 Quick Bibliography Series No. 89-75

Traps, Pheromones, and Vacuums

Many different types of physical traps and barriers are commercially available to aid in insect management. Pheromones have been described as chemical signals produced by insects that have a specific effect on members of their own species. These substances can evoke many responses from other insects including aggregation, alarm, trail following, defense, feeding and reproduction. Pheromones can be utilized in pest management systems in the following manners:

1. Trapping for detection, monitoring and surveying insect populations.
2. Monitoring for levels of insecticide resistance using pheromones as attractants.
3. Luring insects to areas treated with insecticides or biological agents of destruction such as pathogens or protozoa which are spread to the remaining pest population by the treated individuals.
4. Mass trapping for population suppression.
5. Disrupting communication within the insect population by permeating of the atmosphere with a pheromone. When sex pheromones are used, mating disruption should result in population suppression.

For a thorough discussion of pheromones see "Pheromones: Their Potential Role in Control of Agricultural Insect Pests," by Phillip Kirsch in the *American Journal of Alternative Agriculture*, 1988. Vol. 3, Nos. 2 & 3, pp. 83-97.

General References

Insect Pheromones in Plant Protection

A.R. Jutsum and R.F.S. Gordon 1988
Published by:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-1272
(800) 879-4539
\$109

Extension Publications

See the *University Resources* section of this guide for OSU, WSU, PNW, and University of California publications ordering information. Be sure to include the publication number when ordering.

Washington State University Extension Publications

Codling Moth Control - A New Tool for Timing Sprays EB 1072 1982 25¢

Insect Publications and Extension Entomologists CO 921 No Charge

Oregon State University Extension Publications

The Strawberry Crown Moth: A Pest of Strawberries and Caneberries 1984 EC 1175

Managing Leafrollers on Caneberries in Oregon 1988 EC 1263

Selecting and Monitoring Pheromones Traps in Insect Pest Management December 1984 EC 1207

Extension Publications from other Universities

Insect Attractants and Traps February 1990. University of Illinois EC 1297. From the "Alternatives in Insect Management" series. \$2.

Available from:

Office of Agricultural
Communications and Education
69-04 Mumford Hall
1301 West Gregory Drive
Urbana, IL 61801

A few examples of other types of traps that are not associated with pheromone use are given below.

- Copper strips--barriers against slugs and snails
- Peat paper plant collars--barriers against cabbage root maggot and other pests
- Spiral tree guards--protects plants against small vertebrate pests, mechanical damage, and sun scald
- Tanglefoot--a non-toxic sticky barrier

Developers, Manufacturers, and Distributors of Insect Attractants, Traps and Related Supplies

Adapted, with permission, from a table in *Alternatives in Insect Management, Insect Attractants and Traps*, University of Illinois at Urbana-Champaign. Additional companies produce attractants and traps; no endorsement or discrimination is intended by the listing presented here.

Companies specializing in pheromone identification and formulation

Bedoukian Research, Inc.
Finance Drive
Danbury, CT 06810

Bend Research, Inc.
64550 Research Road
Bend, OR 97701

Frank Enterprises, Inc.
700 Rose Avenue
Columbus, OH 43219

Provesta Corporation
14 C4 Phillips Bldg.
Bartlesville, OK 74004

Distributors (retailers) of attractants, traps,
and supplies

Aeroxon Products, Inc.
P.O. Box 249
3 Cottage Place
New Rochelle, NY 10802

Beneficial Biosystems
1603 - 63rd St.
Emeryville, CA 94608
(415) 655-3928

Dewill, Inc.
61 S Herbert Road
Riverside, IL 60546

Down to Earth
P.O. Box 494
Eugene, OR 97440
(503) 342-6820

Farmer Seed & Nursery Co.
818 NW 4th St.
Faribault, MN 55021
(507) 334-1623

Great Lakes IPM
10220 Church Rd. NE
Vestaburg, MI 48891
(517) 268-5693

Growing Crazy
P.O. Box 8
Tawas City, MI 48764-0008
(517) 362-4201

Gurney Seed & Nursery Co.
3916 Page St.
Yankton, SD 59079

Harmony Farm Supply
P.O. Box 451
Graton, CA 95444
(707) 823-9125

Insects Limited, Inc.
Jessup Blvd.
Indianapolis, IN 46280

Iselin and Associates
4520 S Juniper
Tempe, AZ 85282

Kenco Chemical Mfg. Corp.
P.O. Box 6246
Jacksonville, FL 32236
(904) 359-3005

Mellinger's
2310 W South Range Road
North Lima, OH 44452
(216) 549-9861

Natural Gardening Research Center
P.O. Box 300
Sunman, IN 47041
(812) 623-3800

Nature's Way Products
Earlee, Inc.
726 Spring St.
Jeffersonville, IN 47130
(812) 289-9134

The Necessary Trading Co.
602 Main St.
New Castle, VA 24127
(703) 864-5103

Oregon Organics
7566 Perrydale Loop
Amity, OR 97101
(800) 227-8979

Peaceful Valley Farm Supply
P.O. Box 2209
Nevada City, CA 95959
(916) 272-4769

Pest Management Supply Co.
P.O. Box 938
Amherst, MA 01004

Pest-Select International
P.O. Box 11646
Phoenix, AZ 85017
(800) 343-1164
(602) 233-1772

J. L. Price Products, Inc.
P.O. Box 9
South Milwaukee, WI 53172
(414) 764-4670

W. A. Rapp & Son, Inc.
2031 S Eastwood St.
Santa Ana, CA 92705
(714) 540-5805

Santa Cruz Horticultural Supply
220 Chestnut St.
Santa Cruz, CA 95060
(408) 423-8896

Sterling International
15916 Sprauge Ave.
Veradale, WA 99037
(509) 926-6766

Manufacturers of attractants and traps

AgriSense
4230 W Swift, Suite 106
Fresno, CA 93722
(209) 276-7037

Almac Plastics, Inc.
6311 Erdman Ave.
Baltimore, MD 21205
(301) 485-9100

Biocontrol Ltd.
538 "I" Street
Davis, CA 95616

Consep Membranes, Inc.
P.O. Box 6059
Bend, OR 97708
(800) 367-8727 outside Oregon
(503) 388-3688 in Oregon

Grain Guard
205 Legion St.
Verona, WI 53593

Health Chem Corp.
1107 Broadway
New York, NY 10010
(212) 691-7550

Heron Environment Co.
Aberdeen Road
Emigsville, PA 17318
(212) 691-7550

Ladd Research Industries
P.O. Box 1005
Burlington, VT 05402

Olson Products
P.O. Box 1043
Medina, OH 44258

Pherotech, Inc.
1140 Clark Drive
Vancouver, B.C. Canada V5L 3K3

Reuter Laboratories
8450 Natural Way
Manassas Park, VA 22111

Scentry, Inc.
P.O. Box 426
Buckeye, AZ 85326
(602) 233-1772

Summit Chemical Co.
117 W 24th St.
Baltimore, MD 21218
(301) 467-1233

Trece, Inc. (formerly Zoecon Corp.)
635 S Sanborn Road, Suite 17
Salinas, CA 93901
(408) 758-0205

Wood Stream Corp.
Front & Locust Sts.
Lititz, PA 17543
(717) 626-2125

Table 1. Guidelines for using pheromone traps to monitor insect pests in Oregon. Reprinted with permission from *Selecting and Monitoring Pheromone Traps in Insect Pest Management*, Oregon State University publication number EC 1208.

Pest	Trapping period	Trap number, placement	Manufactur., trap style, lure replacement interval	Monitoring frequency	Interpretation comments
Alfalfa looper, <i>Autographa californica</i> (Speyer)	Apr 1-Aug 30	1 trap per 5 acres, minimum of 2 per field. Hang from stake at level even with top of crop.	Bend Research Biolure: 20 wk Trece Pherocon 1C: 4 wk	1/wk	Follow trap captures by sampling for eggs and/or larvae.
Beet armyworm, <i>Spodoptera exigua</i> (Hubner)	Apr 1-Aug 30	1 trap per 5 acres, minimum of 2 per field. Hang from stake at level even with top of crop.	Trece Pherocon 1C: 4 wk	1/wk	Sample for larvae, beginning 7-14 days after first moths are trapped.
Black cutworm, <i>Agrotis ipsilon</i> (Hufnagel)	Apr 1-harvest	1 trap per 5 acres, minimum of 2 per field. Hang from stake at level even with top of crop.	Trece Pherocon 1C: 4 wk	1/wk	Sample for larvae, beginning 7-14 days after first moths are trapped.
Cabbage looper, <i>Trichoplusia ni</i> (Hubner)	Apr 15-Aug 30	1 trap per 5 acres, minimum of 2 per field. Hang from stake at level even with top of crop.	Pest-Select Scentry Wing: 9 wk Bend Research Biolure: 16 wk Trece Pherocon 1C: 4 wk	1 or 2/wk	Sample for eggs as soon as moths are captured, or begin larval sampling 2 weeks after moths are trapped.
Diamondback moth, <i>Plutella xylostella</i> (L.)	May 1-Sept 15	1 trap per 5 acres, minimum of 2 per field. Hang from stake at level even with top of crop.	Trece Pherocon 1C: 4 wk	1/wk	Sample for eggs and larvae beginning 2 weeks after first moths are trapped.

(continued)

Pest	Trapping period	Trap number, placement	Manufactur., trap style, lure replacement interval	Monitoring frequency	Interpretation comments
Corn earworm, <i>Heliothis zea</i> (Boddie)	May 1-Sept 15 (presilking though harvest in corn)	2 traps per field. Attach to tall stake so that bottom opening is level with top of crop canopy.	Pest-Select Scentry Heliothis: 7-10 days Bend Research Biolure: 16 wk Trece	2/wk	If any moths are captured, sample silks for eggs (beginning at 10% silk). Repeated insecticide applications are needed when eggs are present.
Variegated cutworm, <i>Peridroma saucia</i> Hubn.	May 1-Sept 15	1 trap per 5 acres, minimum of 2 traps per field. Hang from stake at level even with top of crop.	Trece Pherocon 1C: 4 wk	1/wk	Sample for eggs and larvae beginning 1 week after first moths are trapped.
Cranberry girdler webworm), <i>Chrysoteuchia topiaria</i> (Zeller)	June 10-June 20	<i>Grass seed fields</i> : 1 trap per 20 acres; minimum of 2 traps per field. Stake at level even with top of crop canopy. Place where damage usually occurs first (well-drained ridges, etc.); rotate to new sites daily.	Trece Pherocon 1C: lure replacement unnecessary	Check and move traps daily (also replace sticky trap bottoms)	<i>Grass seed fields</i> : Varieties differ greatly in cranberry girdler susceptibility; an average of 40-50 moths per trap per day for 5 or more days (June 10-June 20) usually indicates a damaging population. Apply insecticides for adult control, usually June 15-June 20.

Bug Vacs

Strawberry, lettuce and grape growers are on the leading edge of one mechanical option in pest management, pest-vacuuming. The concept is derived from the backpack insect vacuum developed in the early 1960's for sampling insects. Pest vacuums range from the hand held "dust buster" types which sell for about \$25-\$40, to the massive "Salad Vac" which costs about \$80,000. Although the technology does not work on all crops or pests, numerous successes have been documented on specific pests of certain crops.

The Bug Vac was introduced on strawberry farms primarily in the Watsonville, Salinas, and Santa Maria, California areas for lygus bug (*Lygus spp.*) management. The machine is a tractor with a number of front mounted vacuums that hover over the tops of strawberry plants. This "Bug Vac" spans four rows of strawberries. Substituting the vacuuming for chemical control has allowed strawberry farmers to introduce integrated forms of pest management for the western flower thrip and two-spotted spider mite. Unlike the Bug Vac, the more powerful and costly Salad Vac spans eight rows of lettuce. The machine consists of eight hydraulically-driven vacuum fans mounted on the tractor front. The Salad Vac is not specific, sucking up whatever lies in its path, including beneficial insects, pests, soil, lettuce leaves and even worms. Presently, the Salad Vac has been more successful on the more open-leaf lettuce varieties. Lettuce farmers hope the vacuums will prove an economically practical management technique for whiteflies, aphids and other lettuce pests.

Less expensive and more versatile vacuums are being designed all over the country. Grape growers in California are using vacuum technology to aide in leafhopper management. These machines, called "Vac U's", surround two vine rows with a system of six vacuum heads, two on top and four on the sides. The vacuums are calibrated to suck up only leaf-

hoppers. There are three different models, one pulled and two that are pushed.

In Massachusetts a "Beetle Eater" has been developed. This four row vacuum was originally designed to target the Colorado potato beetle on potatoes and can be used on peas, peppers, and various beans. This same company has also developed a one row version of this vacuum for use in strawberries.

Suppliers of insect vacuuming devices

Hand-held and backpack varieties:

BioQuip Products
17803 South La Salle Avenue
Gardena, CA 90248
(213) 324-0620

D-Vac Company
P.O. Box 2506
Ventura, CA 93002
(805) 643-2325

"Houdini" Hand-held Insect Vacuums:

Bilou, Inc.
P.O. Box 7
Farmington, WA 99128
(509) 287-2000

Designed for greenhouses, uses disposable cartridges (cost: about \$1 each). Sells for about \$36

Peaceful Valley Farm Supply
P.O. Box 2209
Nevada City, CA 94607
(916) 272-4769

Bug Vacs:

McCluney Manufacturing, Inc.
28 Morehouse Drive
La Selva, CA 95076
(408) 722-2194

Beetle Eaters:

Thomas Equipment LTD
P.O. Box 130
Centreville, New Brunswick
Canada EOJ 1HO
(506) 276-4308

Periodicals that contain information on Bug Vacs

The periodicals listed below sometimes print articles about bug vacs. See the *Periodical* section of this guide for more information.

American Journal of Alternative Agriculture
IPM Practitioner
Journal of Pesticide Reform
The Growers Edge
The New Farm

Alternative Pesticides

Alternative pesticides encompass a wide range of compounds. Nomenclature for these compounds is as varied as the materials themselves. This is not intended to be a user's guide to pesticides. Substances included here are microbial pesticides such as *Bacillus thuringiensis*, whose active components are microbes such as bacteria, fungi or viruses that are directly applied to the soil or plants. Some products that have been newly marketed in the United States have been included, such as beneficial nematodes. Because ample information is available on traditional agrichemicals such as organo-phosphates, carbamates, phenoxy, chlorinated hydrocarbons and botanicals that have been used in the United States for over a decade these have been excluded here.

General References**Botanical Insecticides and Insecticidal Soaps**

University of Illinois at Urbana-
Champaign 1989

An Extension Circular (No. EC 1296) from the "Alternatives in Insect Management" series. \$2.

Available from:

Office of Agricultural
Communications and Education
69-04 Mumford Hall
1301 West Gregory Drive
Urbana, IL 61801
(217) 333-1000

Bt for Biocontrol A Quick Bibliography from the National Agriculture Library. QB 90-92. For more information see the Alternative Farming Systems Information Center in the *Organizations* Section of this guide.

Microbial Insecticides An Extension Circular from the University of Illinois at Urbana-Champaign EC 1296 from the *Alternatives in Insect Management* series, September 1989. \$2 (see address listed above)

Grub Attack (milky spore disease) The bacteria is applied as a powder to soil. Target pests are the grubs of the Japanese beetle, rose chafer, oriental beetle, and certain May and June Beetles.

Manufactured by:

Ringer Corporation (see address above)

Nolo Grasshopper Bait A bait of made from wheat bran containing a grasshopper-parasite (*Nosema locustae*).

Manufactured by:

Evans Biocontrol Inc.
895 Interlocken Parkway
Broomfield, CO 80020
(303) 460-1780

BioSafe N A formulation containing *Steinernema carpocapsae*, a beneficial nematode, as the active ingredient to control immature stages of black vine weevil and strawberry root weevil in cranberry fields. The nematodes are placed on a non-toxic polymer and packed inside a mesh bag. Formulated to be applied through conventional irrigation systems as well as back pack sprayers.

Manufactured by:

Biosys
1057 East Meadow Circle
Palo Alto, CA 94303
(415) 856-9500

Microbials

Below is a list of some new, improved or different formulations and strains of *Bacillus thuringiensis* Berliner products. This list is not intended to be a complete list of Bt products.

Certan var. aizawai A water dispensable liquid concentrate to be used for wax moth management in beehives. Produced by the Sandoz Crop Protection Corporation.

Condor var. kurstaki Target pests include larvae of the gypsy moth and spruce budworm. Manufactured by Ecogen.

Dipel 2X WP var. kurstaki Registered for forage crops, berries, bulbs, vegetables, ornamentals, fruit crops, and tropical fruits. Target pests are the larvae (caterpillars/worms) of many lepidopterous insects including the imported cabbage worm. Manufactured by Abbott Laboratories.

Gnatrol var. israelensis Target pests are the larvae of mosquitos, blackfly and fungus gnats. Manufactured by Abbott Laboratories. Other formulations of var. israelensis are Bactimos Briquets manufactured by PBI/Gordon Corporation; and Mosquito Attack and Attack Rings manufactured by the Ringer Corporation.

Javelin var. kurstaki A more efficacious strain of var. kurstaki targets armyworms as well as other Lepidopterous larvae. Registered for more than 50 crops including jojoba, peanuts, soybeans, sunflower, tobacco, and grapes. Manufactured by the Sandoz Crop Protection Corporation.

M-One var. san diego Target pests are the larvae of Colorado potato beetles and the elm leaf beetle. Manufactured by Mycogen. Trident, also registered for the Colorado potato beetle, is manufactured by Sandoz Crop Protection Corporation.

Sod Webworm Attack WP This formulation is effective against sod webworm in lawns. Manufactured by the Ringer Corporation.

Soilserv Bacillus Pellets A bait composed of corn, cottonseed meals and sweeteners. Target pests are cutworms and other Lepidopterous larvae. Manufactured by Soilserv Inc.

Microbial Insecticide Manufacturers' Addresses

Abbott Laboratories
Western Regional Offices
1540 East Shaw, Suite 123
Fresno, CA 93701
(209) 277-2926

Ecogen Inc.
2005 Cabot Blvd. West
Langhorne, PA 19047
(215) 757-1590

Mycogen Corporation
1413 Lone Tree Lane
Roseville, CA 95661
(916) 773-0621

Novo Laboratory Inc.
33 Turner Road
Danbury, CT 06810
(800) 252-6686

PBI Gordon Corporation
1217 West 12th Street
Kansas City, MO 64101
(816) 421-4070

Ringer Corporation
9959 Valley View Road
Minneapolis, MN 55344
(612) 941-4180

Sandoz Crop Protection Corporation
1300 East Touhey Avenue
Des Plaines, IL 60018
(312) 699-1616

Soil Serve
1427 Abbot Street
Salinas, CA 93901
(408) 422-6473

Beneficial Organisms

Beneficial organisms are a valuable tool in pest management. Insect identification, monitoring, and a dependable source of beneficials are vital components when employing beneficial organisms in pest management. Beneficial organisms can include parasitic insects, predator mites, spiders, and pathogenic bacteria, fungi as well as other organisms. Knowledge of the biology and ecology of these organisms and the pests they attack can enhance the success of pest management systems.

General References

Arthropod Biological Control Agents and Pesticides

Brian A. Croft 1990

Written in textbook form, the book contains detailed technical information on the effects of combining pesticides and beneficial organisms in pest management systems. Chemical, physiological, genetic, environmental, and managerial aspects are discussed. \$89.95.

Published by:

John Wiley and Sons Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08873
(800) 879-4539

Biological Control by Natural Enemies

Paul Debach 1974

The book traces the history of biological control. Pesticide roles in the ecology of pest management are discussed. The text is generously illustrated and contains a bibliography. \$15.95 Softcover; \$52.50 Hardbound.

Published by:

Cambridge University Press
32 East 57th Street
New York, NY 10022

Biological Pest Control: The Glasshouse Experience

N.W. Hussey and Nigel Scopes, Editors
1985

The primary focus of the book is greenhouse systems of Europe, but the profiles of common greenhouse pests and beneficials used in pest management may be applied to many greenhouse operations. This book can be used as a guide to design site-specific management programs. Color and black and white photographs are included. \$25.

Published by:

Cornell University Press
P.O. Box 6525
Ithaca, NY 14851

**Biological Pest Management for Interior
Plantscapes**

M.Y. Steiner and D.P. Elliot

Detailed information on the biological control of many greenhouse pests. Information on the biology of the pests and beneficials and color pictures may be helpful in designing pest management systems. No Charge.

Published by:

The Entomology Section
Alberta Environmental Centre
Vegreville AB T0B 4L0
Canada
(403) 632-6761

**Complete Guide to Pest Control, With and
Without Chemicals**

George W. Ware 1980

How-to information about pest control in a simple, non-technical style. Information about chemical and non-chemical tools, and ecology of common pests are included. Sources of pests controls, a directory of State Cooperative Extension Services and a U.S./Metric conversion chart are included. \$22.50.

Published by:

Thomson Publications
P.O. Box 9335
Fresno, CA 93791
(209) 435-2163

Handling Beneficial Organisms on the Farm

Kenneth Hagen, John Plain, and Bob Wise

Available in English and Spanish, the videotape informs farmers about handling shipments of live beneficial insects, making it easier for them to use these management techniques on the farm. \$23, includes tax, shipping, and handling.

Published by:

Videowise
2156 North Fine
Fresno, CA 93727
(209) 251-8668

Principles of Biological Pest Controls

A videotape with information about the history of classical biological controls and advances underway prior to the use of DDT. Practical applications are discussed. Video tape no. 8017. \$15.

Published by:

Natural Organic Farmers Association
Video Project
RFD #2
Barre, MA 01005
(508) 355-2853

**Shepherd's Purse: Organic Pest Control
Handbook for Home and Garden**

Designed for field identification and organic management of pests this handbook includes detailed colored drawings and descriptions of pest life-cycles. 1987. \$5.95.

Published by:

Book Publishing Company
P.O. Box 99
Summertown, TN 38483

**Pacific Northwest Suppliers of
Beneficial Organisms**

Down to Earth
500 Olive Street
Eugene, OR 97401
(503) 344-6357

Hellide of Oregon
9220 SE Stark
Portland, OR 97216
(503) 256-2400

Hydro Tech
10929 NE Sandy Blvd.
Portland, OR 97220
(503) 253-4097

Light Manufacturing
1634 SE Brookland
Portland, OR 97202
(503) 231-1582

Nature's Control
P.O. Box 35
Medford, OR 97501
(503) 899-8318

Northwest Garden Center
9915 SE Foster
Portland, OR 97266
(503) 771-6404

Organic Pest Management
P.O. Box 55267
Seattle, WA 98155
(206) 367-0707

Rain or Shine
886 West Sixth Street
Eugene, OR 97402
(503) 484-7467

Territorial Seeds
P.O. Box 27
80030 Territorial Road
Lorane, OR 97451
(503) 942-9547

Directories of Suppliers of Beneficial Organisms

Biological Control Agents and Where to Find Them A. Dreves and G.C. Fisher. 1989. OSU Extension Circular 1328. 75¢. See the *University Resources* section of this guide for ordering information.

Directory of Producers of Natural Enemies of Common Pests

Published annually in the *IPM Practitioner*.

