

Marketing ALTERNATIVES *for* fresh produce



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Change & opportunity



Pacific Northwest vegetable and fruit growers always have faced changing markets. To many growers, these changes have seemed faster than usual in recent years, fueled by shifting consumer preferences, increasing production costs, and new market logistics.

The number of processing plants in the region continues to decline. Typically, plant closures have been traced to declining consumer demand for a particular product or the plant's relocation to areas where lower costs or higher quality products are available. In some cases, the move is to bring plant sites closer to major markets.

On the other hand, there are new marketing opportunities for Pacific Northwest growers. People are increasing their consumption of many fresh vegetables and fruits. They prefer more nutritious, less processed food. Interest in ready-to-use items and specialty products is growing. Locally grown products are in demand.

Renewed interest in sustainable production has encouraged strong growth for "local" (i.e., within 100 miles) and organic producers whose practices reduce the "carbon footprint" of agriculture: improved energy efficiency and reduced emissions of carbon dioxide and other gases that contribute to greenhouse warming.

In response to consumer desires, many supermarkets have increased the size of their produce departments and now carry as many as 300 items. Products include organic produce and convenience items such as prepacked salad, cut fruits and vegetables, and freshly squeezed juice. Restaurants and institutions also have increased the amount and variety of fresh produce and specialty products they use. The Internet has become a marketing and communications tool for businesses and a way for customers to purchase products.

At the same time, growers in the major fresh-market shipping regions in California and Florida are losing their comparative advantage because of rising transportation costs to distant markets. For Pacific Northwest farmers, this situation opens good opportunities to expand their share of fresh produce and specialty product sales in local and Canadian markets.

A detailed understanding of a market can help you enter it successfully. This publication provides:

- Basic information necessary to develop a plan for marketing fresh produce and other specialty products
- A framework for conducting a thorough market analysis
- Information sources to help you evaluate the feasibility of entering or expanding your presence in a market

Topics covered include identifying potential markets, meeting the needs of the market, transportation options, selling methods, and evaluating risks and potential returns.

There is little published information about specialty product marketing plan development, so many of the ideas in this publication are based on general research and personal contact between the authors and people who already are a part of the fresh produce and specialty product industry.

This publication is organized in a typical planning sequence you might follow when considering entry into a particular market. The appendix includes a method for determining the cost–return situation for any fresh produce or specialty product marketing venture.

Farm direct marketing



Farm direct marketing means farmer-to-consumer sales, usually through U-pick, roadside markets, farmers' markets, or Internet/mail-order. A successful farm direct marketing business requires a knowledge of effective marketing and management practices, an entrepreneurial outlook, and the right personality and skills for selling directly to customers. Developing a consumer-oriented website for your business is essential.

Numerous studies of demand for farmer-to-consumer specialty products show that customers are attracted by the opportunity to buy products they perceive to be fresher, more wholesome, and more flavorful than those they can get from regular commercial outlets. While some look for bargain prices by buying large volumes, many pay normal retail or even higher prices for products sold in a clean, relaxed, and friendly environment.

Selling directly to consumers can increase returns by reducing marketing costs

associated with selling through middlemen—that is, processors, wholesalers, brokers, and retailers. Moreover, direct sales can provide market outlets for products that normally wouldn't attract middlemen. Grades and volumes of products might interest consumers even when they don't meet commercial standards. For example, vine-ripened or field-grade produce might have no commercial outlet, but established direct outlets might be able to move those products to customers who desire freshness and quality.

Some producers develop direct outlets in addition to selling to middlemen, reducing their risk in the event of a market failure.

Many farm direct marketers have found they can draw families from a wide area by adding recreation and entertainment to their selling environment, which fits well into agritourism (see page 9). Curiosity, available leisure time, support for farmers, and a desire to learn and see what the