For more information contact:

BIRC Publications
Box 7414
Berkeley, CA 94707
(510) 524-2567

Resources for Organic Pest Control

Published by:

Organic Gardening Magazine
Rodale Press
33 East Minor Street
Emmaus, PA 18098
(215) 957-5171
\$1

Suppliers of Beneficial Organisms in North America

California Department of Food and
Agriculture 1992 (second edition)

A listing of beneficial organism suppliers including ladybugs, lacewings, mosquito fish, parasitic nematodes and more. The booklet is indexed to help match suppliers with specific natural enemies they sell. Single copies are available free.

Available from:

Department of Pesticide Regulation,
Environmental Monitoring, & Pest
Management Branch
Attn: Beneficial Organisms Booklet
1220 N Street
P.O. Box 942871
Sacramento, CA 94271-0001
(916) 654-1141

Extension Publications

See the *University Resources* section of this guide for ordering information. Be sure to include the publication number when ordering.

Oregon State University Extension Publications

Biological Control of Insects and Weeds in Oregon TB 90

Introduction to Biological Pest Control in Greenhouses EC 1376. July 1991

Washington State University Extension
Publications

**Beneficial Predators and Parasites Found on
Washington Crops** EB 0640 25¢

Insect Publications and Entomologists
EC 0921 No charge

Organic Gardening EC 0648

Lady Beetles EB 1146 25¢

Minute Pirate Bug EM 3702 25¢

Big-Eyed Bugs EM 3703 25¢

Hover or Syrphid Flies EM 3704 25¢

Green Lacewing EM 3706 25¢

Black Blister Beetle EM 3813 25¢

Pacific Northwest Extension Publications

**Beneficial Organisms Associated with Pacific
Northwest Crops** PNW 343 January 1990
\$1.

University of California Publications

Natural Enemies are Your Allies Poster The
colorful, 17 by 24-inch poster shows close-ups
of 20 beneficials. Produced by the UC
Integrated Pest Management Project. \$5.

University of Illinois at Champaign-Urbana

Beneficial Insects and Mites Extension
Circular 1298. Part of the "Alternatives in
Insect Management" series. March 1990. \$2.

Available from:

Agricultural Communications and
Education
69-04 Mumford Hall
1301 Gregory Drive
Urbana, IL 61801
(217) 333-1000

NOTES

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only thing that ever has."

Margaret Mead

Nematode Management

General References
Biological Options
Extension Publications
Periodicals

General References

Bibliography of Nematode Ecology, Volumes I and II

Ecology Committee, Society of
Nematologists

The bibliographies include information regarding technical research on nematode ecology from 1960 through 1980 (Volume I) and 1981 through 1986 (Volume II). They are provided to members of the Society of Nematologists. They may be reviewed or purchased.

For more information contact:

Dr. Russ Ingham
Botany and Plant Pathology
Department
Oregon State University
Corvallis, OR 97331
(503) 737-3451

Introduction to Plant Nematology (Second Edition)

Victor H. Dropkin 1989

The book describes the structure and physiology of nematode parasites of plants. Detailed information on soils, diseases induced by nematodes, ecology and plant resistance is included. \$44.95.

Publisher:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Plant and Insect Nematodes

William R. Nickle, Editor 1984

A general reference book organized into chapters by crops rather than by nematode types. Each chapter contains detailed discussions on the important nematode pathogens for the listed crop. \$185.

Publisher:

Marcel Decker, Inc. Press
270 Madison Avenue
New York, NY 10016
(800) 228-1160

Principles and Practice of Nematode Control in Crops

R.H. Brown and B.R. Kerry, Editors 1987

A general reference book on nematodes. The book includes practical information on analysis and prediction of nematode problems to assist in management decisions, biological control, and crop resistance and tolerance to nematodes. Principles of nematode control and chemical control measures are also discussed.

Publisher:

Academic Press Inc.
1250 Sixth Avenue
San Diego, CA 92112
(714) 459-1743

Nematodes

Deborah Wechsler 1988

An introductory article about nematodes was published in the September 1988 issue of *National Gardening*. Identification of nematode problems, nematode biology, and alternative methods of controlling nematodes are discussed.

Publisher:

National Gardening Association
180 Flynn Avenue
Burlington, VT 05401

Biological Options

The addition of organic amendments and soil solarization are two biological control methods that have been employed in nematode management. Little research has been done to reveal how and why these methods work or do not work. The use of cover crops and crop rotations for nematode management have been widely employed. Unfortunately, little information regarding biological control of nematodes has been consistently documented or published, as the following list attests.

ClandoSan 618

The active ingredient in this nematicide is chitin. Inactive ingredients include an organic buffer, minerals and urea which may exclude its use by certified organic farmers. Clandosan 618 acts to stimulate growth of soil microorganisms, such as fungus-like actinomycetes, bacteria, and fungi. These microorganisms produce chitinase and other enzymes that breakdown the chitin in the eggshells of plant pathogenic nematodes. This pesticide is registered for most agricultural crops, ornamentals and lawns. See the product label for complete information.

Producers:

Igene Biotechnology, Inc.
9110 Red Branch Road
Columbia, MD 21045
(301) 997-2599

Nematrol

A nematicide that consists of ground and pelletized sesame stalks. It is produced by a California farmer who noticed a significant reduction in nematode problems in fields being grown following sesame in rotation. It has been approved by the Environmental Protection Agency.

Contact:

Bob McBrayer
4350 East Acampo Road
Acampo, CA 95220

New Bt-Produced Biotoxins

Mycogen Corporation announced in the February 1991 issue of the *Fruit Grower* that they have discovered novel strains of *Bacillus thuringiensis* (Bt) that are toxic to plant parasitic nematodes. The biotoxins will most likely reach commercial markets in plants genetically engineered to be resistant to nematodes.

Developed by:

Mycogen Corporation
1413 Lone Tree Lane
Roseville, CA 95661
(916) 773-0621

Extension Publications

See the *University Resources* section of this guide for information regarding ordering OSU, WSU, PNW, and University of California publications.

Oregon State University Extension Publications

Bibliography of Nematode Interactions with Other Organisms in Plant Disease Complexes SB 623

Indexed Bibliography of Nematode-Resistance in Plants SB 639

Small Fruit Pests: Biology, Diagnosis and Management WAEB 1388

Washington State University Extension Publications

Root Knot in Potatoes EM 2938 25¢

Sampling for Nematodes in the Soil EB 1379 25¢

Pacific Northwest Extension Publications

Root-Knot Nematodes of the Pacific Northwest PNW 190 25¢

University of California Agricultural
Publications

General Recommendations for Nematode

Sampling 1981 How to sample population density. Publication No. 21234 \$1

Nematodes 1981 Damage, symptoms, distribution, detection, sampling, and control of cyst, root-knot, and other nematodes. Publication No. 3272 \$3

Phytonematology Study Guide 1985 A manual of practical nematology in California, featuring host lists, nematode life cycle, damage, sampling, and control. Publication No. 4045 \$5

Periodicals

The following periodicals occasionally feature articles on management practices for plant parasitic nematodes. More information on these references can be found in the *Periodical* section of this guide.

The Common Sense Quarterly
HortIdeas
The IPM Practitioner
National Gardening
The New Farm

NOTES

*"God in His wisdom made the fly
And then forgot to tell us why."*

Ogden Nash



SOILS

General References
Soil Fertility, Fertilizers, and
Soil Amendments
Soil Testing and Plant Analysis
Soil Conservation and Erosion
Management
Windbreaks

Long-term productivity of soils is of paramount importance to agriculture. With the cultivation of virgin soils in the U.S. over the last 100 to 200 years there have been measurable losses in soil organic matter, erosion of top soil, salinization, and increased compaction. These problems are not universal, nor are they found to the same degree in every agricultural region or cropping system. With the exception of severely eroded land, crop productivity has thus far been maintained by use of inorganic fertilizers in spite of the other negative impacts on soil chemical and physical properties. Nonetheless, there is agreement that addition of organic amendments such as animal manures, crop residues and crop rotations to build organic matter is a goal the agricultural community should strive to meet.

To develop cropping systems that are more dependent on the internal resources of the farm and less dependent on external inputs, improved management of soils is critical. This section of the guide provides sources of information on managing soils toward these goals. Information includes efficient use of commercial fertilizers and organic soil amendments, and soil conservation. The resources listed in the "General References" section provide an excellent background on the role of soils in maintaining the natural resource base. Information about cover crops and crop rotations is included in the *Vegetation Management* section of this guide.

General References

Biological Interactions in Soil

C.A. Edwards, B.R. Stinner, D. Stinner,
and S. Rabatin 1988

Biology of soil-inhabiting invertebrates and microorganisms in relation to plant growth addressing is reviewed. Both basic and applied approaches are addressed. \$134.25.

Published by:

Elsevier Science Publishing Co. Inc.
P.O. Box 882, Madison Square
Station
New York, NY 10159
(212) 633-3650

Earthworms: Their Ecology and Relationships with Soils and Land Use

Kenneth E. Lee 1985

Discusses earthworms' physical and chemical environment; phenology; predators, parasites, and pathogens; physical and chemical effects on the soil; land use practices; use for waste disposal; and use as an animal feed protein source. \$82.

Published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 92101
(619) 231-0926

The Nature and Properties of Soils

N.C. Brady 1984

This classic soils text book includes a broad-perspective introduction followed by discussions of physical and chemical properties of soils; water behavior in soils; soil organisms; nutrient and fertilizer relationships; erosion; and chemical pollution of soils. \$61.95.

Out of the Earth: Civilization and the Life of the Soil

Daniel J. Hillel 1990

Hillel, a world-renowned soil scientist, provides a historical perspective on human's relationship with the soil and implications of mismanagement of soils on civilizations. Articulates the perspectives on the present crisis of long-term sustainability of the natural resource base in a readable and easily understood style. \$22.50 (hardbound).

Both published by:

Macmillan Publishing Company
866 Third Avenue
New York, NY 10022
(800) 257-5755

The Role of Microorganisms in a Sustainable AgricultureJ.M. Lopez-Real and R.D. Hodges, Editors
1986

A variety of authors discuss the influence of microbes such as actinomycetes, decay fungi, mycorrhizal fungi, and antagonist bacteria on soil structure; organic waste recycling; nitrogen inputs; and biological control of microorganisms. \$44.

Available from:

agAccess
Box 2008
Davis, CA 95616
(916) 756-7177

The Role of Organic Matter in Modern Agriculture

Y. Chen and Y. Avnimelech 1986

A technical book detailing the many ways soil organic matter affects physical, chemical and biological properties of soil. Suppression of disease organisms, promotion of beneficial microorganisms, and plant nutrients are discussed. \$79.50.

Published by:

Kluwer Academic Publishers
101 Philip Drive Assinippi Park
Norwell, MA 02061
(617) 871-6600

Soil-Building Cropping Systems Conference Proceedings

AERO 1988

Proceedings from a farmer/scientist workshop held by the Alternative Energy Resources Organization (AERO). Information on cover crops and crop rotations applicable to the rain-fed cereal production areas of the northwestern U.S., including information on management strategies to increase soil organic matter. \$9.95.

Available from:

AERO
44 North Last Chance Gulch
Helena, MT 59601
(406) 443-7272

Soil Management for Sustainability

Robert Lal and F.J. Pierce, Editors 1991

Papers from a workshop held in Edmonton, Alberta in August of 1989. \$15.

Published by:

Soil and Water Conservation Society
7515 NE Ankeny Road
Ankeny, IA 50021-9764
(515) 289-2331

Soil Organic Matter: Biological and Ecological Effects

Robert Tate 1987

A technical overview of the function and behavior of soil organic matter in the ecosystem. The book outlines the nature and source of soil organic matter as well as organic matters effects on nutrient cycling, soil structure, trace metal mobility. Current environmental pollution and management is also discussed. \$44.95.

Published by:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Soil and Survival

Nancy Paddock, Jo Paddock and Carol Bly 1986

The links of soil to civilization, history, culture and the earth are discussed. A major contention of the authors is that protection of soil and water is not solely an engineering problem. Land stewardship is discussed in Native American, Jewish, and Christian cultures. A variety of perspectives are presented. \$19.95.

Published by:

Sierra Club Books
730 Polk Street
San Francisco, CA 94109
(415) 923-5603

Soils for Management of Organic Wastes and Waste Waters

L.F. Elliott and F.J. Stevenson, Editors 1977

Topics included: properties of wastes and wastewaters; chemical, physical, and biological properties of soils; effects of waste application on nutrient cycles; site selection, design, and transportation; special utilization and disposal problems; and environmental considerations. \$23.

Available from:

American Society of Agronomy
677 South Segoe Road
Madison, WI 53711-1086
(608) 273-8080

Soils and Soil Management

C. Sopher and J. Baird 1982

A good introductory soil science text which describes the physical and chemical nature of soils; soil nutrients; and classification and conservation. Soil use is discussed in the context of agricultural, engineering, urban, and recreational use. \$42.

Published by:

Prentice Hall
Route 9W
Englewood Cliffs, NJ 07362
(800) 922-0579

Soul of Soil: A Guide to Ecological Soil Management

Grace Gershuny and Joseph Smile 1986

A guide to ecological soil management with explanations of the science of soil fertility. \$8.50.

Available from:

Gaia Services
Box 84 RFD 3
St. Johnsbury, VT 05819
(802) 633-4152

Extension Publications

See the *University Resources* section of this guide for information regarding ordering OSU, WSU, PNW, and University of California publications.

Oregon State University Extension Publications

Agricultural Productivity Ratings for Soils of the Willamette Valley EC 1105

Agronomic Zones for the Dryland Pacific Northwest PNW 354

Capillary Flow in Agricultural Drainage SB 629

Effect of Dispersion Techniques on Mechanical Analysis of Oregon Soils TB 104

Model for Uptake of Organic Chemicals by Plants SB 677

Sandy Soil and Soil Compaction CI 687

Soil Evaluation for Subsurface Sewage Disposal EB 835

A Soil-Geomorphic Study in the Oregon Coast Range TB 89

Soil and Water Management for Home Gardens EC 824

Washington State University

Exchange Cations, Cation Exchange Capacity and Base Saturation, Soil Iron EM 2894 25¢

Soil Management in Yards and Gardens EB 1102 50¢

Soil Treatment Procedures for the Home Gardener EB 1158 25¢

Stalking the Hidden Horizon: The Making of a Soil Survey EB 1274 25¢

University of California Extension Publications

Compaction of Soil by Agricultural Equipment No. 1881. Causes of and solutions for soil compaction problems. No charge.

Diagnosing Soil Physical Problems No. 2664 50¢

How to Appraise Soil Physical Factors for Irrigated Vineyards No. 2946. Soil depth, texture, structure; how to compensate for soil physical property differences. \$1

Managing Compacted and Layered Soils No. 2635. Prevention and control of compaction. \$1

Managing and Modifying Problem Soils No. 2791 How to compensate for surface compaction, subsoil clay layers, and hardpan. \$1.25

Soil Physical Environment and How it Affects Plant Growth No. 2280 \$1

Storie Index Soil Rating No. 3203 50¢

Soil Fertility, Fertilizers, and Soil Amendments

Maintaining or increasing soil organic matter is important to the long-term productivity of soils. Soil organic matter: acts as a storehouse for nutrients, increases anion and cation exchange capacity, i.e. improves the ability of soil to hold inorganic nutrients such as ammonium, potassium, phosphate, calcium and sulfate for plant uptake; provides energy for microorganisms; increases water-holding capacity; stabilizes soil structure and tilth; and helps reduce soil compaction. Use of organic amendments such as animal manures, crop residues, cover crops and crop rotations can be methods to increase soil organic matter. Also, reduced tillage systems can have a positive effect on soil organic matter levels.

There are numerous alternative soil amendments on the market today. In this section we list resources to aid growers in selecting appropriate soil amendments and information about application methods.

General References

Biofertilizers in Agriculture

N.S. Subba Rao 1985

The book details applications and international research on biofertilizers. Biofertilizers are microbial inoculants of live or latent cells of nitrogen-fixing, phosphate solubilizing microorganisms that may enhance fertility. \$34.

Published by:

Grower Publishers Co.
Old Post Road
Brookfield, VT 05036
(802) 276- 3162

Composting Fish By-Products

William F. Brinton Jr. and Milton D. Seekins 1988

Information about on-farm composting of fish by-products is detailed in this book. \$15 plus \$2 shipping.

Fertile Soil - A Grower's Guide to Organic and Inorganic Fertilizers

Robert Parnes 1990

Parnes' book discusses relationships among organic residues, nutrients, soil, and plants. The controversy between organic and synthetic fertilizers is outlined. Information on nutrients and crop nutrient requirements are provided. \$29.95.

Organic and Inorganic Fertilizers

Woods End Laboratory 1989

Organic and inorganic fertilizers are compared. Major emphasis is placed on the importance of biological techniques and management of organic residues. \$15 plus \$2 shipping and handling.

All three of the above listed available from:

Woods End Agricultural Institute
Old Rome Road, Box 1850
Mt. Vernon, ME 04352
(207) 293-2457

Composting Observations in the Rodale Research Garden

Rodale Research Center 1988

A practical guide for composting without manure. Although the book is written primarily for gardeners, techniques may be adapted for use on small farms.

Composting of Poultry Litter, Leaves and Newspaper

Rodale Research Center 1990

A research report of work done at the Rodale Research Center. \$5.

Feasibility of On-Farm Composting

Rodale Research Center 1990

A research report from the Rodale Research Center. \$5.

All three of the above listed available from:

The New Farm Library
Attn. Christopher Klipple
222 Main Street
Emmaus, PA 18098
(215) 967-5171

Efficient Land Use of Sludge and Manure

A. D. Kofoed, J.H. Williams and
P. L'Hermite 1986

A seminar proceedings containing chapters on use of nitrification inhibitors as additives in liquid wastes to improve efficiency of nitrogen utilization; anaerobic digestion of farm manure and food industry waste; alternative methods of sludge and manure applications; nutrient leaching losses following application of sewage sludge; and rapid methods for assessing nutrient composition of farm slurries and other wastes. \$52.25.

Published by:

Elsevier Science Publishing Co.
P.O. Box 882
Madison Square Station
New York, NY 10159
(212) 989-5800

The Farmer's Fertilizer Handbook

New Farm Editors

A practical guide to assist farmers in determining fertilizer rates. \$17.95.

A Practical Guide to Novel Soil Amendments

Janet McAlister

A guide for farmers and consumers. The guide provides details on various amendments available for use on farms. \$6.95.

Both available from:

Rodale Research Center and Institute
222 Main Street
Emmaus, PA 18099-0015
(215) 967-5171

Fertilizers and Manures

Ken Simpson 1991

The book includes information on using fertilizers and manures. It also includes an extensive bibliography with citations of other sources of information. \$39.95.

Published by:

John Wiley & Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Guide to Soil Suitability and Site Selection for Beneficial Use of Sewage Sludge
Manual 8

J.H. Huddleston and M.P. Ronayne 1990

The guide emphasizes the effects on soil of land applications of sewage sludge. Interactions among sludge, soil, crop and farm management are also discussed. Principles and practical applications are stressed. First six copies available at no cost, call for a price quote if more than six copies are needed.

Available from:

OSU Agricultural Communications -
See the *University Resources* section
of this guide for ordering information

Let It Rot

Stu Campbell 1975

Details various methods of composting for use on small farms and gardens. \$5.95.

Available from:

Storey Communications, Inc.
Schoolhouse Road
Pownal, VT 05261
(800) 827-8673

Natural Systems for Waste Management and Treatment

Sherwood C. Reed, E.J. Middlebrooks, and R.W. Crites 1988

Natural treatment methods which rely on the use of plants, soils, aquatic, and terrestrial organisms are discussed. The book provides complete design information plus useful information on planning, concept evaluation, and site selection. Wetland systems, aquaculture, sludge management, and land treatment systems are described. \$42.

Published by:

McGraw Hill Publishing Company
1221 Avenue of the Americas
New York, NY 10020
(800) 262-4729

Organic Waste Recycling

Chongrak Polprasert 1989

A guide to the principles and practices of the recycling of organic waste materials. Covers topics such as the characteristics of organic wastes, composting, bio-gas production, algae production, aquatic weeds and their utilization, land treatment of wastewater, planning, and institutional development. \$72.50.

Published by:

John Wiley & Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Using Manure Resources Wisely

New Farm Editors

A short, practical, how-to guide written for farmers.

Available from:

The New Farm
Rodale Press
222 Main Street
Emmaus, PA 18098
(800) 527-8200

Nitrogen Efficiency in Agricultural Soils

D.S. Jenkinson and K.A. Smith, Editors
1988

Proceedings from a seminar on nitrogen efficiency in agricultural soils and the efficient use of fertilizer nitrogen. The main topics of the seminar included: efficient use of fertilizers in agriculture; pathways for nitrogen loss from crop and soil systems; and biological transformations of nitrogen and uptake by plants. \$88.25.

Available from:

Elsevier Science Publishing Co. Inc.
P.O. Box 882
Madison Square Station
New York, NY 10159
(212) 633-3650

Soil Acidity and Liming

Fred Adams, Editor 1984

Discusses the chemistry of soil acidity; physical effects of hydrogen, aluminum, and manganese toxicities in acid soils; physical aspects of calcium, magnesium, and molybdenum deficiencies in plants; liming materials and practices; and regional crop responses throughout the U.S., including the Pacific Northwest. \$33.

Available from:

American Society of Agronomy
Book Order Department
677 South Segoe Road
Madison, WI 53711-1086
(608) 273-8080

Soil Fertility and Fertilizers

Tisdale, Nelson, and Beaton 1985

A classic soils textbook. Includes descriptions of the occurrence, forms, soil behavior, and plant uptake of each nutrient. Information on liming soils in humid regions, conservation tillage, and organic waste management is also included. \$57.95.

Published by:

Macmillan Publishers
866 Third Avenue
New York, NY 10022
(800) 257-5755

Soil Fertility and Organic Matter as Critical Components of Production Systems

Soil Science Society of America 1987

The book provides technical descriptions of nutrient cycling and organic matter dynamics as they relate to agricultural production systems. Information about simulated computer models and their applications, conservation methods, and climatic influence on productivity are included. \$32.

Available from:

Soil Science Society of America
Book Order Department
677 Segoe Road
Madison, WI 53711
(608) 273-8080

Western Fertilizer Handbook (7th Edition) and the Horticulture Edition of the Western Fertilizer Handbook (1st Edition)

California Fertilizer Association 1990

Two fertilizer handbooks for growers, students, and consultants. Details on the sampling of plant parts for tissue analysis, nutrient formulations for hydroponics, government regulations, formulation, application, and storage methods of fertilizers are given. Both books also contains extensive conversion tables and useful information to calculate rates. Color photographs show many common nutrient deficiency symptoms. \$14.95 each.

Both published by:

Interstate Printer and Publishers
P.O. Box 50
Danville, IL 61834-0050
(800) 843-4774

The Effect of Soils and Fertilizers on Human and Animal Nutrition

W.H. Allaway 1975 Agricultural Bulletin No. 378.

Available from:

Government Printing Office
Superintendent of Documents
U.S. Government Printing Office
Washington D.C. 20402
(202) 783-3238
8:00 - 4:00 EST

Extension Publications

See the *University Resources* section of this guide for information regarding ordering OSU, WSU, PNW, and University of California publications.

Oregon State University Extension Publications**Calculating the Fertilizer Value of Manure from Livestock Operations EC 1094****Fertilizing Home Fruit, Vegetable and Ornamental Gardens FG 66****Fertilizing with Sewage Sludge FG 64****Gardening with Composts, Mulches, and Row Covers EC 1247****Guide to Soil Suitability and Site Selection for Beneficial Use of Sewage Sludge Manual 8****How to Calculate Manure Application Rates in the Pacific Northwest PNW 239****Land Application of Sewage Sludge FS 249****A List of Analytical Laboratories Serving Oregon FG 74**

Manure Management Practices to Reduce Water Pollution FS 281**Current Nutrient Status of Soils in Idaho, Oregon, and Washington PNW 276****Effect of Temperature on Nutritional Requirements of Plants TB 142****Effects of Fertilizers on Yield and Quality of Potatoes in the Willamette Valley TB 129****Effects of Long-Term Fertilizer and Management Practices on Growth and Yield of Pears Grown in a Clay Adobe Soil TB 82****Effects of Soil Moisture and Nitrogen Fertilizer on Pole Beans TB 97****Fertilizer and Lime Materials FG 52****Fertilizing Shade and Ornamental Trees FS 103****Liming for Filbert Production in Western Oregon CI 650****Oregon Fertilizer Guides**

TITLE	AREA	DATE	FG #
Alfalfa	E.O.*	July 1983	20
Alfalfa	W.O.*	Mar 1983	18
Apples		May 1989	23
Beets, Table	W.O.	Nov 1984	13
Blueberries	W.O.	Dec 1991	78
Caneberries	W.O.	Jan 1992	51
Beans, Bush	W.O.	Apr 1983	28
Carrots	W.O.	Apr 1983	29
Cherries, Sweet		July 1983	25
Christmas Trees	W.O.	Mar 1983	73
Clover, Red	W.O.	Apr 1983	17
Clover, Crimson, Vetch, Field Peas	W.O.	Apr 1983	30
Corn, Sweet	E.O.	Aug 1979	62
Corn, Sweet	W.O.	June 1983	11
Corn, Field	E.O.	June 1983	71

TITLE	AREA	DATE	FG #
Corn, Field	W.O.	Apr 1983	10
Cranberries	S.O.*	Sept 1989	75
Fertilizer & Lime Materials		Jun 1990	52
Fertilizing Home Fruit, Vegetable & Ornamental Gardens		Jul 1990	66
Fertilizing Home Lawns - 47		Feb 1989	EC 1278
Soil & Water Management for Home Gardens - 66		Jun 1985	EC 824
Rural Domestic Water Supply-76		Feb 1991	EC 1374
Filberts		Apr 1982	34
Grains, Spring	W.O.	Apr 1983	8
Grains, Irrig. Spring-Planted	E.O.	May 1985	37
Grains, Irrig. Spring-Planted (Peat & Muck)		Mar 1983	70
Grass, Orchard	W.O.	Mar 1982	45
Grass, Tall Fescue	W.O.	Apr 1983	36
Grass, Fine Fescue	W.O.	Mar 1982	6
Grass, Bluegrass	N.E.*	Mar 1985	31
Grass, Bluegrass	W.O.	Mar 1982	44
Grass, Bentgrass	W.O.	Mar 1985	7
Grass, Turf		Jun 1979	47
Grass, Perennial Ryegrass	W.O.	Apr 1982	46
Grass, Annual Ryegrass	W.O.	Feb 1982	5
Meadows, Native	E.O.	May 1985	22
Onions, Mineral Soils	E.O.	Apr 1983	65
Onions, Muck Soils	W.O.	Jun 1984	67

TITLE	AREA	DATE	FG #
Pasture, Sub-clover-Grass	W.O.	Apr 1983	4
Pasture, Sub-clover-Grass	S.W.	Jul 1983	63
Pasture, Perennial Grass (non-irrigated)	W.O.	Aug 1984	16
Pasture, Irrig. Clover-Grass	E.O.	May 1983	21
Pasture, Irrig. Clover-Grass	S.W.	Jul 1984	58
Pasture, Irrig. Clover-Grass	W.O.	Oct 1984	1
Pastures, Irrigated	C.O.	Mar 1963	FR 38
Peaches		Apr 1982	53
Pears (Hood River)		May 1985	59
Peas	E.O.	Jul 1983	72
Peas	W.O.	Nov 1984	55
Peppermint	C.O.	Apr 1963	FR 41
Peppermint	W.O.	Apr 1983	15
Peppermint and Spearmint	E.O.	May 1983	69
Potatoes (Central OR and Klamath)		Sept 1978	56
Potatoes, Irrig. (Columbia Basin)		Mar 1985	57
Potatoes, Irrigated	E.O.	Jun 1970	39
Potatoes, Irrigated	W.O.	Sept 1980	19
Prunes		Feb 1982	24
Sewage Sludge, Fertilizing with		Jun 1981	64
Strawberries	W.O.	Jan 1988	14
Vegetables-- Broccoli, Brussels Sprouts, Cabbage, Cauliflower	W.O.	Jul 1983	27
Vine Crops (Cucumbers, Melons, Squash, Pumpkins)	W.O.	Jan 1990	68

TITLE	AREA	DATE	FG #
Walnuts		Sept 1976	35
Water Quality, Irrigation		Jan 1990	76
Wheat	N.E.	May 1962	FR 33
Wheat, non-irrig. (Columbia Plateau)		Sept 1980	54
Wheat, Winter	W.O.	May 1989	9
Wheat, Irrigated	E.O.	July 1983	40

*E.O. = Eastern Oregon; W.O. = Western Oregon;
S.O. = Southern Oregon; N.E. = Northeastern Oregon

Washington State University Extension Publications

Anhydrous Ammonia EM 3776 50¢

Blackspot and Potato Fertilization in Washington's Columbia Basin XB 0862 Free

Blueberry Fertilization EB 1235 25¢

Current Nutrient Status of Soils PNW 276 50¢

Effect of Slow-Release Nitrogen on Cranberries XB 0880 Free

Effects of N, P, K, and Soil Amendment Products on Five Crops XC 0599 Free

Estimate of Salinity Level Produced by Broadcast and Band-Applied Fertilizer EB 1426 25¢

Evaluation of Four Phosphorus Soil Tests, Their Relationship to Corn Yield XB 0965 Free

Fertilizer Needs of Leveled Lands of the Columbia Basin XC 0368 Free

Golden Delicious Apples: Leaf Nitrogen Level EB 1084 50¢

Guide for Safe, Profitable Fertilizer and Pesticide Use MISC 0012 25¢

How Much Fertilizer: Conversion Guide for Gardeners EB 1123 25¢

Limestone, Magnesium, Trace Elements: Effect on Strawberry Plant and Yield XB 0776 Free

Nitrogen, Phosphorus Fertilizers for Head Lettuce in Western Washington XB 0883 Free

Nitrogen and Phosphorus Requirements for Sweet Corn in Western Washington XB 0950 Free

Phosphorus Fertilization, Broadcast Banding and Starter EM 3295 25¢

Residual Availability of Boron Applied to an Irrigated Alkaline Soil XB 0829 Free

Sewage Sludge Guidelines: Part 1--Application to Farmlands EB 1430 50¢

Sewage Sludge Guidelines: Part 2--Site Selection and Management EB 1431 \$1

Sewage Sludge Guidelines: Part 3--Worksheet for Application Rate EB 1432 75¢

Soil Acidity in Central Washington Orchards EB 1334 25¢

Soil Fertility and Nutrition Management of Washington Vineyards EB 0874 25¢

Washington Fertilizer Guides

Cabbage, Broccoli, Cauliflower, and Brussel Sprouts FG 0047 25¢

Fertility Program/Tree Fruit FG 0028F 25¢

Fruit Trees for Washington FG 0028A 25¢

Instructions for Tree Fruit Leaf Nutrient Analysis FG 0028E 25¢

Interpretation of Leaf Analyses--Tree Fruits in Washington FG 0028G 25¢

Irrigated Asparagus FG 0012 25¢

Irrigated Lima Beans for Central Washington FG 0042 25¢

Irrigated Melons, Squash, and Cucumber FG 0014 25¢

Irrigated Peas for Central Washington FG 0033 25¢

Irrigated Strawberries for Central Washington FG 0015 25¢

Irrigated Sweet Corn, Central Washington FG 0035 25¢

Irrigated Vineyards for Entire State FG 0013 25¢

Nutrient Content--Fruit Trees FG 0028F 25¢

Orchard Cover Crops and Sod FG 0028B 25¢

Soil Samples/Orchards FG 0028C 25¢

Special Orchard Soil Tests FG 0028D 25¢

Vegetable and Flower Gardens, Except Irrigated Central Washington FG 0050 25¢

University of California Extension Publications

Guidelines for Fertilizing Vegetables - Family Farm Series February 1983

Gypsum and Other Chemical Amendments for Soil Improvement No. 2149 \$1

Nitrate Losses from Irrigated Cropland No. 21136 \$1.25 Causes and remedies.

Soil Fertility Research No. 21376 \$1
Directory to soil fertility and plant nutrition experiments conducted by the UC Cooperative Extension and Agricultural Experiment Station

Soil and Tissue Testing in California No. 1879 \$4 Provides good information about interpreting test results. Revised in 1983, 56 pages

Bibliographies

See the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations Section* of this guide for ordering information.

Liming for Soil Enrichment QB 87-25

Climate, Fertilizers, and Soil Fertility
QB 91-101

Composts and Composting of Organic Wastes QB 91-27

Conservation Tillage, Including Minimum and No-Tillage QB 90-15

Earthworms in Agriculture QB 90-63

Legumes in Crop Rotations QB 90-02

Manures: Uses, Costs and Benefits
QB 90-71

Sewage Sludge in Agriculture QB 91-78

Soil Organic Matter: Impacts on Productivity QB 91-24

Soil Testing and Plant Analysis for Fertilizer Recommendations QB 91-103

Videotapes

See the *Video Tapes and Other Media Offerings* section of this guide for ordering information.

Composting for Farms**Suppliers of Alternative Soil Amendments****Pacific Northwest****Charley's Greenhouse Supply**

1569 Memorial Highway
Mt. Vernon, WA 98273
Composting equipment, organic soil amendments

City of Portland

Maintenance Bureau
2929 North Kerby
Portland, OR 97227
(503) 248-5509
Composted leaves

Down to Earth Distributors

850 West Second Street
Eugene, OR 97402
(503) 342-6820
Organic soil amendments

Gamble Farms

26142 Cory Road
Junction City, OR 97448
(503) 998-6976
Composted chicken manure

Green Earth Organics

9422 - 144th Street East
Puyallup, WA 98373
(206) 845-2321
Composting equipment, organic soil amendments

Inland Pacific Fisheries

Box 719
Ontario, OR 97914
(503) 889-2277
Fish fertilizer, fish meal, oil, bone meal

Integrated Fertility Management

333 Ohme Gardens Road

Wenatchee, WA 98801

(509) 662-3179

Organic soil amendments, fertilizers

MR Smith Incorporated

157 McCleary-Elma Road

McCleary, WA 98557

(206) 495-4224

Liquid fish fertilizer

Northwoods Nursery

28696 South Cramer Road

Molalla, OR 97038

(503) 651-3737

Organic soil amendments

Oregon Organic

Perrydale Feed Co.

7566 Perrydale Loop

Amity, OR 97101

(800) 227-8979

Organic fertilizers, compost, mulches

Organic Pest Management

P.O. Box 55267

Seattle, WA 98155

Organic soil amendments

Oregon Soil Corporation

17810 SW Bunker Oak Road

Beaverton, OR 97006

(503) 629-5933

(503) 658-8342

Earthworms, soil amendments, and related publications

NATIONAL

Agri-Mart, Inc.

9302 Denton Avenue

Hudson, FL 34667

(800) 367-1963

Organic soil amendments, refractometers and pH testers

Bountiful Gardens

5798 Ridgewood Road

Willits, CA 95490

Organic soil amendments

Full Circle Garden Products

P.O. Box 6

Redway, CA 95560

Organic soil amendments

Harmony Farm Supply

P.O. Box 460

Warehouse: 4050 Ross Road

Graton, CA 95444

(707) 823-9125

Organic soil amendments, fertilizers, biodynamic compost

Jean Jones

Gardening Consultant, Schultz Co.

P.O. Box 173

St. Louis, MO 63043

Sells "Mixerator" - a device which attaches to a garden hose-end and can hold mixes which can be sprayed.

Midwestern Bio-Ag

Highway ID Box 126

Blue Mounds, WI 53517

(800) 327-6012

Natural base non-toxic fertilizers, on-farm consulting, soil- and feed-analysis.

Moody Hill Farms

Box 171

Amenia, NY 12501

(518) 789-3252

Organic soil amendments, consulting services

Natural Gardening Company

27 Rutherford Avenue

San Anselmo, CA 94960

Composting equipment, organic soil amendments

Necessary Trading Company

P.O. Box 305

New Castle, VA 24127

(800) 447-5354

Organic soil amendments, fertilizers, composting equipment

Peaceful Valley Farm Supply

11173 Peaceful Valley Road

Nevada City, CA 95959

(916) 272-4769

Composting equipment, organic soil amendments, natural fertilizers, planting and potting mixes

REOTEMP Instrument Corporation

11568 Sorrento Valley Road

Suite 10

San Diego, CA 92121

(800) 648-7737

Sells a variety of hand-held, stainless steel compost thermometers with pointer stems up to 72 inches long. The "standard model" with a 36 inch stem (temperature range from 0-200°F) sells for around \$80.

Saris Corporation

1258 First Avenue South

Suite 406, Box 315

Seattle, WA 98134

(206) 340-1835

Seaweed based fertilizers and soil amendments

D. Taylor

264 East Hemley Street

Bayou La Batre, AL 36509

(205) 824-4068

Seafood meal

Trickle Soak Systems

P.O. Box 38

Santee, CA 92071

Organic soil amendments

The Urban Farmer

2833 Vicente Street

San Francisco, CA 94116

Organic soil amendments

U.S. Soil

Drawer 926

Salida, CO 81202

(719) 539-3535

Trace mineral fertilizers

Soil Testing and Plant Analysis

Biological and Soil Quality Testing:

There is growing interest in "soil quality" tests. What is often implied is that there should be a biological index that measures the "health" of a given soil. Certainly there are biological parameters that soil scientists have developed for research purposes such as microbial biomass, enzyme activities, and microbial counts that can be biological indexes. However, these tests are not typically done by commercial labs and, even if available, they are expensive. Interpretation of results obtained from these tests is difficult. A major problem with interpreting a biological index is that soils naturally vary widely in terms of native levels of biological activity and soil organic matter. Furthermore, there is no direct correlation of these biological indexes with crop productivity. More research is needed before a meaningful test can be used in routine soil testing. For those concerned about soil health perhaps the best advice is to measure soil organic matter (as total N or C) at five or ten year intervals to determine whether the soil management program being employed is increasing or decreasing soil organic matter.

Chemical Soil Tests: Soil tests that use chemical extracts of nutrients can be useful tools in determining nutrient requirements for future crops and can improve fertilizer efficiency if soil samples are collected and results interpreted correctly.

Nearly all routine soil tests involve a rapid chemical test that measures a part of the total nutrient pool, which presumably relates to availability of a given nutrient to the plant. The amount of a given nutrient that is extracted is only meaningful if there has been extensive calibration relating extraction rates with plant growth and yield under field conditions. Not all crops and/or regions have the necessary field calibration data. Consequently it is preferable to use local laboratories to run analyses and local fertilizer recommendations. Your local Extension service office can provide you with information based on local research.

Soil tests are useful but in order to fully utilize their benefits you need to know the limitations of the particular testing procedure and how to use the information it provides correctly. It should be stressed that a soil test is only one source of information you can use to determine fertility management practices. You must take into account factors such as: field history (e.g. previous crops, past fertilizer applications), realistic yield goals, and your own personal experience.

Plant Analysis: Plant tissue nutrient analysis is a diagnostic tool that determines the nutritional status of a crop by analyzing a plant part such as a leaf. Plant analysis tests are not a substitute for soil tests as each estimates different needs. While soil tests generally analyze for phosphorus, potassium, sulfur, and zinc; plant analysis can be used to determine nitrogen, magnesium, copper, boron, iron, and manganese deficiencies.

There are two general types of plant nutrient analyses that can be used on fresh plant tissue: in the field, or in the lab. Tests run in the lab are more precise, but it takes longer to get the results. Plant nutrient tests presume that the amount of a given nutrient present in the sample is an indication of the

amount of that nutrient available to the plant from the soil. Uses of such tests include being able to make in-season corrections of fertility levels or to predict the nutrient requirements for the next season's crops.

Plant tissue tests do not have the wide-ranging applications that soil tests do. Although these tests can be useful, their value is often limited because there is a lack of research for many cropping situations, which is required to properly calibrate plant tests. Plant nutrient analysis tests are most often used with high cash value crops and most notably with perennial woody species. To use such a test, it is imperative that the correct plant parts are collected and the recommended time of sampling be followed.

As a general rule, row crop plants are sampled early in the growing season whereas woody perennial crops are sampled when leaves in July or August. Leaf analysis can be used on an annual basis. For perennial woody crops, collect fully expanded leaves from the current season shoots. Specifics of how to collect samples and how to interpret results can be found in some of the fertilizer guides listed in the soil testing section of this chapter.

Soil sampling, analysis, and interpretation guidelines.

<u>Procedure</u>	<u>Comments</u>
1. Obtain a fertilizer guide for the next crop and future crops you intend to grown in a given field	Each state has guides (sometimes by region) for many of the crops grown.
2. Determine which nutrient(s) you need tests run for	The fertilizer guides will tell you which nutrients are potentially deficient.
3. Using the guide, determine if a lime test is necessary	Every crop has an optimal soil pH for optimum growth. A soil pH test can tell you whether you need to lime, but the results do not tell you how much lime to apply to correct achieve the optimum pH; a lime test (one type is the SMP buffer test) will tell you how lime much is needed.
4. Take soil samples correctly	If a soil sample is taken without getting a sample that is representative of the field, or is contaminated, you've wasted your time and money. OSU guide #EC 628 contains information about how to collect soil samples properly (see the <i>University Resources</i> section for ordering information).
5. Choose reputable lab to have soil analyzed	There are many reputable testing labs in operation. For a list of labs see the next few pages. The OSU Extension service updates this list of labs on an annual basis.
6. Interpret results of soil test	Do not solely depend on lab recommendations to make your fertilizer decision. Take into account your fertilizer use history and use common sense before making a final decision.
7. Keep records	Keep your soil test results, and record the amount of fertilizer applied to each field. Over time such information becomes more valuable because you can check fertilizer recommendations in relation to management practices and yields.
8. Test soils every 3-5 years	

A List of ANALYTICAL LABORATORIES SERVING THE PACIFIC NORTHWEST

This guide adapted from Oregon State University Cooperative Extension Service publication, Fertilizer Guide 74, *A List of Analytical Laboratories Serving Oregon*. Used by permission.

Laboratory	Area Served*			Analyses						Fertilizer recomm.	Consulting	Comments
	Oregon	Idaho	Washington	Tissue	Soil	Water	Feed	Pesticides	Heavy Metals			
A & L WESTERN AG. LAB 1311 Woodland Ave., Suite 1 Modesto, CA 95351-4732 209/529-4080	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Certified professional agronomist on staff. Technical support for agronomy, horticulture, nursery, golf course, and landscape. California DHS certified for drinking water and environ. analysis. Certified by Nat'l. Forage Testing Assn. Manure and sludge analysis. Fertilizer Analysis.
AGRI-CHECK, INC. 323 Sixth Street P.O. Box 705 Umatilla, OR 97882 503/922-4894 1-800-537-1129	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Certified by: Nat'l. Forage Testing Assn., Washington State Univ., Soil Conservation Service. Industrial wastes, sludge, manure. Environmental testing, wetland mitigation, nursery, forestry. Irrigation scheduling.
AGRI-TEST, INC. 2043 Kimberly Road P.O. Box 4 Twin Falls, ID 83303 208/734-2303	X	X	X	X	X	X (1)	X	X	X	X	X	Industrial and animal wastes, sludges, plant toxins, fertilizer analysis; general chemistry, plant tissue, feeds, water, soil, irrigation scheduling.
ANTECH 501 NE Thompson Mill Rd. Corbett, OR 97019 503/695-2135	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Commodities testing, microbiology, nutrient analysis, pesticide residues, and soil analysis.
WILLIAM F. BLACK SOIL TESTING 503 N. Gardner, P.O. Box 317 Burlington, WA 98233 206/757-6112	E W		E W	X	X	X (1)			X	X	X	Chemical and physical soil tests. Fertilizer recommendations for all field crops, landscaping, nursery, greenhouse. Fertilizer and lime analysis. Specific gravity, dry matter, moisture content, etc.
BRAUN INTERTEC NORTHWEST, INC. 5405 N. Lagoon P.O. Box 17126 Portland, OR 97217-0126 503/289-1778 Fax: 289-1918	X	X	X		X	X (1) (2)	X	X	X		X	On-site sampling, hazardous waste assessment, total petroleum hydrocarbons (TPH), volatile/semi-volatile organics; GC-MS, environmental and hazardous waste testing, sludges and industrial effluents, PCB's.

Laboratory	Area Served*			Analyses						Fertilizer recomm.	Consulting	Comments
	Oregon	Idaho	Washington	Tissue	Soil	Water	Feed	Pesticides	Heavy Metals			
BROOKSIDE FARMS LAB 308 S. Main Street New Knoxville, OH 45871 419/753-2448	X	X	E	X	X	X (1) (2)	X	X	X		X	Manures; Nat'l Alfalfa Hay Testing Assn. certified, environmental and hazardous waste analysis; complete soil physical testing (USGA procedures) for golf courses.
CASCADE ANALYTICAL, INC. 3019 G.S. Center Road Wenatchee, WA 98801 509/662-1888	X	X	X	X	X	X (1) (2)	X	X	X		X	Sludge and hazardous waste analysis; lime material analysis; contract research. DOE accredited, waste water. Certified by Dept. of Health.
CENTURY TESTING LABORATORIES, INC. P.O. Box 1174 Bend, OR 97709 503/382-6432	X	X	X	X	X	X (1) (2)	X	X	X		X	Environmental, hazardous waste, and drinking water analysis lab. Multi-state accreditations, certified under USEPA CLP Lab Program, and by Nat'l Alfalfa Hay Testing Assn.
CH2M HILL Redding Environmental Laboratory 5090 Caterpillar Road Redding, CA 96003 916/244-5227	X	X	X	X	X	X (2)		X	X		X	Environmental and hazardous waste analysis.
COFFEY LABORATORIES, INC. 12423 NE Whitaker Way Portland, OR 97230 503/254-1794 Fax: 503/254-1452	W	X	X	X	X	X (1) (2)	X	X	X	X	X	Comprehensive environmental lab offering soil, plant tissue and hay testing; fertilizer analysis; sewage sludge, pesticide and env. waste testing; organic, inorganic, microbiological and microscopic analysis and radiological services.
COLUMBIA LABORATORIES P.O. Box 40 Corbett, OR 97019 503/695-2287	X	X	X	X	X	X (1) (2)	X	X	X		X	Comprehensive pesticide/herbicide residue analysis of crops, water and soil; environmental, microbiological and nutritional analysis.
DATAChem LABORATORIES, INC. Sorenson Research Park 960 West LeVoy Drive Salt Lake City, UT 84123-2547 800/356-9135	X	X	X	X	X	X	X	X	X			Environmental and hazardous waste testing and IH analysis. EPA Contract Lab, AIHA, CDC accredited. NIOSH primary contract lab.

Laboratory	Area Served *			Analyses						Fertilizer recomm.	Consulting	Comments
	Oregon	Idaho	Washington	Tissue	Soil	Water	Feed	Pesticides	Heavy Metals			
DATA LAB Route 1, Box 129 Colfax, WA 99111 509/397-3478	E	N	E	X	X	X (1) (2)	X		X	X	X	Analysis of drinking water (certified by State of Washington), waste and irrigation water, soils, plant tissue, and feeds.
DELLAVALLE LABORATORY, INC. 1910 W. McKinley, Suite 110 Fresno, CA 93728-1298 209/233-6129	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Accredited by California Dept. of Health Services for inorganic drinking water and waste water analyses. Irrigation scheduling, soil reclamation, fertilizer mgmt. and related services available.
FPL, ENVIRONMENTAL FOOD PRODUCTS LAB, INC. 4110 NE 122nd, #130 Portland, OR 97230 503/253-9136	X	X	X	X	X	X (1) (2)	X	X	X		X	Pesticides, herbicides, chlorophenoxy herbicides, N-methyl carbamate, HPLC, GC, AA, drinking water, hazardous wastes.
HARRIS LABORATORIES P.O. Box 80837 624 Peach Street Lincoln, NE 68501 402/476-2811	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Full service laboratory; microbiology, fertilizer, manure, and sludge analysis.
HARVEY LABORATORIES P.O. Box 686 Patterson, CA 95363 209/892-9661 or 209/531-6184	X	X	X	X	X	X (1)				X	X	Systems analysis program for soils, plant tissue, water, manure.
LAUCKS TESTING LABORATORY 940 South Harney Street Seattle, WA 98108 206/767-5060 Fax: 767-5063	X	X	X	X	X	X (1) (2)	X	X	X		X	Complete environmental analyses including hazardous waste and sewage sludge. Certifications/accreditations include Wa. Dept. of Ecology, Wa. DSHS, USDA, Wa. Dept. of Agriculture. USEPA contract lab program analyses.
NEILSON RESEARCH CORP. 245 S. Grape Street Medford, OR 97501-3123 503/770-5678	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Specialize in complete environmental, hazardous waste, and sewage sludge testing. Certified by EPA and State of Oregon.
NORTHWEST AGRICULTURAL CONSULTANTS 2545 West Falls Kennewick, WA 99336 509/783-7450	X	X	X	X	X	X (1) (2)	X			X	X	Soil and plant analysis. Fertilizer recommendation. Water analysis, nematode bioassay. Certified WA Dept. of Health, USU soil and plant exchange program.

Laboratory	Area * Served			Analyses						Fertilizer recomm.	Consulting	Comments
	Oregon	Idaho	Washington	Tissue	Soil	Water	Feed	Pesticides	Heavy Metals			
OREGON STATE UNIVERSITY Central Analytical Laboratory Ag & Life Sciences Bldg., Rm. 3079 Corvallis, OR 97331 503/737-2187 Soil samples 503/737-5716 Plant samples	E W			X	X	X (1)						Formerly Soil Testing Laboratory and Horticulture Plant Analysis Laboratory. Located in new Agriculture and Life Science Building. Plant samples accepted July - Sept. Soil samples accepted throughout the year.
PENINSU-LAB 5795 NE Minder Poulsbo, WA 98370 206/297-3295 or 1-800-635-6866	X		X	X	X						X	Field/lab pest and disease evaluation, contract research. Soil microorganism evaluation. Orchard replant tests.
SOIL & PLANT LABORATORY, INC. P.O. Box 1648 Bellevue, WA 98009-1648 206/746-6665 Fax: 562-9531	X	X	X	X	X	X (1)				X	X	On-site field calls. Manure analysis. Lab at P.O. Box 153 (352 Mathew St.) Santa Clara, CA 95052-0153 408/727-0330
SOILTEST FARM CONSULTANTS, INC. 2925 Wapato Drive Moses Lake, WA 98837 509/765-1622	X	X	X	X	X	X (1)	X		X	X	X	Certified by Nat'l. Alfalfa Hay Testing Assoc., Washington State Univ.; Montana and Western States soil exchange program, irrigation scheduling, effluent and environmental testing, manure and sewage sludge analysis.
SOUTHERN OREGON ANALYTICAL 22109 Stateline Road P.O. Box R Merrill, OR 97633 503/798-5112	SW E			X	X		X	X		X	X	Tissue analysis; aerial photography; nematode sampling and mapping; hay testing; irrigation scheduling; fertilizer analysis. Also serve N. California.
STUKENHOLTZ LABORATORY Addison Avenue East Box 353 Twin Falls, ID 83303-0353 208/734-3050 or 1-800-759-3050 FAX 208/734-3919	X	X	X	X	X	X (1) (2)	X	X	X	X	X	Irrigation scheduling. Manure and sludge analysis. Fertilizer and plant tissue analysis. Research.
UNIVERSITY OF IDAHO Analytical Laboratory Holm Research Center Moscow, ID 83843 208/885-7081	X	X	X	X	X	X (1) (2)	X	X	X			Irrigation and drinking water analysis. Tissue analysis, fertilizer analysis and pesticide and herbicide analysis.

Laboratory	Area Served *			Analyses						Fertilizer recomm.	Consulting	Comments
	Oregon	Idaho	Washington	Tissue	Soil	Water	Feed	Pesticides	Heavy Metals			
USAg ANALYTICAL SERVICES 1320A E. Spokane Street Pasco, WA 99301 509/547-3838	X	N	X	X	X	X (1) (2)	X			X	X	Contract Research. Fertilizer analysis. Irrigation and drinking water analysis. Quality Assurance. All Western States.
WATER ANALYTICAL LABORATORY AND CONSULTANTS 361 W 5th Ave. Eugene, OR 97401 503/485-8404 1-800-262-5973	X	X	X	X	X	X (1) (2)	X	X	X		X	Certified in Oregon, Washington, and Idaho for drinking water analysis. We also analyze irrigation water.
WESTERN LABORATORIES, INC. P.O. Box 1020 Parma, ID 83660 208/722-6564	X	X		X	X	X (1)	X	X	X	X	X	Certified by National Alfalfa Hay Testing Association.
WOOD'S SOIL ANALYSIS LAB Rt. 3, Box 134B Tum-a-Lum Road Milton-Freewater, OR 97862 503/938-7446	E		E		X	X (1)				X		

* E, W, S or N indicate portion of a state.

(1) indicates testing of irrigation water; (2) indicates testing of drinking water.

A listing of laboratories approved by the Oregon Health Division for drinking water analysis can be obtained by contacting the Oregon Health Division, Drinking Water Systems, P.O. Box 231, Portland, OR 97207-0231, or call 503/229-6310 or 503/229-6307.

Prepared by John Hart, Extension Soil Scientist, and Lois Lessert, Office Specialist, Department of Crop and Soil Science, Oregon State University, Corvallis, OR.

General References

Critical Nutrient Ranges in Northwest Crops

A. Irving 1980

Provides information about how and when to take plant tissue samples, and how to interpret plant analysis results. Includes references for studies that were used as the basis for each recommendation. Publication number WREP 43. 50¢.

Available from:

OSU and WSU--see the *University Resources* section of this guide for ordering information

How to Take a Soil Sample

Na-Churs Plant Food Co.

A brochure that outlines the step-by-step process of taking a soil sample.

Available from:

Conservation Technology Information Center
1220 Potter Drive, Room 170
Purdue Research Park
West Lafayette, IN 47906-1334
(317) 494-9

Soil Testing and Plant Analysis

R.L. Westerman, Editor 1990

A technical book that summarizes soil testing and plant analysis as a diagnostic tool for use in assessing nutritional requirements of crops, efficient fertilizer use, saline-sodic conditions, and toxicity of metals. Discussions are included on analytical instrumentation used in soil testing, plant analysis, and data processing. \$38.

Available from:

Soil Science Society of America
Book Order Department
677 South Segoe Road
Madison, WI 53711-1086
(608) 273-8080

pH Kits

Separate pH kits are available for Western Oregon and for Eastern Oregon. Each kit contains three 40 ml. bottles of dye, three color cards, a spot plate, and instructions. The Western Oregon kit covers the pH range from 3.8 to 7.6 and the Eastern Oregon kit covers the pH range from 6.0 to 9.6. Each kit sells for \$11

Available from:

Oregon State University Soils Club
Department of Crop and Soil Science
Ag & Life Sciences Building 3017
Corvallis, OR 97331-7306
(503) 737-5712

In-Field Nitrate and pH Testing Equipment

A "portable laboratory" which allows rapid in-field testing of soil, water, plant tissue, and plant sap for nitrate concentration and pH, using special electrodes and a digital-readout meter has been developed by the Hach Company.

For more information contact:

Hach Company
P.O. Box 389
Loveland, CO 80539

pH Meter

Pike Laboratory has developed a "pHep Meter", a glass-electrode pH meter accurate within plus or minus 0.2 pH units. The meter is battery powered and should test hundreds of samples before the electrode gives out. \$51 postpaid.

Available from:

Pike Lab Supply, Inc.
RFD 2, Box 92
Strong, ME 04983-9607
(207) 684-5131

Extension Publications

See the *University Resources* section of this guide for information regarding ordering OSU, WSU, PNW, and University of California publications.

Oregon State University Extension Publications

How to Take a Soil Sample...and Why
EC 628

A List of Analytical Laboratories Serving Oregon FG 74

Washington State University Extension Publications

Intensive Soil Sampling XB 0781 Free

Lab Test for Predicting Lime Requirement for Acid Mineral Soils XT 0088 Free

Orchard Soil Sampling EM 4429 25¢

Principles of Soil Sampling for Northwest Agriculture WREP 0009 25¢

Source, Degree of Soil Variability in Field Problem of Sampling for Tests, Fertility
XB 0749 Free

PNW Extension Publications

Current Nutrient Status of Soils in Idaho, Oregon, and Washington PNW 276 \$.050

Fertilizer Band Location for Cereal Root Access PNW 283 50¢. A slide/cassette-tape series with the same title as PNW 275 provides a summary of the bulletin. It is also available on 1/2 inch, VHS videocassette. The slide/cassette set costs \$8 plus shipping.

Bibliographies

Soil Testing and Plant Analysis for Fertilizer Recommendations QB 89-52, April 1989

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

Soil Conservation and Erosion Management

General References

Conservation Farming

Harold Huges 1980

The guide provides information on energy expenditures, water, soil, fertilizers, pesticides, and efficiency of farm implements other than tractors. \$19.

Available from:

Deere and Company
Department 333, John Deere Road
Moline, IL 61265
(309) 765-4516

Conservation Technology Information Center (CTIC)

CTIC publishes a newsletter, *Conservation Impact*, eleven times per year which focuses on soil conservation, water conservation, and water quality. They also sponsor a program called PACT, or Profitable Agriculture through Conservation Technology. Awards are given annually for outstanding writing by North American journalists who have featured the environmental and economic aspects of conservation technology. A booklet containing reprints of the winning PACT articles is available free. Other products and services available from CTIC are listed below. Membership to CTIC is \$15 per year.

For more information contact:

National Assoc. of Conservation Districts
Conservation Tech. Information Center
1220 Potter Drive, Room 170
West Lafayette, IN 47906-1334
(317) 494-9555

A **Directory of Audio/Visual Materials** from CTIC is also available; some of the titles are listed below.

For information contact:

Conservation Film Service
Box 776
League City, TX 77574-0776
(713) 332-3402

Directory of Conservation Tillage Clubs and Associations

Directory of Conservation Tillage Pamphlets and Brochures

Grower Network - A computerized data base of experienced conservation farmers throughout the country who are willing to share their knowledge and expertise with others.

National Survey, Conservation Tillage Practices 1983-1989--National regional, state, county information available in hard copy, magnetic tape or diskette formats. A user-friendly software, CEDAR is also available on diskette.

No-Till Farming - Contains explanations of budget items, definitions of tillage terms, and crop budgets for corn and soybeans. Available through CTIC for \$4.95 a copy.

Resource Specialist File - A computer data base of experts in soil conservation, water conservation, and water quality.

Learning Materials - Some products include activity posters, activity books, teacher's guides, text book covers, and puppets with scripts. Computer programs may also be used to enhance classroom activities.

Conservation Tillage Fact Sheets - Printed on recycled paper, these fact sheets are available for 3¢ each. There is a minimum charge of \$3 per order. Titles are listed below. Request an order form from the CTIC office (address listed above).

Benefits of Conservation Tillage

Conservation Tillage: Does it Pay?

Cultivators for Conservation Tillage

Drills

Equipment for Ridge Planting

Estimating Percent Residue Cover using the Line-Transsect Method

How to Form a Conservation Tillage Club

Management Considerations in a Ridge Plant System

Managing Crop Residues to Minimize Detrimental Effects on Crop Growth

No-Till Planters-Equipment and Adjustments

No-Till Weed Control Strategies

Planning a Conservation Field Day

Plant Nutrient and Soil Acidity Management for Conservation Tillage

Residue Management to Control Soil Erosion by Water

The Fundamentals of No-Till Farming

Deserts on the March

Paul B. Sears 1935 (Reprinted: 1988)

A description of desertification that blends history, geography, ecology and philosophy. \$14.95.

Available from:

University of Oklahoma Press
1005 Asp Avenue
Norman, OK 73019-0445
(800) 627-7377

The Economics of Soil Erosion: A Handbook for Calculating the Cost of Off-Site Damage

American Farmland Trust 1986

The handbook outlines methods to assist local officials to assess the extent and cost of damage from soil erosion upon outlying areas. Two case studies from Minnesota are presented. \$5.

Eroding Choices, Emerging Issues: The Condition of California's Ag Land Resources

American Farmland Trust 1986

An extensive inventory of California's farmland including statistics on the rate and extent of farmland conversion, soil erosion, salinization, and water supply. Policy options to conserve agricultural resources are presented. \$10.

Both available from:

American Farmland Trust
Publications Department
1920 N Street NW, Suite 400
Washington, D.C. 20036
(312) 427-2943

Eroding Soils: The Off-Farm Impacts

E.H. Clark II, J.A. Haverkamp and
W. Chapman 1985

An analysis of how soil erosion affects water quality and causes off-site problems. Chemical, physical, hydrological, and ecological impacts of soil erosion are included. The effectiveness of current techniques is discussed. \$15.

Available from:

Conservation Foundation
Affiliate of the World Wildlife Fund
1250 - 24th Street NW
Washington D.C. 20037
(202) 293-4800

Foundation Seed

The OSU Agricultural Experiment Station and the WSU Agricultural Research Center, in cooperation with the U.S. Department of Agriculture have released various willow cultivars selected for erosion control in moist places, restoration of streambanks, and stabilization of streambanks. Limited foundation stock is available to commercial nurseries, researchers, and arboretums. Sales to the general public are expected in the future.

For more information contact:

Foundation Seed Project
Crop Science Building, Room 023
Oregon State University
Corvallis, OR 97331
(503) 737-4032

Green Fields Forever

Charles E. Little 1987

Provides a look at the costs and benefits of conservation tillage. Several variations of conservation tillage are discussed, including case studies of farmers who have used the various conservation techniques. \$14.95.

Published by:

Island Press
Box 7
Covelo, CA 95428
(800) 828-1302

No-Tillage Agriculture: Principles and Practices

Ronald E. Phillips 1984

The effects of climate, soil adaptability for no-tillage, soil moisture and fertility, energy requirements, response of weeds and herbicides, other pests and their control, changes in soil properties, multiple cropping, and equipment are discussed. \$40.95.

Published by:

Van Nostrand Reinhold
115 Fifth Avenue
New York, NY 10003
(800) 926-2665

No-Tillage and Surface-Tillage Agriculture: The Tillage Revolution

M.A. Sprague and G.B. Triplett, Editors
1986

Detailed information on management of soil, crop management systems for a variety of geographic locations and crops, pest management, and economic evaluation is provided. \$52.

Published by:

John Wiley & Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Plowman's Folly and A Second Look

Edward H. Faulkner 1943 and 1987

The blame for the Dust Bowl is placed on the moldboard plow in this book by Edward Faulkner. The reprinted edition (1987) includes the sequel. \$19.95.

Published by:

Island Press
Division of Center for Resource
Economics
1718 Connecticut Ave. NW, Suite 300
Washington D.C. 20009
(202) 232-7933

Ridge Till Hotline

A monthly publication offering readers information on developments in ridge-tillage. Features include farmer experiences, research and Extension information, machinery and chemical supplier data, government programs, and other topics related to ridge tillage. Ridge Till Hotline is published by Lessiter Publications which also produces No-Till Farmer Newsletter. Write for a sample issue.

For more information contact:

Ridge Till Hotline
P.O. Box 624
Brookfield, WI 53008-0624

Role of Legumes in Conservation Tillage Systems

J.F. Power, Editor 1987

Proceedings from a national conference held in 1987. Contains information on legumes as a nitrogen source, germplasm resources, cropping practices, economics, erosion and productivity, and weed, insect, and disease control agents. \$13.

Available from:

Soil Conservation Society of America
7515 NE Ankeny Road
Ankeny, IA 50021-9764
(608) 273-8080

Soil and Water Conservation for Productivity and Environmental Protection

R.L. Donahue, J.A. Hobbs, and
F.R. Troeh 1980

History of soil erosion; predicting soil loss; soil surveys and land planning; cropping systems; tillage practices for conservation; conservation structures; vegetating other areas of high erosion hazard; economics of soil conservation; and soil and water conservation agencies are included in this book.

Published by:

Prentice Hall
Route 9W
Englewood Cliffs, NJ 07632
(800) 722-0579

Soil Conservation: Assessing the National Resources Inventory, Volume 1

National Academy of Sciences 1986

A national inventory including information on methods of improving federal resource assessment efforts, measures of soil erosion, consequences of soil erosion, assessment of conservation practices, and land classification schemes. \$15.

Soil Conservation: Assessing the National Resources Inventory, Volume 2

National Academy of Sciences 1986

A collection of reports which expand and support Volume 1, Volume 2 details three aspects of the National Research Institute: (1) analytical results and methods of soil erosion, (2) applications of the data to ephemeral gully erosion, wind erosion, erosion control practices, and off-site erosion damage, and (3) resource policy specifically as it relates to new cropland conversions, conservation programs, and NRI's role in state and local decision making. \$30.

Both volumes available from:

National Academic Press
Division of National Academy of Science
2101 Constitution Avenue NW
Washington D.C. 20418
(202) 334-3180

Soil Erosion: Crisis in America's Croplands?

Sandra S. Batie 1983

A discussion of the history, causes, and possible solutions of soil erosion problems. Details current conservation programs, techniques for reducing soil erosion. Barriers to adoption of techniques including economic and philosophical obstacles to their adoption are discussed. Strategies for developing more effective soil preservation policies are outlined. \$9.50.

Available from:

Conservation Foundation
1250-24th Street NW
Washington D.C. 20037
(202) 293-4800

Solutions to Environmental and Economic Problems (STEEP)

STEEP is a comprehensive research and extension program in Idaho, Washington, and Oregon working toward the development of management technologies for productive farming systems which conserve soil and water resources. This regional network began 15 years ago and includes the USDA, universities, agricultural business firms, and wheat producers in the Pacific Northwest. Research projects include experiment station and on-farm research on plant pathology, weed science, soil fertility and agricultural engineering. Some of the notable outcomes of STEEP research have included erosion control, erosion prediction, machinery technology, bio-control of diseases and weeds, and water conservation. The STEEP Extension Program was initiated was initiated to provide information thorough County extension agents, Conservation Districts, USDA-SCS personnel, wheat grower associations, crop improvement associations and private agricultural service industries. The STEEP Extension Farming Update is published quarterly and contains articles on research findings.

For more information contact:

Agricultural Research Service, USDA
Director, Pacific West Area
800 Buchanan Street
Albany, CA 94710
(510) 559-6060

Director, Idaho Agricultural
Experiment Station
University of Idaho
Agricultural Science Building
Moscow, ID 83843
(208) 885-7173

Director, Oregon Agricultural
Experiment Station
Oregon State University
138 Strand Agricultural Hall
Corvallis, OR 97331-2201
(503) 754-4251

Director, Washington Agricultural
Research Center
Washington State University
403 Hulbert Hall
Pullman, WA 99164-6240
(509) 335-4563

Steep - Conservation Concepts and Accomplishments

10-Year Symposium Proceedings 1987

Summarizes technological developments in soil erosion and conservation farming research achieved over the past decade. An up-to-date bibliography on research in the Northwest is included.

Available from:

Conferences and Institutes
208 Van Duren
Washington State University
Pullman, WA 99164-5222

Tillage Options for Conservation Farmers USDA 1989

Focuses on different types of conservation tillage systems and some of the agencies who assist growers.

Available from:

Your local SCS Office

or from:

United States Department of
Agriculture
Soil Conservation Service
P.O. Box 2890
Washington, D.C. 20013-2890

Video Tapes

See the *Video Tapes and Other Media Offerings* section of this guide for ordering information.

Conservation on Your Own

Extension Publications

See the *University Resources* section of this guide for information about ordering OSU, WSU, PNW, and University of California publications.

Oregon State University Extension Publications

Costs of Alternative Tillage Practices in the Western Region of the Willamette Valley EM 8250

Marginal Analysis of Soil Loss Control on the Mission-Lapwai Watershed, Idaho SB 667

Uniform Combine Residue Distribution for Successful No-Till and Minimum Tillage Systems PNW 297

Erosion, Sediment, and Water Quality in the High Winter Rainfall Zone of the Northwestern United States Agricultural Experiment Station 1980 Examines erosion and runoff, relationships of physical parameters to erosion and sediments, water quality, and some cooperative studies.

Subsurface Drainage: An Erosion Control Practice for Western Oregon? J.D. Istok, L. Boersma, and G.F. Kling 1985. This is the results of two experiments which were conducted to determine the effectiveness of subsurface drainage as an erosion control practice on western Oregon lands.

Use of Minimum Tillage in Oregon: Special Report 807 L. Boersma, R.G. Mason, and D. Faulkenberry 1987. This report is concerned with aspects of minimum tillage in Oregon such as frequency of use, practices used with minimum tillage, and the sources of information used by minimum tillage growers. The use of minimum tillage by wheat growers is also examined.

Washington State University Extension Publications

Absentee Landowners Influence on Palouse Erosion Control Practices XC 0607 Free

Conservation Terminology EM 4553 25¢

No Tillage Drill Design EB 1318 25¢

Projected Long-Run Impact of Technological Progress, Topsoil Erosion on Yields XB 0949 Free

PNW Extension Publications

No-Till and Minimum Tillage: Effective Conservation Farming Systems PNW 275 50¢. A slide/cassette-tape series with the same title as PNW 275 provides a summary of the bulletin. It is also available on 1/2 inch, VHS videocassette. The slide/cassette set costs \$8 plus shipping.

Pacific Northwest Conservation Tillage Handbook PNW #TILLAGE \$20. Consists primarily of PNW Conservation Tillage Handbook Series publications. PNW Extension bulletins in the "Crop Management Series on No-Till and Minimum Tillage Farming" are also included. Some of the topics included are soil erosion impacts on productivity, conservation tillage systems and equipment, and residue management considerations. The Handbook is in a large 3-ring binder to permit additions and revisions. Slot Mulching for Residue Management and Erosion Control PNW 0231 25¢

Slot Mulching for Residue Management and Erosion Control PNW 0231 25¢

Bibliographies

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

Conservation Tillage, Including Minimum and No Tillage QB 90-15 December 1989

Government Resources

Conservation Reserve Program

Under this program, managed by United States Department of Agriculture, farmers are paid an annual rent by the government to take highly erodible cropland out of production for ten years. Further steps to limit erosion such as planting trees and grasses may also be taken. Aid is also available for the establishment of permanent vegetative covers. Agencies that are involved in the CRP are: Agricultural Stabilization and Conservation Service, Soil Conservation Service, Extension Service, State forestry agencies, and local soil and water conservation districts. Applicants may obtain information from any of these agencies.

For more information contact:

United States Environmental
Protection Agency
Nonpoint Source Coordinator
Region 10 - Alaska, Idaho, Oregon,
Washington
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-4181

Soil Conservation Service

The USDA Soil Conservation Service provides direct formal national and indirect international leadership in soil and water conservation. Technical assistance is given to individuals, groups, organizations, and city, county, and state governments. Specialists work in areas such as soil survey, soil classification, and soil data systems. In the state of Oregon there are field offices located within each county. The SCS also has several bulletins including:

Going Wild With Soil and Water Conservation Program Aid #1363

Oregon's Soil: A Resource Condition Report Save Soil Systematically Program Aid #1366
Soil Erosion By Water Agriculture Information Bulletin #513

The SCS has area offices located in several locations throughout Oregon, Idaho, and Washington. See the *Federal Government Listings* in your local phone book to locate the SCS office nearest you, or contact the office listed below under "nonpoint source pollution."

Nonpoint Source Pollution

"Nonpoint source pollution" is pollution which arises from many diffuse sources and is caused by the movement of water through rainfall or snowmelt. The water may pick up natural or manmade pollutants along the way such as: excess fertilizers, herbicides, or insecticides from agricultural or residential areas; sediment from improperly managed crop and forest lands, improperly managed construction sites, and eroding stream banks; salt from irrigation practices; and bacteria and nutrients from livestock, pet wastes, and faulty septic systems. The SCS may be contacted for more information on how to prevent such pollution. See the *Federal Government Listings* in your local phone book to locate the SCS office nearest you.

For more information contact:

USDA Soil Conservation Service
State Office
1220 SW 3rd Avenue, Room 1640
Portland, OR 97204
(503) 326-2751

Windbreaks

General References

Windbreak Technology

J.R. Brandle, D.L. Hintz, and
J.W. Sturrock 1988

A selection of papers presented at the first International Symposium on Windbreak Technology and summarizes the available worldwide literature, now available in a book. Information is presented on general design criteria, principles of planting and establishment for a wide range of conditions and

objectives, and tree and shrub species for arid, semi-arid, temperate, and tropical areas. \$221.

Published by:

Elsevier Science Publishing Co. Inc.
P.O. Box 882, Madison Square
Station
New York, NY 10159
(212) 633-3650

Windbreaks, Shelterbelts, and Living Fences QB 90-49

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* Section of this guide for ordering information.

Videotapes

See the *Video Tapes and Other Media Offerings* section of this guide for ordering information.

Windbreaks: Planning, Planting and Care

Extension Publications

See the *University Resources* section of this guide for ordering OSU and WSU publications.

Pacific North West Publications

Trees Against the Wind PNW 0005

Washington State University

Trees of Washington EB 0440 \$1.25

Where to Get Trees to Plant: Forest, Windbreak, and Christmas Trees EB 0790
25¢



WATER RESOURCE MANAGEMENT

Directories
Irrigation
Management Techniques
Water Quality
Extension Publications
Periodicals
Videos
Organizations

Managing water resources is becoming increasingly more important for a variety of reasons including: drought, water quality concerns, an increasing need for water in urban areas, and the rising costs associated with irrigation, to name a few. This section highlights: directories that provide information about where to find expertise on water-related questions; irrigation management information; and water quality publications and testing labs.

Directories

Directory Of Water Resources Expertise in Oregon

Water Resources Research Institute 1991

A listings of universities, colleges, agencies and organizations in Oregon with water related interests in Oregon. Also included are lists of water testing laboratories in Oregon and Washington. The publication is revised every few years. \$5.

Available from:

Water Resources Research Institute
Oregon State University
Corvallis, OR 97331
(503) 737-4022

A Guide to Water Management Agencies in Oregon

Water Resources Commission November 1990

The guide is designed as a cross reference of agency responsibilities in water resource management. State, federal, local, and regional agencies and organizations are included. Names of agencies only are included; no addresses or telephone numbers are listed. Free.

Available from:

Water Resources Commission
3850 Portland Road NE
Portland, OR 97310
(503) 378-3739

A Guide to Water Research Information Sources in the State of Washington

P. Lambert, Editor 1973

Available from:

The State of Washington Water
Research Center
Allbrook Laboratory Building
Washington State University
Pullman, WA 99164-3002
(509) 335-5531

Publications List: Idaho Water Resources Research Institute (WRII)

A comprehensive listing of publications produced by the Idaho's WRII office.

Available from:

Idaho Water Resources Research
Institute
Morrill Hall 106
University of Idaho
Moscow, ID 83843
(208) 885-6429

The California Resource Guide to Agricultural Irrigation Services 1989

This guide lists incentives, special loans, technical assistance sources, irrigation services by organization, and includes complete directory of contacts.

Available from:

agAccess
P.O. Box 2998
Davis, CA 95617
(916) 756-7177

Irrigation Management

Small-Scale, Low-Cost Filters for Drip Irrigation Systems

B.W. Roberts and C.W. O'Hern 1990

Researchers at the Watkins Agricultural Research Center in Oklahoma have designed a "home made" filter as an alternative to the more expensive, commercially available systems. Designed primarily for small-scale

farm operations, the plans explain how to build a filter in a few hours with less than \$50 worth of materials.

For more information contact:

B.W. Roberts
Wes Watkins Agricultural Research &
Extension Center
Oklahoma State University
P.O. Box 128
Lane, OK 74555

Economic Optimization of Irrigation

M.J. English, A.G. Nelson, B.C.
Nakamura, K.C. Nielsen, G.S. Nuss 1983

The problems of scheduling, risk assessment, and system design for deficit irrigation (deliberately under irrigating a crop) are discussed. Economics of optimum irrigation practices are also outlined. Publication number: WRII-80 sells for \$4.

Efficiency Performance Criteria for Irrigation Systems

H.J. Hansen and M.M. Shearer 1983

A report of a study done in Oregon's Willamette Valley to determine the efficiency performance levels of existing irrigation pumping plants. Pump efficiencies are also discussed. \$4

Simulating Farm Irrigation System Energy

R.B. Wensink, J.W. Wolfe and M.A. Kizer 1976

The book reports the results of an Oregon State University study conducted to evaluate the total amount of non-renewable energy resources that are consumed in the irrigation process. Five portable and permanent sprinkler system types, plus trickle and gravity irrigation systems were studied. An evaluation of energy required to manufacture, install, operate and transport the equipment for the entire irrigation season was included in the analysis. The study was conducted in a variety of operating situations with varying acreage, consumptive

use rates, and total irrigation requirements.
Request publication number WRR-44. \$4.

**Subsurface Heating and Irrigation of Soils:
Its Effect on Temperature and Water
Content and on Plant Growth**

E.W.R. Barlow, A.R. Sepaskhah and L.L.
Boersma 1974

The practice, effectiveness, and efficiency
of heating and irrigating the soil below the
surface is outlined in this paper. Request
publication number WRR-23. \$4.

All four publications available from:

Water Resources Research Institute
210 Strand Agriculture Hall
Oregon State University
Corvallis, OR 97331
(503) 737-4022

Irrigation

C.H. Pair, Editor 1983

A technical reference for the design,
installation and operation of sprinkler irrigation
systems. Details of equipment, soil conditions,
plant requirements, water supply and efficient
water use are included. The appendix contains
charts and data for sizing systems, determining
capacities of structures, measuring flow, and
conversions. \$29.

**Winning With Water: Soil Moisture
Monitoring for Efficient Irrigation**

G. Richardson and P. Mueller-Beilschmidt
1988

Using gypsum blocks to monitor soil
moisture levels is described in detail. \$29.95.

Managing Irrigation with Gypsum Blocks

G. Richardson and P. Mueller-Beilschmidt
1989

A step-by-step guide to measuring soil
moisture with gypsum blocks. Water and cost
conserving methods of irrigation are detailed.
\$10 hardbound; \$4.50 paperback.

All three published by:

Inform
381 Park Avenue South
New York, NY 10016
(212) 689-4040

Irrigation: Design & Practice

B. Withers and S. Vipond 1980

Irrigation practices including system
design, drainage, flow measurements, land
preparation, feasibility studies, irrigation
practices, soil moisture, crop water use and
saline soil conditions are described in detail.
\$17.95.

Available from:

Cornell University Press
124 Roberts Place
P.O. Box 250
Ithaca, NY 14850
(800) 666-2211

Simplified Irrigation Design

Pete Melby 1988

A practical, clearly written manual on
irrigation design for beginners. Sprinkler and
drip irrigation design, use and installation are
described. Assembly of irrigation systems and
equipment is detailed. Charts and appendices
for calculating pipe sizes, flow water require-
ments and application rates are included.
\$29.95.

Published by:

PDA Publishers Corporation
115 Fifth Avenue
New York, NY 10003
(212) 254-9292

Tips on Irrigating Vegetables

Family Farm Series April 1986

A 16-page publication comparing
sprinkler, furrow, and drip irrigation systems
for small farms. Irrigation efficiency is
discussed in detail. Charts and appendices on
application rates, pipe and furrow size, flow
calculations and equipment are provided. No
charge.

Available from:

Small Farm Center
 ABS Extension
 University of California
 Davis, CA 95616
 (916) 757-8910

Quick Bibliography Series

Drip and Trickle Irrigation for Water Conservation QB 91-23

Water-Conserving Irrigation QB 89-35

Wastewater Irrigation QB 90-64

Nonpoint Source Pollution, an Agricultural Concern QB 89-77

Ground Water Contamination QB 90-62

Available from:

Alternative Farming Systems Information Center, see the *Organizations* section for ordering information

Management Techniques

Permanent Raised Beds

John Sundquist

A one-page informational handout on permanent raised beds by a Pacific Northwest farmer. Details on how to create raised beds and retrofitting equipment is included. No charge; send a self addressed stamped envelope.

Available from:

John Sundquist
 River's Turn Farm
 31139 Lane's Turn Road
 Eugene, OR 97401
 (503) 683-1905

Water Walls

Water walls are designed to help contain flooding, sedimentation, and to store water. They can be used: as temporary dams; to make viable aquaculture-rearing units; as portable water storage units; experimentally

agriculture to direct run-off in fields; and, to assist managing areas with poor drainage.

For more information contact:

Water Structures Unlimited
 Dave Doolaege
 P.O. Box 206
 Carlotta, CA 95528
 (707) 768-3439

Water-Efficient Demonstration Garden

The Seattle Water Department is sponsoring a water-conserving demonstration garden at the South Seattle Community College Arboretum. Many plants native to the Pacific Northwest as well as drought-tolerant ornamentals are displayed. Some water conserving techniques such as drip irrigation, soaker hoses, moisture sensitive probes, soil amendments, mulch and cultural practices are displayed.

For more information contact:

South Seattle Community College
 6000 - 16th Avenue SW
 Seattle, WA 98106
 (206) 764-5336

Water Quality

Effects of Conservation Tillage on Groundwater Quality

T.J. Logan, J.M. Davidson, J.L. Baker and M.R. Overcash 1987

Potential contamination of groundwater and surface water by nitrates and pesticides as a result of widespread shifts from inversion tillage to conservation tillage are the focus of this book. The effects of conservation tillage on physical, chemical, and biological processes in soil and on surface and groundwater hydrology are included.

Environmental Impacts of Agricultural Production Practices

L.W. Canter 1986

Both published by:

Lewis Publishers, Inc.
121 South Main Street
P.O. Drawer 519
Chelsea, MI 48118
(800) 525-7894

Health Guidance Levels for Agricultural Chemicals in Groundwater

National Agricultural Chemicals Association 1985

Available from:

National Agricultural Chemicals Association
1155 - 15th Street NW
Washington, D.C. 20005

Killing the Hidden Waters

C. Bowden 1985

An engaging account of the depletion of groundwater in the Southwest. The author contrasts modern, highly consumptive desert lifestyles with those of aboriginal inhabitants and suggests trying to construct a sustainable society. \$7.95.

Available from:

University of Texas Press
P.O. Box 7819
Austin, TX 78713-7233
(800) 252-3206

Managing Nitrogen for Groundwater Quality and Farm Profitability

A 378-page booklet published by the Soil Science Society of America (SSSA). \$36.

Available from:

SSA Headquarters Office
Book Order Department
677 South Segoe Road
Madison, WI 53711-1086

Pesticides and Groundwater: A Guide for the Pesticide User

The 17-page guide discusses groundwater movement and factors that increase the risk of contamination. Written for pesticide users and rural residents concerned about groundwater contamination, the guide outlines pesticide properties, soil properties and site factors are all discussed. Publication No. NRAES-34; \$3.25.

Available from:

Northeast Regional Agricultural Engineering Service
152 Riley Robb Hall
Cornell University Cooperative Extension
Ithaca, NY 14853
(607) 255-7654

Pesticides in Soil and Water

W.D. Guenzi, Editor

A comprehensive review of the principles of environmental effects of pesticide-soil-water interactions. Pesticide movement in soil and surface water, adsorption, volatilization, degradation and persistence, plant uptake, detoxification, and sampling are detailed. The influence of pesticides on micro-organisms in soil and water on non-target invertebrates in fresh water is also discussed. \$20.

Available from:

Soil Science Society of America
677 South Segoe Road
Madison, WI 53711
(608) 273-8080

Pesticides: Surface Runoff, Leaching, and Exposure Concerns

R.L. Becker, D. Herzfeld, K.R. Ostlie, and E.J. Stamm-Katovich

Information is provided on physical properties of commonly used pesticides. Movement off-site through leaching or surface run-off and potential to adversely affect water quality are described. Tables on toxicology of

pesticides, restricted use pesticides, and pesticide properties in the soil are included. \$2.

Available from:

Minnesota Extension Service
University of Minnesota
St. Paul, MN 55108
(612) 625-8173

Planning for Groundwater Protection

William Page, Editor 1987

The book provides information about: contamination processes; groundwater systems; and options to protect from and respond to contamination. Program development and management procedures are outlined. \$49.95.

Published by:

Academic Press
1250 Sixth Avenue
San Diego, CA 92101
(619) 231-0926

Private Drinking Water Supplies: Quality, Testing, and Options for Problem Waters

Northeast Regional Agricultural Engineering Service (NRAES) 1991

A 60-page bulletin outlining drinking water quality and testing information. \$6.

Available from:

NRAES
152 Riley-Robb Hall
Cornell Cooperative Extension
Ithaca, NY 14853-5701
(607) 255-7654

Protecting Groundwater from Agricultural Chemicals: Alternative Strategies for Northwest Producers

Christine Kaufmann and Nancy Matheson
1990

Reducing threats to groundwater quality requires an understanding of the interactions among the physical, chemical, and biological resources of production systems. The guide was written for farmers, ranchers, researchers,

extension agents, conservationists, and pesticide applicators. \$4 single copy; \$3 each for 5 or more copies.

Available from:

AERO
44 North Last Chance Gulch
Helena, MT 59601
(406) 443-7272

Pump Test Requirements for Groundwater Right Holders

Water Resources Department of Oregon
January 1990

The booklet outlines pump requirements and specifications, and how to test pumps including listings of testing operators. Free.

Available from:

Water Resources Department
3850 Portland Road NE
Salem, OR 97310
(503) 378-3739

Rural Clean Water Program (RCWP)

Environmental Protection Agency 1990

RCWP projects implemented by the EPA and existing local and state agencies in various states to control agriculturally generated nonpoint source pollution are described. Lessons learned from these programs are discussed. The program in Tillamook Bay employing BMP to lessen fecal coliform bacteria counts in the Bay is detailed.

Available from:

EPA Headquarters
401 Main SW
Washington, D.C. 20460
(202) 382-5043

Soils for Management of Organic Wastes and Waste Waters

L.F. Elliott and F.J. Stevenson, Editors

Chapters on properties of wastes and wastewaters; effects of waste application on nutrient cycles, special utilization and disposal problems, and special environments considerations are included. \$23.

Available from:

American Society of Agronomy
677 South Segoe Road
Madison, WI 53711
(608) 273-8080

Water Resources: Issues and Strategies

Adrian McDonald and David Kay 1989

Management problems and strategies for more equitable and efficient resource control in developed and developing countries is outlined. Water quality, water supply, flooding, and hydropower are discussed in detail. Appropriateness and sustainability of systems are also discussed. \$36.95.

Published by:

John Wiley & Sons Inc.
605 Third Avenue
New York, NY 10158-0012
(800) 879-4539

Water for Every Farm - Using the Keyline Plan

P.A. Yeomans 1981

Published by:

Second Back Row Press Pty. Limited
Gevett Street
Katoomba 2780
Australia

Water Quality Self-Help Checklist

American Farm Bureau

A detailed checklist to aide users in analyzing the domestic and farm water quality. How to take water samples and suggested local and individual actions are outlined. \$1.

Available from:

American Farm Bureau Federation
Natural and Environmental Resources
Division
225 Touhey Avenue
Park Ridge, IL 60068
(312) 399-5700

Extension Publications

See the *Extension* section of this guide for information about ordering OSU, WSU, PNW and University of California Publications. Be sure to include the publication number when ordering.

WSU Extension Publications

Simple Irrigation Schedule Using Pan Evaporation EB 1304 25¢

Sprinkler Irrigation: Application Rates and Depths EB 1305 25¢

Optimal Irrigation Management Under Conditions of Limited Water Supply EB 1498 75¢

Irrigation Requirements for Washington: Estimates and Methodology EB 1513 \$1.50

Clean Water for Trickle Irrigation EM 4052 25¢

Clean Water for Washington EB 1634 25¢

Comparing the Costs of Leasing or Buying a Sprinkler Irrigation System EM 4106

Application of Herbicides Through Irrigation Systems MISC 0091 25¢

WSU Drought Advisory: Sweet Corn EM 4815 Free

WSU Drought Advisory: Hop Management in Water-Short Periods EM 4816 Free

WSU Drought Advisory: Business Strategies for Controlling Drought Risk EM 4818 Free

WSU Drought Advisory: Pastures and Grass Hay EM 4819 Free

WSU Drought Advisory: Tree Fruits EM 4820 Free

WSU Drought Advisory: Visual Crop Moisture Stress Symptoms EM 4821 Free

WSU Drought Advisory: Irrigation System Evaluation EM 4822 Free

WSU Drought Advisory: Asparagus Irrigation in a Water-Short Year EM 4823 Free

WSU Drought Advisory: Alfalfa Irrigation with Reduced Water Supplies EM 4824 Free

WSU Drought Advisory: Scientific Irrigation Scheduling EM 4825 Free

WSU Drought Advisory: Surge Flow Surface Irrigation EM 4826 Free

WSU Drought Advisory: Mint Irrigation Management EM 4827 Free

WSU Drought Advisory: Surface Irrigation Systems EM 4828 Free

WSU Drought Advisory: Water Conservation, Weed Control Go Hand in Hand EM 4829 Free

WSU Drought Advisory: Vegetable Crops EM 4830 Free

WSU Drought Advisory: Grapes EM 4831 Free

WSU Drought Advisory: Set-Move and Permanent Sprinkle Irrigation Systems EM 4832 Free

WSU Drought Advisory: Oilseed Rape Keeps Irrigated Land Productive EM 4833 Free

OSU Extension Publications

Consumptive Use and Net Irrigation Requirements for Oregon CI 628

Irrigation Water Quality FG 76

Rural Domestic Water Supply EC 1374

Understanding Your Right to Irrigation Water EC 1274

PNW Publications

Pumping Plant Efficiencies PNW 285 25¢

Offsets for Stationary Sprinkler Systems PNW 286 25¢

Irrigation Runoff Control Strategies PNW 287 25¢

Irrigation Scheduling PNW 288 25¢

Converting Sprinkler Systems to Lower Pressure PNW 289 25¢

Sizing Irrigation Mainlines and Fittings PNW 290 25¢

Electrical Demand Charges--How to Keep Them Low PNW 291 25¢

Extending Electric Motor Life PNW 292 25¢

Irrigation System Walk-Through Inspection Analysis PNW 293 25¢

Conserving Water in Agriculture: Stretching Irrigation Water Supplies PNW 294 25¢

Stretching Irrigation Water Supplies PNW 323 25¢

University of California Publications

Determining Daily Reference Evapotranspiration #21426 \$1

Does Drip (and other low-flow) Irrigation Save Water? #21380 50¢

Drip Irrigation #2740 50¢

Drought Tips for Vegetable and Field Crop Production #21466 \$2

Drip Irrigation Management #21259 \$2.50

Drought Irrigation Strategies for Deciduous Orchards #21453 \$1

Everybody's Guide to Water Terms #24103 50¢

Irrigating Deciduous Orchards #21212 \$3

Irrigation on Steep Land #2825 \$1

Postharvest Irrigation of Orchards #2767 \$1

Saving Water in Home Orchards #7098 Free

Soil and Water Management for Home Gardeners #2258 \$1

Using Reference Evapotranspiration and Crop Coefficients to Estimate Crop Evapotranspiration: Agronomic Crops, Grasses, and Vegetable Crops #21427 \$1

Using Reference Evapotranspiration and Crop Coefficients to Estimate Crop Evapotranspiration; Trees and Vines #21428 \$1

The Water Budget Method-Irrigation Scheduling for Southern San Joaquin Valley Deciduous Orchards #21419 \$1

Irrigation Scheduling: A Guide for Efficient On-Farm Water 21454 \$6 A comprehensive guide that explains the water budget approach to irrigation. Information on how to determine soil texture, bulk density, field capacity, and available water is included. How to compensate for slow-permeability soils, shallow water tables, and salinity are discussed.

Periodicals

The periodicals listed below often print articles about water resources, irrigation, and conservation methods. See the *Periodicals* section of this guide for more information.

Conservation Impact
Farmer-Stockman
The New Farm
Soundwaves
Water Talk

Videos

See the *Video Tapes and Other Media Offerings* section of this guide for more information

The Key to Effective Irrigation
The Model 100 Moisture Meter
Watershed Enhancement: Building Oregon's Future

Organizations and Agencies with Agricultural Water Resource Management Affiliations

Washington Cooperative Water Quality Program

A team of five agents work as an interdisciplinary, water quality resource team for four counties in Washington. They are funded by: the Washington State Legislature; Kitsap, Mason, Jefferson, and Thurston Counties; the Department of Ecology; Puget Sound Water Quality Authority; University of Washington Sea Grant; and, Washington State University Cooperative Extension. Support staff provide information about water quality and growth management activities, and facilitate public participation in local decision making. They also provide voluntary, locally-based, water quality education that promotes stewardship and encourages participation.

Area Extension Agents for Water Quality*Jefferson County:*

WSU Cooperative Extension
P.O. Box 572
Port Townsend, WA 98368
(206) 385-9158

Kitsap County:

University of Washington Sea Grant
Program
Courthouse Annex
Box 146
Port Orchard, WA 98366
(206) 876-7157

Mason County:

WSU Cooperative Extension
University of Washington Sea Grant
Program
9 Federal Building
Shelton, WA 98584
(206) 427-9670

Thurston County:

WSU Cooperative Extension
921 Lakeridge Drive SW
Olympia, WA 98502
(206) 786-5445

Idaho Citizens Network

A nonprofit, statewide, citizens' action organization that deals with a broad range of social justice and economic issues. They are assisting in the development of the state's groundwater protection policy. They publish a quarterly newsletter, the *Citizen's Networker*.

For more information contact:

Idaho Citizens Network
1024 West Hays
Boise, ID 83702
(208) 336-0997

Northwest Area Operators Association, Inc.

The Association is composed of irrigation districts throughout the Pacific Northwest. They hold an annual three day conference. Every other year there is a tour of one of their facilities. The organization is designed to share new ideas and educate irrigators throughout the districts. Topics or areas covered are: water rights, pump and system efficiency, pipe lines and canal lines.

For more information contact:

Northwest Area Operators
Association, Inc.
c/o U.S. Bureau of Reclamation
Boise, ID 83724
(208) 334-1175

Northwest Renewable Resources Center (NRRC)

NRRC is a nonprofit organization providing professional mediation services in complex multi-party conflicts arising over the management and use of natural resources, including water, land, timber, fish, and hydroelectric power. Governed by a board of industry, tribe, environmental organization, and government agency representatives, NRRC acts as a neutral mediation party. NRRC mediated the Timber/Fish/Wildlife Project in Washington and the Water Antidegradation Policy Negotiations in Idaho.

For more information contact:

Northwest Renewable Resources
Center (NRRC)
1133 Dexter Horton Building
710 Second Avenue
Seattle, WA 98104
(206) 623-7361
Contact: Amy C. Solomon, Executive
Director

Association of Conservation Districts (ACD)

ACD is a national, voluntary, nonprofit association of soil and water conservation districts and water control districts, providing a unified voice for conservation. Primary activities of the districts include soil erosion control; conservation and development of water

resources; control of water pollution from agricultural nonpoint sources; and protection, conservation, development and enhancement of the quality and productive potentials of land and water resources. There are state offices in both Oregon and Washington.

For more information contact:

Oregon Association of Conservation
Districts
Harold Lampi, President
Hamlet Route, Box 523
Seaside, OR 97138
(503) 738-5998

Washington Association of
Conservation Districts
J. Read Smith, President
Route 1, Box 69
St. John, WA 99171
(509) 648-3922

OSU Extension Energy Program

The Extension Energy Program publishes a number of video tapes and bulletins on irrigation. A catalog of publications is available at no charge from the OSU campus office. Some of the publications related specifically to agriculture are also available at no charge including: *Irrigation Pump Efficiency Test* (#A303), *Maintaining Impact Sprinklers* (#A304), *Electric Motor Load Test* (#A305). The *Montana Irrigators Pocket Guide* is available from \$3. Video tapes available are listed in the Video section of this guide.

For more information contact:

Extension Energy Program
Oregon State University
Batcheller Hall 344
Corvallis, OR 97331-2405
(503) 737-3004

Oregon Water Well Association (OWWA)

OWWA organized as a trade association in November 1949. An affiliate member of the National Water Well Association, the objectives of the Oregon association are: to assist and support the groundwater industry; to promote research and education of drilling,

conservation and protection of groundwater; to improve the standards and methods of drilling; to prevent pollution and conserve supplies; to keep members informed on industry matters; and, to improve the public image of the groundwater industry.

For more information contact:

Oregon Water Well Association
(OWWA)
12170 West Stark Street
Portland, OR 97229
(503) 644-4039

Palouse-Clearwater Environmental Institute

An environmental education organization organized to involve citizens in public, environmental decisions. The group works with agricultural, water quality, energy and waste issues. They conduct "adopt a stream" programs in the area and publish a quarterly newsletter.

For more information contact:

Palouse-Clearwater Environmental
Institute
P.O. Box 8582
Moscow, ID 83843
(208) 882-1444

Agricultural Stabilization and Conservation Service (ASCS)

Administer federal cost-share programs which provide financial assistance to farmers for conserving irrigation water and reducing nonpoint source pollution to improve water quality.

For more information contact:

Agricultural Stabilization and
Conservation Service
U.S. Department of Agriculture
Oregon State Office
Room 1524, Federal Building
1220 SW Third Avenue
Portland, OR 97204
(503) 326-2733

Agricultural Stabilization and
Conservation Service
U.S. Department of Agriculture
Washington State Office
818 East Fifth Street
Olympia, WA
(206) 753-9448

Soil Conservation Service (SCS)

The SCS implements technical and financial assistance programs relating to soil and water resources through local Soil and Water Conservation Districts. Additionally they establish and maintain a data base and issue Water Supply Outlook and Forecast reports. The USDA-SCS is represented in Oregon and Washington through state offices, with area offices (four in Washington; three in Oregon) and field offices (48 in Washington; 33 in Oregon) located throughout each state.

For more information contact:

Soil Conservation Service
U.S. Department of Agriculture
Oregon State Office
Room 1640, Federal Building
1220 SW Third Avenue
Portland, OR 97204
(503) 221-2751

Soil Conservation Service
U.S. Department of Agriculture
Washington State Office
Rock Pointe Tower No. 2, Suite 450
West 316 Boone Avenue
Spokane, WA 99201-2348
(509) 353-2337

U.S. Environmental Protection Agency

Agency Water-Related Activities include: management of drinking water programs; management of water quality programs; issue water permits and monitor compliance; and implement policy programs.

For more information contact:

Region 10 Regional Office
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-1200

Oregon Operations Office
811 SW Sixth Avenue
Portland, OR 97204
(503) 221-3250

Water Resources Research Institutes (WRRI)

The WRRI centers are sponsored by the U.S. Geological Survey to foster, encourage and facilitate research and education related to all factors that affect the quantity and quality of water resources in their respective areas. Multi-disciplinary efforts required for solving critical water problems are coordinated and technology is transferred through seminars, research projects and publication dissemination.

For more information contact:

WRRI
University of Idaho
Morrill Hall 106
Moscow, ID 83843
(208) 885-6429

WRRI
Oregon State University
Strand Agriculture Hall
Corvallis, OR 97331-2410
(503) 737-2410

Water Research Center
Washington State University
Albrook Lab Building
Pullman, WA 99164-3002
(509) 335-5531

Table 1. A list of water testing laboratories in Washington and Oregon. Laboratories that are not available for public use are not included.

LABORATORY	ADDRESS	PHONE NUMBER	----- CONTAMINANT GROUP -----					
			MICRO	INORGANIC	ORGANIC	TTHM'S	RADS	VOC'S
AM Test, Inc.	14603 NE 87th Redmond, WA 98052	(206) 885-1664	---	Yes	---	---	---	---
Applied Science Lab	P.O. Box 195 Netarts, OR 97143	(503) 842-5366	Yes	---	---	---	---	---
Aquatic Analysis	11650 SW Pacific Hwy. Portland, OR 97223	(503) 620-5908	---	*	---	---	---	---
BWR Associates	P.O. Box 4577 Medford, OR 97501	(503) 779-2646	Yes	---	---	---	---	---
Century Testing Labs	P.O. Box 1174 Bend, OR 97709	(503) 382-6432	Yes	Yes	Yes	Yes	---	---
CH2M/Hill Environ. Labs	P.O. Box 428 Corvallis, OR 97339	(503) 752-4271	Yes	Yes	Yes	Yes	Yes	Yes
CH2M/Hill Environ. Sci. Lab	2218 Railroad Avenue Redding, CA 96001	(916) 243-5831	---	Yes	Yes	Yes	Yes	---
Coffey Laboratories, Inc.	4914 NE 122nd Avenue Portland, OR 97230	(503) 254-1794	Yes	Yes	Yes	Yes	---	Yes
Coffey Laboratories, Inc.	20 SW Emigrant Pendleton, OR 97801	(503) 276-0385	Yes	---	---	---	---	---
Columbia Laboratories, Inc.	P.O. Box 40 Corbett, OR 97019	(503) 695-2287	Yes	---	Yes	---	---	---
D. H. McCowan Laboratory	178 W Commercial St. Coos Bay, OR 97420	(503) 267-7853	Yes	---	---	---	---	---
Douglas County Water Lab	621 W Madrone Roseburg, OR 97470	(503) 440-3571	Yes	---	---	---	---	---
Food Products Laboratory	4110 NE 122nd Ave. Suite 1 Portland, OR 97230	(503) 253-9136	Yes	---	---	---	---	---
Food Quality Analysis, Inc.	6400 SW Canyon Court #80 Portland, OR 97225	(503) 297-3636	Yes	---	---	---	---	---

Continued

LABORATORY	ADDRESS	PHONE NUMBER	----- CONTAMINANT GROUP -----					
			MICRO	INORGANIC	ORGANIC	TTHM'S	RADS	VOC'S
Grants Pass Water Lab	5577 Jerome Prairie Rd. Grants Pass, OR 97543	(503) 476-0733	Yes	Yes	---	---	---	---
Hermiston, City of WTR/WST Lab	2205 N First Place Hermiston, OR 97838	(503) 567-5272	Yes	Yes	---	---	---	---
Klamath Environ. Service	200 E Main Street Klamath Falls, OR 97601	(503) 882-8677	Yes	*	---	---	---	---
Lane County Water Lab	135 E Sixth Avenue Eugene, OR 97401	(503) 687-4180	Yes	Yes	---	---	---	---
Medford Water Lab	4007 Crater Lake Avenue Medford, OR 97504	(503) 772-3148	Yes	---	---	---	---	---
MEI-Charlton, Inc.	2233 SW Canyon Road Portland, OR 97201	(503) 228-9663	---	Yes	Yes	---	---	---
Neilson Research Crop.	446 Highland Drive Medford, OR 97504	(503) 770-5678	Yes	Yes	---	---	---	---
Northwestern Aquatic Sci.	P.O. Box 1437 Newport, OR 97365	(503) 265-7225	Yes	---	---	---	---	---
OR Analytical Lab-PGE	14655 SW Old Scholls Fwy. Portland, OR 97225	(503) 644-5300	---	Yes	---	---	---	---
Umpqua Research Company	626 NE Division Street Myrtle Creek, OR 97457	(503) 863-5201	Yes	Yes	Yes	Yes	Yes	Yes
United States Testing Co., Inc.	2800 George Washington St. Richland, WA 99352	(509) 375-3131	---	---	---	---	Yes	---
Water Analysis and Consulting	304 Blair Blvd. Eugene, OR 97402	(503) 485-8404	Yes	Yes	Yes	Yes	---	---
Water, Food and Research Lab	13035 SW Pacific Hwy. Portland, OR 97223	(503) 639-9311	Yes	Yes	---	---	---	---
Waterlab	2609 - 12th Street SE Salem, OR 97477	(503) 363-0473	Yes	Yes	---	---	---	---

Contaminant Group Names: MICRO = Microbiological, TTHM's = Total Trihalomethanes, RADS = Radiological, VOC's = Volatile Organic Chemicals, * = Nitrate Testing Only



ON-FARM EXPERIMENTATION

General Resources Organizations and Projects

On-farm experimentation plays a unique role in the research of sustainable agriculture. Recommended methods or practices farmers wish to test on their own farm may be researched in various ways. Trials may be completely farmer initiated and run, or projects may be a joint effort of researchers, farmers, and extension agents. Examples of various types of trials can be found in the organizations listed below.

The following is not a complete list of resources or organizations that participate in on-farm experimentation: the number of organizations and universities participating in on-farm research is growing rapidly. However, this list is included to provide an overview of the various types of projects in existence and some of the resources available.

General References

Farmer Participation in Research for Sustainable Agriculture

A report of a conference held in October 1989, in Fayetteville, Arkansas. Thirty-five farmers and scientists addressed many aspects of on-farm research including project planning, choosing appropriate topics of study, finding funding and project cooperators. Case studies of on-farm research sites are included. \$5.75.

Available from:

Appropriate Technology Transfer for
Rural Areas
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140

A Farmer's Approach to On-Farm Design

Dick and Sharon Thompson

A detailed summary of how to set up simple on-farm experimental plots. Details on how to collect, record, and analyze data are provided. \$4.50.

Available from:

Thompson's On-Farm Research
Dick and Sharon Thompson
RR 2 Box 132
Boone, IA 50036
(515) 432-1560

A Farmer's Guide to On-Farm Research

Rhonda Janke, Dick Thompos, Ken
McNamara, and Craig Cramer 1990

A straight-forward, practical guide written for farmers. The handbook includes information on statistically validity, planning experiments, data collection, analysis, and plot design. \$4.95 plus \$1.50 shipping.

Available from:

Rodale Institute
222 Main Street
Emmaus, PA 18098
(215) 967-5171

Farming Systems Research

Jayne MacLean 1989

A "Quick Bibliography" from the Alternative Farming Systems Information Center. For ordering information see the National Agricultural Library listing in the *Organizations* section of this guide.

**How To Do On-Farm Research--
The Easy Way**

Ross Penhallegon 1991

A compilation of information from a variety of sources collected by an Oregon Extension Agent. \$5.

Available from:

Ross Penhallegon
Lane County Extension Office
950 West Thirteenth Street
Eugene, OR 97402
(503) 687-4243

Illinois On-Farm Demonstration Project

A compilation of project results of the Illinois On-Farm Demonstration Project. This project is a cooperative effort of the Illinois Sustainable Agriculture Society, the Illinois Department of Energy and Natural Resources, and the American Farmland Trust. No agronomic interpretation is given but comments of the participants are often included. Contact the American Farmland Trust for the most recent edition. Free.

Available from:

Midwest Regional Office
American Farmland Trust
407 South Dearborn, Suite 1550
Chicago, IL 60605

On-Farm Research 1988

A report on low-input systems using rotation on demonstration farms in southwest Ontario.

Available from:

Resource Efficient Agricultural
Production-Canada
Box 125
MacDonald College
St. Anne de Bellevue
Quebec H9X 1C0, Canada

On-Farm Testing: A Grower's Guide

Baird Miller, Ed Adams, Paul Peterson
and Russ Karow 1992

The guide is intended to provide growers already conducting on-farm testing with a tool to refine their testing system. It also provides growers considering on-farm testing for the first time a basic background in testing theory and procedures. The guide is narrowly focused on one type of test: replicated strips. This type of test is similar to research done by university researchers and is the easiest to statistically analyze and interpret. Details on field layout, record keeping, and data analysis are given. \$1.

Available from:

WSU Bulletin Office--see the *University Resources* section of this guide for ordering information

On-Farm Research Techniques

W. Lockeretz and M. Anderson 1991

The issues surrounding on-farm research, what it can and cannot accomplish, when it is appropriate, and how to conduct on-farm trials is the topic of this handbook from the Institute for Alternative Agriculture (IAA). \$6.

Available from:

IAA
9200 Edmonston Road, #117
Green Belt, MD 20770
(301) 441-8777

Outline and Notes for Reporting the Results of an On-Farm Experiment

Steven Franzel and Ann Stroud

The paper discusses a suggested format for reporting on-farm experiments, with information about planning trials. The information is based on Farming Systems Research done in developing countries. Free.

Available from:

IPPC
Cordley Hall
Oregon State University
Corvallis, OR 97331
(503) 737-3541

Reshaping the Bottom Line: On-Farm Strategies for a Sustainable Agriculture

David Granatstein 1988

This publication is intended to provide conservation-minded farmers with a collection of ideas on sustainable practices being used on farms in the Midwest. On-farm experimentation, soil fertility, managing weeds and pests, pastures, alternative crops and other innovations are discussed. \$9.

Available from:

Land Stewardship Project
512 West Elm Street
Stillwater, MN 55082
(612) 430-2166

Resource Audit and Planning Guide for Integrated Farm Management

Small Farm Resources Project 1987

Compiled to assist farm families in analyzing their farm enterprises, resources, and the interrelationships that exist among them. The guide offers an alternative to the Enterprise Record Keeping System and outlines an approach to farm management that includes family goals and interests. \$5 plus \$1.50 shipping.

Resourceful Farming: A Primer for Family Farmers

Small Farm Resources Project and
Twenty-Three Cooperating Farm Families
1987

A report of on-farm experiments coordinated by the Small Farms Research Project (SFRP) and initiated and conducted by farmers. Some of the research topics include: composting manures; alternative crops and legumes; time-controlled grazing; and biological weed management. Included are various definitions of sustainable practices and philosophies held by participants. \$7 plus \$1.50 shipping. For more information about the SFRP see the listing below.

Both handbooks available from:

Center for Rural Affairs
P.O. Box 405
Walthill, Nebraska 68067
(402) 846-5428

ORGANIZATIONS AND PROJECTS

Western Oregon On-Farm Research and Education Project

The project offers small grants (up to several hundred dollars per farm) to farmers in western Oregon to manage and conduct trials on their own farms. A coordinator is available to help farmers in western Oregon with questions about trial design, analysis, and interpretation of results. The project also helps to facilitate farmer-to-farmer information

exchange through meetings, field tours, and other activities.

For more information contact:

John Luna
Department of Horticulture
Ag & Life Sciences Building 4017
Oregon State University
Corvallis, OR 97331-7304
(503) 737-5430

Alternative Energy Resources Organization (AERO)

AERO offers small grants to local producer groups in Montana to organize on-farm research or demonstration projects that "facilitate farmer-to-farmer networking and foster local efforts to develop environmental sound, sustainable production." See the *Organizations* section of this guide for more information.

Small Farm Resources Project (SFRP)

SFRP began as the Small Farm Energy Project in 1976, and has expanded to work with conservation-minded farmers in 1983. SFRP and cooperating farm families advocate farming that is sustainable economically, socially and environmentally. They have designed on-farm experimentation that aims to optimize farm and family resources. The SFRP is managed by the Center for Rural Affairs in Walthill, Nebraska; see the *Organizations* section of this guide for more information.

Kerr Center for Sustainable Agriculture, Inc.

The Kerr Center, Oklahoma State University, Texas Department of Agriculture, Texas A&M Extension, University of Arkansas Research and Extension, and cooperating farmers have been conducting on-farm experimentation and demonstration projects on pest management. This unique program began with cooperating farmers meeting with researchers and implementing preliminary field station research on various pest management topics. The following year farmers chose experiments

on integrated pest management or alternative pesticide sprays to test on their own farms. Videotapes and publication will be produced. The Kerr Center's on-farm experimentation is an on-going project; see the *Organizations* section of this guide for more information.

Land Stewardship Project

The Land Stewardship Project helps coordinates on-farm experimentation programs from four different offices in Minnesota. Some of the projects are randomized, replicated trials, others sites are designated as demonstration plots. Farmers submit their own proposals or choose to collaborate on existing experiments on the following topics: controlled grazing, nitrogen management, composting and mechanical weed control. Information is disseminated by newsletters, booklets, reports, videos, field days, winter meetings and workshops; see the *Organizations* section of this guide for more information.

Middle Border On-Farm Research Consortium

This consortium is led by three nonprofit organizations: the Land Stewardship Project of Minnesota; the Kansas Rural Center; and the Nebraska Sustainable Agriculture Society. Their purpose is to exchange information and ideas and to conduct on-farm research. Workshops, meetings and field days are held. Videotapes are also made and are available to the public.

For more information contact:

Patrick Moore
Land Stewardship Project
103 West Nichols
Montevideo, MN 56265
(612) 269-2105

Practical Farmers of Iowa

A nonprofit organization whose voting members must reside in Iowa and gain a significant part of their income from farming. Their two primary goals are to provide farmers access to information and experience about environmentally sound, lower cost, profitable

farming techniques and to encourage and guide research aimed at producing more such information. On-farm research is conducted throughout Iowa with assistance from Iowa State University. A cooperative effort of researchers, extension, and farmers is being utilized to plan experiments, collect and evaluate data and transfer information. Winter workshops and summer field days help to disseminate information to the agricultural community. Some techniques researched include: ridge till with reduced or zero herbicide applications; nitrogen applied with planter and cultivator only; leaf tissue tests to determine plant nutrient levels; and fall cover crops as ground cover, weed control, nitrogen production and soil tilth enhancers. All tests have six replicated, randomized strips for each treatment so that statistical analysis may be made.

Practical Farmers of Iowa have another program, *Sustainable Projects*, that allows citizen of Iowa to carry out activities that focus on sustainable agriculture. These programs can include on-farm trials, school or FFA programs, or community education and outreach. Grants of up to several hundred dollars are given. The projects selected for 1990 represent initiatives in row cropping and horticulture by researchers and farmers.

For more information contact:

Practical Farmers of Iowa
RR 2, Box 132
Boone, IA 50036
(515) 432-1560

Progressive Farmers Inland Northwest

A grower organization whose primary goal is to conduct farmer initiated on-farm research. They work in cooperation with Washington State University. Projects were initiated in 1990.

For more information contact:

Progressive Farmers Inland Northwest
Route 4, Box 236
Walla Walla, WA 99362
(509) 525-2494

Rodale Research Center and Institute

The Rodale Institute collaborates with farmer to conduct on-farm research and demonstration trials based on reducing purchased inputs. Trials are designed by farmers with technical assistance from Rodale staff. Plot sizes are determined by farmer equipment and size of field. Some trials that have been initiated include various nitrogen, phosphorous, and potassium rates coupled with manure applications, legumes as green manure crops, rotational grazing systems and various vegetable production systems.

For more information contact:

Rodale Research Center and Institute
222 Main Street
Emmaus, PA 18099-0015
(215) 967-5171

NOTES

"Do what you can, with what you have, where you are."

Theodore Roosevelt



MARKETING

General References
Extension Publications
Bibliographies
Organizations
Periodicals
Organic Marketing
References
Farm-Direct Market Guides
Farmers' Markets
Commodity Commissions

Marketing is a critical factor in any farming operation. Each farm searches for their niche in the marketplace. This section provides a diversity of information about several marketing approaches.

General References

ADAPT 2 Conference Proceedings

Includes a brief overview of many agricultural diversification ideas from a conference held December 3-4, 1987 in Kansas City, Missouri. Topics include variations on traditional crops, fruits, vegetables, animal industries, tree products, other specialty crops, aquaculture, cottage industries, and marketing. \$12.95.

Available from:

Successful Farming
Attention: Tammy Sindergard
1716 Locust Street
Des Moines, IA 50336

Agricultural Situation and Outlook

A Pacific Northwest Cooperative Extension publication reporting annual commodity situation and outlook for products such as processing vegetables, small fruits and nuts. Also included are sections on the economy and international trade. Published annually as an insert in the January issue of the *Oregon*

Farmer Stockman, Washington Farmer Stockman, and Idaho Farmer Stockman.

Reprints are available through local county extension offices or by writing to the Bulletin office at WSU.

For information about ordering from WSU:

See the *University Resources* section of this guide

The Agricultural Marketing System

V.J. Rhodes 1983

Commodity handling, pricing, and product merchandising are examined in a system-wide context. Emphasis is on futures markets, international and group markets, transportation, food wholesaling and retailing, cooperatives, bargaining associations, and marketing orders. \$37.50.

Published by:

John Wiley and Sons, Inc.
Distribution Center
One Wiley Drive
Somerset, NJ 08875-9976
(800) 879-4539

Backyard Cash Crops: The Sourcebook for Growing and Marketing Specialty Crops
Craig Wallin 1989

A reference book to help find a niche market and to locate additional information needed to maximize profit. Specific crops described include bulbs, flowers, tree crops, bonsai, small fruit, sprouts, mushrooms, and vegetables. \$15.95.

Available from:

Homestead Designs
P.O. Box 1058
Bellingham, WA 98227
(206) 676-5647

Crop and Livestock Reporting Services

The State Departments of Agriculture, in cooperation with the USDA Statistical Reporting Service, offer annual reports of vegetable crops and statistics including total acreage, production, value, and acreage by county. To receive a report for specific areas, request a "Crop and Livestock Reporting Service Release List Order Form."

Available from:

USDA-SRS
Crop Reporting Board
Publications
Room 5829, South Building
Washington, D.C. 20250

Direct Marketing Handbook

Oregon Department of Agriculture
Discusses: how to direct-market produce; regulations regarding direct sales; and rules governing market operations. Free.

Available from:

Agriculture Development and
Marketing Division
Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97310-0110
(503) 229-6734

Direct Marketing Resource Notebook
Minnesota Extension Service

Includes information on starting a business, marketing, economics, postharvest handling, insurance, personnel management, and other topics of interest to direct marketers. \$19.

Available from:

Ramsey Company Extension Service
2020 White Bear Avenue
St. Paul, MN 55109

Directory of Export and Trade Assistance
National Agricultural Library (NAL) 1992

The addresses and telephone numbers of key contacts in agricultural exporting and lists of selected exporting databases and publications are contained in the directory. The directory is intended to assist U.S. businesses involved in exporting agricultural products. Available free; send a self-addressed mailing label to the NAL at the address listed below.

Available from:

National Agricultural Library,
Room 304
10301 Baltimore Blvd.
Beltsville, MD 20705-2351

Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises

Farming Alternatives Project

A guide developed by the Farming Alternatives Project at Cornell University. A step-by-step planning process complete with worksheets and case studies is outlined. Discusses goal setting, family and farm inventory, identifying alternatives, analyzing markets, analyzing profitability and cash flow, and final evaluation. \$5.75.

Available from:

NRAES
152 Riley-Robb Hall
Cornell University
Ithaca, NY 14853

Food Processors Handbook

Oregon Department of Agriculture

Complete reference guide for packaging, licenses, and marketing assistance in Oregon. Free.

Available from:

Oregon Department of Agriculture
Agricultural Development and
Marketing Division
121 SW Salmon Street
Portland, OR 97204
(503) 229-6734

Fruit and Vegetable Clip-Art

A pamphlet containing black and white line drawings of various fruits and vegetables, and lettering of different sizes and types. The clip-art in this publication can be used to create stationary, business cards, advertisements, flyers, and more. \$5.

Available from:

Dr. J.W. Courter
University of Illinois
Dixon Springs Agricultural Center
Simpson, IL 62985

The Growers' Guide to Successful Produce Marketing

Eric Gibson 1992

Practical, how-to information on finding: marketing outlets; selecting crops for maximum return; selling thorough farmers' markets, restaurants, roadside markets, pick-your-own operations, subscription farming, mail order and retail outlets; added-value products; customer service; merchandising; regulations and insurance; and promotion. \$19.95 plus \$2.50 shipping.

Available from:

New World Publishing
3701 Clair Drive
Carmichael, CA 95608
(916) 944-7932

Market What You Grow

Ralph J. Hills 1989

A practical manual for home gardeners, market gardeners, and small-scale farmers. \$9.95.

Publisher:

The Chicot Press
Box 53198
Atlanta, GA 30355
(404) 640-9918

Marketing Agricultural Products

R.L. Kohls and J.N. Uhl 1985

Topics such as the futures market, government price supports, and producer and marketing cooperatives are discussed. A chapter on fruit and vegetable marketing is also included. \$29.

Available from:

agAccess
P.O. Box 2008
Davis, CA 95617
(916) 756-7177

Marketing for Farmers

G.A. Futrell 1982

A guide containing information on how markets work and factors which need to be considered when setting marketing goals. Various options and marketing alternatives are presented, including explanations on how to analyze and take advantage of long- and short-term market trends. Various economic marketing strategies are discussed. \$21.95.

For more information contact:

Doane Information Service
Queen Avenue South
Bloomington, MN 55431
(800) 422-2434

Oregon Marketplace Program

The Oregon Marketplace program was established by the state legislature to help businesses find local suppliers with competitive products and services. The objectives are to retain more dollars in Oregon and to help local businesses expand their market potential. Program staff contact local businesses to determine purchasing trends, then circulate a "search announcement" among potential suppliers via public postings, business contacts, and other outlets. Potential purchasers enter their requests in the Marketplace database, requests are bid out locally, and connections made when possible. The program has expanded to several locations across the state, including the locations listed below.

For more information contact:

Statewide Program Administration
Organization for Economic Initiatives
618 Lincoln Street
Eugene, OR 97401
(503) 343-7712

District Offices:

Southwestern Division (Lane, Coos,
Douglas, Josephine, Jackson, and
Curry)
618 Lincoln Street
Eugene, OR 97401
(503) 343-7712

Willamette-Chemeketa Division
(Lincoln, Linn, Benton, Marion, Polk,
Yamhill, and Tillamook)
Willamette Community Development
Corporation
201 West First Street
Albany, OR 97321
(503) 928-2381

Salem Office
365 Ferry Street SE
Salem, OR 97301
(503) 399-5181

Metro-North Coast Division (Multnomah,
Washington, Clatsop, Clackamas, and
Columbia)
4134 North Vancouver
Portland, OR 97217
(503) 249-7929

Mid-Columbia Division (Hood River,
Wasco, Sherman, Gilliam, and
Wheeler)
Columbia Gorge Community Small
Business Development Center
212 Washington Street
The Dalles, OR 97058
(503) 296-1173

Blue Mountain Division (Union, Wallowa,
Baker, Morrow, Umatilla, Grant, and
Malheur)
8th and K Streets
La Grande, OR 97850
(503) 963-1755

Pick-Your-Own-Farming

R.J. Wampler and J.E. Motes 1985

Many aspects of u-pick farming and marketing including growing tips for specific crops, insurance, advertising, customer relations, and labor are described. \$17.95.

Available from:

University of Oklahoma Press
1005 Asp Avenue
Norman, OK 73019-8061
(800) 627-7377

Produce Availability and Merchandising Guide

The Packer (magazine) 1990

An important reference which includes commodity information regarding availability, varieties, care, merchandising, and nutrition. Shipping charts detail monthly arrival figures of top producing states and countries. The guide also includes information on ripening, temperature, display, shipping containers, merchandising sources, and organic certification.

Available from:

Vance Publishing Corporation
7950 College Blvd.
Overland Park, KS 66210
(913) 451-2200

Profitable Farm Marketing Strategies

Doane Information Service

A practical guide which explains how to maximize profits from crop and livestock sales through advance planning strategies. Topics addressed include: factors affecting marketing decisions; marketing fruits and vegetables; understanding the futures market; using hedging, speculation, and options trading; making use of government programs; and, the rules of cooperatives in marketing. \$8.95.

Available from:

Doane Information Service
Queen Avenue South
Bloomington, MN 55431
(800) 422-2434

Promotional Materials Catalog

Various promotional items for small fruit and vegetable growers including colorful roadsigns, clip art for ads, stationery, customized clothing, flyers and leaflets, public relations packets, and customized newspaper layouts are available. Write for a free catalog.

For more information contact:

JA Marketing
942 Virginia Lane
Elmhurst, IL 60126

Regulation Handbook for Direct Farm Marketers

Washington State Department of Agriculture 1989

Complete reference of Washington State regulations concerning food sales at farmer markets, on-farm sales, roadside markets, and u-pick operations. Free.

Available from:

WSDA
Market Development Division
Natural Resources Building
1111 Washington Street SE
P.O. Box 42560
Olympia, WA 98504
(206) 902-1915

Washington State Specialty Food Suppliers Directory

Washington State Department of Agriculture 1990

A list of specialty food suppliers in Washington.

Available from:

WSDA Market Development
Division
See address above

The Resource Center, Associated Cooperatives

A supplier of books and pamphlets on all aspects of cooperatives. Free catalog.

For more information contact:

The Resource Center, Associated
Cooperatives
4801 Central Avenue
P.O. Box 4006
Richmond, CA 98404

Tasting of Summer Produce

An annual event which brings together organic and conventional growers, chefs, produce buyers, and other professionals to taste growers' wares.

For more information contact:

The Oakland Museum
1000 Oak Street
Oakland, CA 94607
(510) 273-2264

Extension Publications

See the *University Resources* section of this guide for ordering OSU, WSU, PNW, and University of California publications.

Oregon State University

Are Farm Supply Cooperatives Meeting Farmer Needs? A Survey of Farmers and Managers SB 672

The Costs of Owning and Operating Farm Machinery in the Pacific Northwest PNW 346

Developing a Market Plan for Fresh Produce PNW 241

Developing and Managing a Farmers Market in Oregon EC 1116

Direct Farm Marketing EC 945

Farmer-to-Consumer Marketing #1: An Overview PNW 201

Farmer-to-Consumer Marketing #2: Production and Marketing Costs PNW 202

Farmer-to-Consumer Marketing #3: Merchandising, Pricing, and Promotional Strategies PNW 203

Farmer-to-Consumer Marketing #4: Place of Business and Product Quality PNW 204

Farmer-to-Consumer Marketing #5: Personnel Management PNW 205

Farmer-to-Consumer Marketing #6: Financial Management PNW 206

Farmer-to-Consumer Marketing #8: Oregon Regulations EC 1016

International Trade and the Oregon Economy EM 8327

Intrastate/Interstate Clearance System EC 1353

Long-Run Projections of Bartlett Pear Prices and Production TB 91

Marketing Fresh Apples and Pears in Bulk Containers SB 606

Market News: What's Available? EC 1366

Migrant and Seasonal Agricultural Worker Protection Act EC 1354

Ocean Transportation Serving Pacific Northwest Agriculture SB 647

Orchard Economics: The Cost of Establishing a High Density Pear Orchard in the Hood River Valley EM 8438

Portfolio Analysis of Contracting Strategies for Farmer Marketing Cooperatives SB 655

Setting Farm Business Goals EC 1097

The U.S. Processed Strawberry Market: An Analysis of Trends and Commodity Characteristics as They Impact on Oregon CI 695

Trends in Oregon Farmland Value FS 268

Vineyard Economics: The Costs of Establishing and Producing Wine Grapes in the Willamette Valley EM 8407

Washington State University

Analysis of Household Consumption of Fresh Sweet Cherries XC 0644 Free

Analysis of Japanese Consumer Preference for PNW and Japanese Sweet Cherries XB 0974 Free

Analysis of Japanese Demand for Fresh Sweet Cherries XB 0977 Free

Consumer Demand for Potatoes: At Home and Away from Home XB 1000 Free

Cooperative Laws in the USA: Federal Legislation XB 0902 Free

Demand for Washington Fresh Sweet Cherries XB 1007 Free

Demand and Optimum Allocation for Pacific Coast Bartlett Pears XB 0866 Free

Evaluation of Competitive Transportation Modes Moving WA Fruits and Vegetables XB 1012 Free

Expanding the Northwest's Share of the U.S. Potato Market XB 0910 Free

Factors Affecting Supply and Demand for Asparagus in U.S. XB 0918 Free

Factors Influencing the FOB Shipping Point Price of Northwest Sweet Cherry XB 0834 Free

Factors in Major Marketing Decisions for the Washington Apple Crop XB 0793 Free

Farmer-to-Consumer Marketing, Part 7: Washington Regulations EB 0737 25¢

Fresh Apple Industry Implications XT 0084 Free

Fundamental Economic Relationships in the Washington Potato Industry XB 0853 Free

Grape Acreages and Prices in Washington XB 1005 Free

Household Consumption of Fresh Apples Compared to Oranges, Bananas XC 0647 Free

Impact of Increased Energy Costs on the Washington Potato Grower XC 0615 Free

Japanese Economic Growth and Imports of U.S. Farm Products, Especially Fruits XB 0903 Free

Impact of the Washington Wine Industry on the State's Economy XB 0995 Free

Implications of Total Deregulation of Agricultural Transportation XC 0624 Free

Long-Run Implications of Optimum Use for Washington Apples XB 0785 Free

Marketing Strategies for Locally-Grown Produce in King County XC 0614 Free

Market Opportunities for Minor Washington Fruits and Vegetables XB 0946 Free

Market Structure, Share and Potential in the U.S. Wine Industry XB 0792 Free

Patterns of Change in East Asia and Marketing Agricultural Products XB 1017 Free

Potential for Washington Fruit Exports in SE Asia, Excluding Japan XB 0911 Free

PNW Vegetable Industry: Summary of Production, Value, Cost Trends XB 0917 Free

Profile of Wine Purchasing Households and Market Structure in U.S. Industry XB 0842 Free

PNW Tree Fruit Industry: Summary of Production, Value, and Cost Trends XB 0916 Free

Role of Direct Marketing in Washington Agriculture XB 0890 Free

Washington Apple Distribution: The Long-Term Marketing Implications XC 0629 Free

Washington Consumer Potato Demand XB 1010 Free

Washington Wine Grape Acreage, 1982 XC 0648 Free

World Production, Trade and Consumption of Major Deciduous Fruits XC 0611 Free

University of California Publications

Are There Ways to Earn More from Your Small Farm? 1976 No. 2215 50¢

The Board of Directors of Cooperatives 1985 No. 4060. Responsibilities, organization, and operation of a board of directors; issues of growth and finance; roles of delegates and members. \$6

Considerations in Enterprise Selection 1990 No. P011 \$2

Direct Marketing and Quality Control 1990 No. P010 \$3

Organic Farming Directory 1990 No. 21479 \$3.50. Directory of organic organizations, farm suppliers, consultants, periodicals, classes, and apprenticeships. Plus an overview of terms relating to organic production and the complete text of California's Organic Food Law.

Farm Leases and Rents 1990 No. P011 \$2

How to Determine Your Cost of Production 1990 No. P011 \$2

Marketing Cooperatives 1990 No. P010 \$3

Regulations Governing Contracts between Growers and Handlers of Agricultural Produce: A Primer for Small-Scale Producers 1987 No. 21425. Explains growers' rights and responsibilities in relation to state and federal regulatory agencies. \$1

Setting up a Roadside Stand 1990 No. P010 \$3

Bibliographies

Refer to the Alternative Farming Systems Information Center of the National Agricultural Library in the *Organizations* section of this guide for ordering information.

Alternative Crops - QB 90-25
K. Schneider February 1990

Organic Certification - SRB 90-04
J. Gates December 1989

Marketing Natural or Organic Meat, Poultry and Eggs

A 66-page packet of information compiled by the Appropriate Technology Transfer for Rural Areas (ATTRA) staff. Free. For ordering information see the ATTRA listing in the *Organizations* section of this guide.

Organizations

For more information consult the *Organizations* section of this guide.

Oregon Fresh Market Growers Association
Oregon Gourmet Foods
Oregon Tilth
Specialty Foods Group
Tilth Producers' Cooperative
Washington Tilth
Western United States Agricultural Trade Association (WUSATA)

Periodicals

For more information consult the *Periodicals* section of this guide.

California Farmer
Commodity Trends
Direct Market News
Federal-State Market News
Journal of Pesticide Reform
Market Kiosk
Natural Foods Merchandiser
The New Farm Magazine
Organic Advocate
Organic Food Matters
Organic Wholesale Market Report
The Packer
Trade Facts
Whole Foods Magazine

Organic Marketing References

California Certified Organic Farmers (COOF) Grower's List
Revised Annually

Includes the certification status of organic farms participating in CCOF's certification program. Cross-referenced by commodity, location, and acreage in organic production. The directory also contains information on the number of years certified, marketing methods, and lists farms that accept apprentices.

California Certified Organic Farmers Handbook

Includes California standards for organic production and verification, the organization's by-laws and materials list, and the complete text of the Organic Foods Act of 1990. The 1991 edition sells for \$25.

Both available from:

California Certified Organic Farmers
State Office
P.O. Box 8136
Santa Cruz, CA 95061
(408) 423-2263

Merchandising Organic Foods

Stuart Fishman

An information service to document organic food claims for retailers and wholesalers who subscribe to the service. Subscribers also receive a newsletter designed for organic food sellers.

Organic Information Packet For Growers

Stuart Fishman 1990

The packet includes: a description of basic organic farming methods and materials; a national listing of organic farming consultants; a list of books and periodicals; a list of organic food certification programs; and a copy of California's Organic Food Act of 1979. The packet also contains the Peaceful Valley Farm Supply Catalog and the agaccess catalog (a company selling a wide array of agricultural publications). \$10.

Both available from:

Stuart Fishman
5628 SW Miles Court
Portland, OR 97219
(503) 245-2309

National Directory of Organic Wholesalers

California Action Network 1991

A directory of wholesalers, organic farm suppliers, and certification agencies and other resource organizations. Published annually, the 1991 version sells for \$29.95 plus \$5 shipping and handling.

Available from:

California Action Network
P.O. Box 464
Davis, CA 95617
(800) 852-3832

Oregon Tilth Standards & Guidelines For Certified Organically-Grown Food

Oregon Tilth, Revised Annually

Oregon Tilth operates an organic farming certification program and this pamphlet outlines the basic methods and materials used in organic farming and describes some of the reasons for their use. \$10 non-members, \$5 members.

Available from:

Oregon Tilth
P.O. Box 218
Tualatin, OR 97062
(503) 692-4877

The Organic Foods Production Association of North America (OFPANA) Publications

For more information about OFPANA, a trade association, see the *Organizations* section of this guide. OFPANA marketing publications listed below are available.

OFPANA Publications:

Guide to the U.S. Organic Foods Production Act of 1990 \$3.50 voting members, \$4.50 associate members, \$7.50 non-members

Certification Pamphlet (for consumers and retailers) SASE members, \$1.50 non-members

Chart of Organic Service Groups SASE members, \$1 non-members

MPPL Task Force Report (for manufacturers) \$1 members, \$2.50 non-members

OFPANA Guidelines for the Organic Foods Industry \$10 members, \$12.50 non-members

Agricultural Inputs and Materials Survey Report SASE members, \$1.50 non-members

IFOAM Inspection Guide \$5 members, \$6.50 non-members

IFOAM Inspection Guide for Wholesale, Retail, Processing \$8 members, \$10 non-members

IFOAM Basic Standards of Organic Agriculture \$3 members, \$5 non-members

All available from:

OFPANA
P.O. Box 1078
Greenfield, MA 01301
(413) 774-7511

Organic Producers Computer Commodity Board

A computer bulletin board devoted to listings of currently available organic crops.

For more information:

See the *Databases and Computer Software* section of this guide

The State of U.S. Organic Producer Marketing Cooperatives

A working paper from the U.S. Department of Agriculture's Agricultural Cooperative Service. Free.

Available from:

Alan Borst
USDA/ACS
P.O. Box 96576
Washington D.C. 20090-6576
(202) 245-5399

Washington State Department of Agriculture (WSDA)

WSDA conducts third party, independent certification for Washington organic growers. The agency also does farm inspections and residue analysis.

For more information:

Washington State Department of
Agriculture
Natural Resources Building
1111 Washington Street SE
P.O. Box 42560
Olympia, WA 98504
(206) 902-1877

1992 Washington Tilth Directory of Organic and Sustainable Food Services

The guide lists suppliers of organic and sustainable foods and services in Washington. \$7.50.

Available from:

Washington Tilth
P.O. Box 10813
Bainbridge Island, WA 98110

Farm-Direct Market Guides

Oregon

Fresh Market Growers of Lane County

A guide to Lane County fresh market growers is published annually. Information on availability of fresh produce from roadside stands, u-picks, and telephone orders is included. Maps to the farms listed is also in the guide.

Available from:

OSU Extension Office, Lane County
950 West 13th Street
Eugene, OR 97402
(503) 687-4243

Oregon Trail Farms Direct Market Association

This guide is offered as an annual supplement to the Statesman-Journal (a Salem-area newspaper) and provides information on u-pick, ready pick, and picked-to-order produce in the Marion County region. The supplement is printed in early spring.

Available from:

Statesman-Journal
280 Church Street NE
Salem, OR 97301
(503) 399-6622

Organically Grown in Oregon, 1991-1992 Directory

The directory contains listings of organic food distributors, farmers' markets, farms and product they sell, grocers which stock organic produce, organizations, food processors, and restaurants serving organically grown food. Send a self-addressed stamped envelope with \$0.45 postage for each directory.

Available from:

Organically Grown in Oregon, Inc.
1163 West Fourth Avenue
Eugene, OR 97402
(503) 484-2561

Tri-County Farm Fresh Food Guide Association

The Association publishes an annual guide to farms offering fresh produce in Oregon's Clackamas, Multnomah, and Washington counties. A map and farm directory is included along with information on festivals, tours, and special events. Copies of this guide are available from your local OSU county extension office. See the *University Resources* section of this guide for information about office locations.

Washington

Puget Sound Farm Markets Association (PSFMA)

Publishes a guide offering information on farmer's markets, u-pick farms, and fresh-picked produce. A map and product reference guide is included. Guides are available from the PSFMA office (address listed below), at local Chamber of Commerce Offices, libraries, or PSFMA farms.

Available from:

Puget Sound Farm Market Association
4009 Phinney Avenue North
Seattle, WA 98103
(206) 633-5795

Southwest Washington Grower's Association Fresh Market Guide

The SWGA, with assistance from the Clark County Cooperative Extension office, publishes a guide of farms offering fresh produce in Southwest Washington.

Available from:

WSU Extension Office, Clark County
800 Franklin Street, Suite E
Vancouver, WA 98660
(206) 696-8411

Farmer's Markets

Farmers Markets offer an opportunity to sell produce locally, interact directly with the public, and potentially increase profit margins. If the list below doesn't name a location for a farmers market in your area, check the local newspaper or call the Chamber of Commerce; new farmers markets are starting to appear in more communities.

Oregon Farmer's Markets

Compiled by Oregon Tilth, Inc., May 1992.

Beaverton Farmer's Market

P.O. Box 4

Beaverton, OR 97075

Contact: Laurie McEachern
(503) 643-5345

*Beaverton: Saturdays 8:00 a.m. - 1:30 p.m.;
Farmington Road, between Hall Blvd. and
Betts Street; mid-June through October 31.*

Blue Mountain Producers Co-Op

1207 "M" Avenue

LaGrande, OR 97850

Contact: Jenny Nicholson
(503) 963-8049

*LaGrande: Saturdays 9:00 a.m. - 12:00 p.m.;
on Sunflower Bookstore lawn at 1114
Washington Avenue; late-June through
September 30, weather permitting.*

Corvallis Farmers Market

31615 Fern Road

Philomath, OR 97370

Contact: Ron Spisso
(503) 929-6633

*Corvallis: Saturdays 8:00 a.m. - 1:00 p.m.;
on Madison Street between First and Second
Streets; May 16 through October.*

Farmers in the Park

P.O. Box 168

Odell, OR 97044

Contact: Kaye White
(503) 386-8766

*Hood River: Saturdays 9:00 a.m. - 2:00 p.m.;
in Jackson Park; June 13 through mid-
October.*

Grants Pass Growers Market

P.O. Box 573

Grants Pass, OR 975267

Contact: Marty Fate
(503) 476-5375

*Grants Pass: Saturdays 9:00 a.m. - 1:00 p.m.;
on C Street between 4th and 5th Streets; from
Easter to Thanksgiving. Also on Tuesdays,
9:00 a.m. - 1:00 p.m., call manager for
location of the Tuesday summer market; from
July 4 to Halloween.*

Gresham Farmers Market

P.O. Box 422

Gresham, OR 97030

Contact: Mary Patton
(503) 669-2494

*Gresham: Saturdays 8:00 a.m. - 2:00 p.m.;
Gresham City Hall parking lot on the MAX
line, 1330 NW Eastman Parkway in Gresham;
May through October 31.*

Hillsboro Farmers Market

1618 Douglas Street

Forest Grove, OR 97116

Contact: Merrill Ludlam
(503) 357-3518

*Hillsboro: Saturdays 8:00 a.m. - 1:30 p.m.;
East Second and Main Streets, adjacent to the
Courthouse; late May through mid-October.*

Klamath Falls Saturday Market

215 South Rogers

Klamath Falls, OR 97601

Contact: Carole Orendorff
(503) 882-3888

*Klamath Falls: Saturdays 10:00 a.m. - 2 p.m.;
on Eighth Street off Main; last Saturday in
August through September.*

Lane County Farmers Market

P.O. Box 1714
Eugene, OR 97440
Contact: David Amorose
(503) 342-5856

Eugene: Saturdays 9:00 a.m. - 5:00 p.m.; East Eighth and Oak Streets; from April through the Saturday preceding Thanksgiving, weather permitting.

Lincoln County Small Farmers Market

21797 Siletz Highway
Siletz, OR 97380
Contact: Sally Graves-Jennings
(503) 444-2687

Newport: Saturdays 10:00 a.m. - 12:00 noon; Lincoln County Fairgrounds; May through October.

McMinnville Farmers Market

West Valley Farmers
2741 North 99W
McMinnville, OR 97128
Contact: Sue Reschly
(503) 472-6154

McMinnville: Saturdays 8:00 a.m. - 12:00 noon or until all produce sold; West Valley Farmers Market parking lot at 2741 North 99W; Last Saturday in August, and the first three Saturdays in September.

Medford Growers and Crafters Association

P.O. Box 4041
Medford, OR 97501
Contact: Joyce Schillen
(503) 855-1326

Medford: Thursdays 8:30 a.m. - 1:30 p.m.; just east of I-5 on Almond Street between East Main and Tenth Street; early April through Thanksgiving.

Ashland: Tuesdays 8:30 a.m. - 1:30 p.m.; on Water Street under the Lithia Street/Siskiyou Blvd. overpass; early April through Thanksgiving.

Mid-Willamette Growers Association

26675 Starr Road
Monroe, OR 97456
Contact: Jack Lawrence
(503) 847-5641

Corvallis: Wednesdays 9:00 a.m. - 1:00 p.m.; Benton County Fairgrounds, 110 SW 53rd Street; May through the Wednesday before Thanksgiving.

Albany: Saturdays 9:00 a.m. - 12:00 noon; At the corner of Broadalbin and Water Streets; May through the Saturday before Thanksgiving.

People's Inner City Organically Grown Farmers Market

3029 SE Twenty-first Street
Portland, OR 97202
Contact: Paul Kennison
(503) 232-9051

Portland: first Sunday of each month, 10:00 a.m. - 3:00 p.m.; in the park next to People's store, 3029 SE 21st Street; May through October, rain or shine.

Portland Farmers Market

P.O. Box 86184
Portland, OR 97286
Contact: Craig Mosback
(503) 231-2889

Portland: Saturdays 8:00 a.m. - 1:30 p.m.; at Albers Mill parking lot, 1200 NW Front Street; mid-June through October.

Portland Saturday Market

108 West Burnside
Portland, OR 97209
Contact: Bill Hancock
(503) 222-6072

Portland: Saturdays 10:00 a.m. - 5:00 p.m. and Sundays 11:00 a.m. - 4:30 p.m.; at the west end of the Burnside Bridge between Burnside and Ankeny between First and Front Streets; March through Christmas Eve. Primarily arts and crafts, but produce is also available.

Salem Public Market

8245 72nd Avenue NE

Salem, OR 97305

Contact: Donna Heilman
(503) 393-3758*Salem: Saturdays 8:30 a.m. - noon;
1240 Rural Street SE; indoors, all year.***Washington Farmer's Markets**

All of the markets in Washington listed below are members of the Washington State Farmers Market Association (WSFMA).

For more information contact:

Michael Posey, President
11910-C Meridian East, Suite 29
Puyallup, WA 98373
(206) 254-5280

Grays Harbor Farmers Market

5705 Central Park Drive

Aberdeen, WA 98520

Contact: Nancy Lachel
(206) 533-3686*Aberdeen: Saturdays and Wednesdays,
8:30 a.m. - 3:00 p.m. at 1 State Street in the F
Development. Saturday markets run April
through December, Wednesday markets, June
through September.***Bremerton Farmers' Market**

Bremerton Main Street Association

245 Fourth Street, Suite 201-B

Bremerton, WA 98310

Contact: Mike Schroeder
(206) 377-3185*Bremerton: Sundays, 11:00 a.m. - 4:00 p.m.
at the Bremerton Waterfront, May through
September.***Lewis County Farmers Market**

P.O. Box 272

Chehalis, WA 98532

Contact: Mary Lewis
(206) 785-3101*Centralia: Saturday, 9:30 a.m. - 1:00 p.m., on
Pine Street between Tower and Depot Roads,
mid-May through October.**Chehalis: Saturdays, 9:30 a.m. - 1:00 p.m., on
North Market Street near the Depot Museum,
mid-May through October.***Northeast Washington Farmers Market**

South 815 Boise Road

Kettle Falls, WA 99141

Contact: Alice Sullivan
(509) 738-2547*Colville: Last Saturday in June through
October, 9:00 a.m. - 12:00 noon, at Main
Street and Tiger Highway.***Coupeville Farmers Market**

P.O. Box 102

Coupeville, WA 98239

Contact: Irene Thomas
(206) 678-6757*Coupeville: Saturday, 10:00 a.m. - 12:00 noon
at the Coupeville Courthouse parking lot on
Main Street, April through October.***Darrington Public Market**

P.O. Box 472

Darrington, WA 98241

Contact: Leila Dempsey
(206) 436-1622*Darrington: Saturdays, 10:00 a.m. - 6:00 p.m.
on Railroad Avenue, July through September.
Also open Sunday for special events and
holidays.***Eatonville Farmers Market**

P.O. Box 134

Eatonville, WA 98382

Contact: Dave Schactler
(206) 832-4345*Eatonville: Saturdays, 10:00 a.m. - 4:00 p.m.,
at 309 Center Street East, May through
September.*

Forks Farmers Market

H.C. 80, Box 372

Forks, WA 98328

Contact: Joanne McReynolds
(206) 374-6623

Forks: Saturdays, 10:00 a.m. - 2:00 p.m. in the parking lot at the Thrifty Mart Store, mid-May through mid-October.

Gig Harbor Farmers Market

P.O. Box 494

Olalla, WA 98359

Contact: Roy Denton
(206) 851-4417

Gig Harbor: Fridays, 11:00 a.m. - 4:00 p.m., at corner of Wollochet and Artondale Dr., May through October.

Kent Saturday Market

220 Fourth Avenue South

Kent, WA 98032-5895

Contact: Nancy Woo
(206) 859-3369

Kent: Saturdays, 9:00 a.m. - 4:00 p.m., at the corner of 2nd and Smith downtown, May through mid-October.

Kingston Farmers Market

Kingston, WA 98340

Contact: Mary McClure
(206) 297-2256

Kingston: Saturdays, 9:00 a.m. - 2:00 p.m., on the Marina lawn area at the Port of Kingston, May through October.

Cowlitz Country Farmers Market

1755 Coal Creek Road

Longview, WA 98632

Contact: Jack Penner
(206) 425-4835

Longview: Saturdays and Tuesdays, 8:00 a.m. - 1:00 p.m. at the Cowlitz County Fairgrounds, 5th and Washington Way, May through October.

Columbia Basin Farmers Market Kraft Bazaar

P.O. Box 691

Moses Lake, WA 98837

Contact: Teri Pieper
(509) 766-2927

Moses Lake: Saturdays, 8:00 a.m. - 1:00 p.m. at Dogwood Park at Third and Dogwood, June through October.

Skagit Valley Farmers Market

P.O. Box 1007

Mt. Vernon, WA 98237

Contact: Audrey Medved
(206) 428-8547

Mt. Vernon: Third Saturday in June through September, 9:00 a.m. - 1:00 p.m. at First St. and Division.

Pend Oreille Valley Earth Market

205 North Craig Avenue

Newport, WA 99156

Contact: Robert Karr
(509) 447-2552

Newport: Saturdays, 9:00 a.m. - 1:00 p.m. at 300 North Washington, May through mid-October or first snowfall, whichever occurs first.

Olympia Farmers Market

P.O. Box 7094

Olympia, WA 98507

Contact: Mike McGrath
(206) 352-9096

Olympia: Thursday through Sunday, 10:00 a.m. - 3:00 p.m. at Capitol Way and Thurston, May through October.

Pasco Farmers Market

P.O. Box 842

Pasco, WA 99301

Contact: Linda Sue Williams
(509) 545-0738

Pasco: Wednesdays and Saturdays, 9:00 a.m. to sellout, at 4th and Lewis, May through November.

Port Angeles Farmers Market

651-B Towne Road

Sequim, WA 98382

Contact: Nash Huber

(206) 683-4523

*Port Angeles: Saturdays, at Seventh and Chase, April through December.***Kitsap Regional Farmers Market Assoc.**

P.O. Box 8247

Port Orchard, WA 98336

Contact: Nancy B. Hess

(206) 851-4242

*Port Orchard: Saturdays, 9:00 a.m. - 3:00 p.m. on Frederick Street, just off of Bay Street, May through October.**Silverdale: Saturdays, 9:00 a.m. - 1:00 p.m., at Waterfront Park off Silverdale Way on Byron Street, May through September.***Puyallup Farmers Market**

P.O. Box 1298

Puyallup, WA 98273

Contact: Carol Butler

(206) 845-6755

*Puyallup: Saturdays, 9:00 a.m. - 2:00 p.m. at Pioneer Park at Meridian and Pioneer.***Redmond Farmers Market**

14812-84th NE

Bothell, WA 98011

Contact: Wanda Blake

(206) 488-2405

*Redmond: Saturdays, 8:00 a.m. - 2:00 p.m., at 7730 Leary Way, May through mid-October.***Pike Place Market**

c/o 85 Pike Street, Room 500

Seattle, WA 98101

Contact: Roy Feiring

(206) 682-7453

*Seattle: Monday through Saturday, 9:00 a.m. - 6:00 p.m. at First Avenue and Pike, all year.***Spokane Marketplace**

#20 Riverside Avenue

Spokane, WA

Contact: Dave Wallace

(509) 623-4338

*Spokane: Saturdays, 10:00 a.m. - 6:00 p.m. at #20 Riverside Avenue, July through October.***Vancouver Farmers Market**

P.O. Box 61638

Vancouver, WA 98666-1638

Contact: Michael Posey

(206) 254-5280

*Vancouver: Saturdays, 10:00 a.m. - 5:00 p.m. at 5th Street between Main and Broadway, mid-May through October.***Vashon Market Association**

P.O. Box 605

Vashon, WA 98070

Contact: Jan Niemi

(206) 463-3130

*Vashon: Saturdays, 10:00 a.m. - 3:00 p.m. on main highway in town, open all year.***Wenatchee Valley Farmers Market**

1125 McKittrick, #75

Wenatchee, WA 98801

Contact: Mariah Cornwoman

(509) 662-1609

*Wenatchee: Wednesdays and Saturdays, 8:00 a.m. - 12:00 noon at Riverfront Park, foot of 5th Street, all year.***Winslow Farmers Market**

P.O. Box 10563

Bainbridge Island

Winslow, WA 98110

Contact: Bea Lupton

(206) 842-3328

Winslow: Saturdays, 8:30 a.m. - 2:00 p.m. at Winslow Green, Winslow Way and Madison, May through September.

Commodity Commission Lists

Commodity Commissions are service organizations whose emphasis on a self-help approach. There are three major roles commissions assume: (1) research, (2) education, and (3) market development through promotion or public relations. Commodity Commission programs are funded by assessments producers make upon each commodity unit or pound at the time of marketing or first sale. Commission members are either elected by producers or are appointed. The scope and direction of each commodity commission is formulated by the producers of that product.

Oregon

OREGON ALFALFA SEED COMMISSION
121 SW Salmon Street, Suite 240
Portland, OR 97204-2987
(503) 229-6734

OREGON BARTLETT PEAR COMMISSION
813 SW Alder Street, Suite 601
Portland, OR 97205-3182
Executive Secretary: Herb Diede
(503) 223-8139

OREGON BEEF COUNCIL
1000 NE Multnomah Street
Portland, OR 97232-2111
Executive secretary: Mick Scott
(503) 281-3811

OREGON BLUEBERRY COMMISSION
712 NW Fourth Street
Corvallis, OR 97330
Administrator: Jan-Marie Schroeder
(503) 758-4043

OREGON CANEBERRY COMMISSION
712 NW Fourth Street
Corvallis, OR 97330
Administrator: Jan-Marie Schroeder
(503) 758-4043

OREGON CRANBERRY GROWERS ASSOCIATION
P.O. Box 1633
Bandon, OR 97411

CHEWINGS FESCUE & CREEPING RED FESCUE COMMISSION
866 Lancaster Drive SE
Salem, OR 97301-5831
Executive secretary: David Nelson
(503) 585-1157

OREGON DAIRY PRODUCTS COMMISSION
10505 SW Barbur Blvd.
Portland, OR 97219-6853
Executive secretary: Sheldon Pratt
(503) 229-5033

OREGON DUNGENESS CRAB COMMISSION
Box 256
Salem, OR 97308
Administrator: Bob McKellar
(503) 581-7258

OREGON FILBERT COMMISSION
Box 23126
Tigard, OR 97223-0018
Executive secretary: Robert Gelhar
(503) 639-3118

OREGON FRYER COMMISSION
11220 SE Stark Street, Suite 12
Portland, OR 97216-3355
Public relations manager: Paul Rains
(503) 256-1151

OREGON GRAINS COMMISSION
1200 Front Avenue, Suite 520
Portland, OR 97209-2800
Administrator: Daren Coppock
(503) 229-6574

HIGHLAND BENTGRASS COMMISSION
Box 3366
Salem, OR 97302-0366
Executive secretary: Bryan Ostlund
(503) 364-3346

OREGON HOP COMMISSION
14358 Dominic Road NE
Mt. Angel, OR 97362-9728
Executive secretary: Elaine Annen
(503) 634-2250

OREGON MINT COMMISSION
Box 3366
Salem, OR 97302
Executive secretary: Bryan Ostlund
(503) 364-3346

OREGON ORCHARDGRASS SEED
PRODUCERS COMMISSION
1270 Chemeketa Street, NE
Salem, OR 97301-4145
Executive secretary: John McCulley
(503) 370-7019

OREGON POTATO COMMISSION
700 NE Multnomah Street, Suite 460
Portland, OR 97232-4104
Administrator: William Wise
(503) 238-7500

OREGON PROCESSED PRUNE & PLUM
GROWERS COMMISSION
121 SW Salmon Street, Suite 240
Portland, OR 97204-2987
(503) 229-6734

OREGON PROCESSED VEGETABLE
COMMISSION
1270 Chemeketa Street, NE
Salem, OR 97301-4145
Business secretary: John McCulley
(503) 370-7019

OREGON RYEGRASS GROWERS SEED
COMMISSION
4093-12th Street, SE
Salem, OR 97302-0366
Executive secretary: Wally Hunter
(503) 364-3346

OREGON SALMON COMMISSION
Box 1033
Newport, OR 97365-0078
Administrator: Tom Robinson
(503) 265-2437

OREGON SHEEP COMMISSION
121 SW Salmon Street, Suite 240
Portland, OR 97204-2987
(503) 229-6734

OREGON STRAWBERRY COMMISSION
712 NW Fourth Street
Corvallis, OR 97330
Administrator: Jan-Marie Schroeder
(503) 758-4043

OREGON SWEET CHERRY COMMISSION
Oregon Agri-Services, Box 2209
Salem, OR 97308
Administrator: Marshall Coba
(503) 585-7716

Washington

WASHINGTON ALFALFA SEED COMMISSION

P.O. Box 2966
Pasco, WA 99302
Executive secretary: Kenley Maurer
(509) 547-5538; FAX: same as phone

WASHINGTON APPLE COMMISSION

P.O. Box 18
Wenatchee, WA 98801
President: Tom Hale
(509) 663-9600; FAX: (509) 662-5824

WASHINGTON BARLEY COMMISSION

501 Great Western Building
West 905 Riverside
Spokane, WA 99201
Administrator: William N. Isgrigg
(509) 456-4400; Scan: 545-4400;
FAX: (509) 838-1807

WASHINGTON BEEF COMMISSION

Denny Building, 2200 - 6th Avenue, #105
Seattle, WA 98121
Executive Secretary: Maggie Grate
(206) 464-7403 or 464-7420;
FAX: (206) 587-5058

WASHINGTON BLUEBERRY COMMISSION

1360 Bow Hill Road
Bow, WA 98232
Secretary/Treasurer: Dorothy Anderson
(206) 766-6173

WASHINGTON BULB COMMISSION

P.O. Box 303
Mt. Vernon, WA 98273
Secretary/Treasurer: Richard Nowadnick
(206) 424-1375

WASHINGTON CRANBERRY COMMISSION

Star Route
Ilwaco, WA 98624
Chairman: Mrs. Ardell G. McPhail
(206) 642-4938; FAX: (206) 648-2144
(Ocean Spray)

WASHINGTON DAIRY PRODUCTS COMMISSION

1107 NE 45th Street, Room 205
Seattle, WA 98105
Secretary/Treasurer: Doug Simpson
(206) 545-6763; FAX: (206) 545-6666

WASHINGTON DRY PEA & LENTIL COMMISSION

5071 Highway 8 West
Moscow, ID 83843
Administrator: Harold Blain
(208) 882-3023; FAX: (208) 882-6406

WASHINGTON EGG COMMISSION

P.O. Box 1038
Olympia, WA 98507
Manager: William J. Walkinshaw
(206) 754-4401; FAX: (206) 754-4414

WASHINGTON FRUIT COMMISSION

1005 Tieton Drive
Yakima, WA 98902
President: Ken Severn
(509) 453-4387; FAX: (509) 453-4880

WASHINGTON FRYER COMMISSION

15403-B First Street South
Seattle, WA 98148
Office Manager: Joanne Marr
(206) 242-2229

WASHINGTON HOP COMMISSION

504 North Naches Avenue, #5
Yakima, WA 98901
Manager: Ann George
(509) 453-4749; FAX: (509) 457-8561

WASHINGTON MINT COMMISSION
P.O. Box 2111
Pasco, WA 99302
Executive Secretary: Ken Maurer
(509) 547-5538; FAX: same as phone

WASHINGTON WINE COMMISSION
P.O. Box 61217
Seattle, WA 98121
Administrator: Simon Siegl
(206) 728-2252

WASHINGTON POTATO COMMISSION
108 Interlake Road
Moses Lake, Washington 98837
Administrator: Henry Michael
(509) 765-8845; FAX: (509) 765-4853

WASHINGTON RED RASPBERRY
COMMISSION
1333 Lincoln Street, #182
Bellingham, WA 98226
Manager: Ann Metzger
(206) 671-1437

WASHINGTON SEED POTATO
COMMISSION
P.O. Box 286
Lynden, WA 98264
Secretary/Treasurer: Doris Roosma
(206) 354-4670

WASHINGTON STRAWBERRY
COMMISSION
4430 John Luhr Road
Olympia, WA 98506
Manager: Norval Johanson
(206) 491-6567

WASHINGTON TREE FRUIT RESEARCH
COMMISSION
Route 1, Box 319-E
Wapato, WA 98951
Secretary/Treasurer: David Allan
(509) 877-2065; FAX: (509) 453-4880

WASHINGTON WHEAT COMMISSION
404 Great Western Building
West 905 Riverside
Spokane, WA 99201
Administrator: Tom Mick
(509) 456-2481; FAX: (509) 838-1807

Conversion Factors

Multiply	By	To Get
Acres	0.4048	Hectares
Acres	43,560	Square feet
Acres	4,840	Square yards
Acres	1,076.4	Square feet
Bushels	4	Pecks
Bushels	64	Pints
Bushels	32	Quarts
Centimeters	0.3937	Inches
Centimeters	0.01	Meters
Cubic feet	1,728	Cubic inches
Cubic feet	0.03704	Cubic yards
Cubic yards	27	Cubic feet
Cubic yards	46,656	Cubic inches
Feet	30.48	Centimeters
Feet	12	Inches
Feet	0.3048	Meters
Feet	0.33333 (or 1/3)	Yards
Feet per minute	0.01136	Miles per hour
Gallons	4	Quarts, liquid
Gallons of water	8.3453	Pounds of water
Grams	0.001	Kilograms
Grams	1,000	Milligrams
Grams	0.0353	Ounces
Grams per liter	1,000	Parts per million
Hectares	2.471	Acres
Inches	2.54	Centimeters
Inches	0.08333	Feet

(Continued)

Conversion Factors

Multiply	By	To Get
Kilograms	1,000	Grams
Kilograms	2.205	Pounds
Kilograms per hectare	0.892	Pounds per acre
Kilometers	3,281	Feet
Kilometers	0.6214	Miles
Liters	0.2642	Gallons
Liters	1.057	Quarts, liquid
Meters	100	Centimeters
Meters	3.2181	Feet
Meters	39.37	Inches
Miles	5,280	Feet
Miles	63,360	Inches
Miles	1,760	Yards
Miles per hour	88	Feet per minute
Miles per hour	1.467	Feet per second
Miles per minute	60	Miles per hour
Ounces, dry	0.0625	Pounds
Ounces, liquid	0.0625	Pints, liquid
Ounces, liquid	0.03125	Quarts, liquid
Pecks	16	Pints, dry
Pecks	8	Quarts, dry
Pints, dry	0.5	Quarts, dry
Pints, liquid	16	Ounces, liquid
Pounds	453.5924	Grams
Pounds	16	Ounces
Pounds of water	0.1198	Gallons
Quarts, liquid	0.9463	Liter
Quarts, liquid	32	Ounces, liquid
Quarts, liquid	2	Pints, liquid

(Continued)

Conversion Factors

Multiply	By	To Get
Square feet	144	Square inches
Square feet	0.11111	Square yards
Square inches	0.00694	Square feet
Square miles	640	Acres
Square miles	27,878,400	Square feet
Square yards	0.0002066	Acres
Square yards	9	Square feet
Square yards	1,296	Square inches
Tons	907.1849	Kilograms
Tons	2,000	Pounds
Yards	3	Feet
Yards	36	Inches
Yards	0.9144	Meters

COMMENTS AND SUGGESTIONS

Please detach or copy this page and send additions, corrections, or suggestions to:



Helene Murray
Department of Crop and Soil Science
Ag & Life Sciences Bldg. 3017
Oregon State University
Corvallis, OR 97331-7306

Be sure to include your name, address and phone number if you are suggesting an additional source of information. Attach additional pages if necessary. Thanks for your input.

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Comments and suggestions

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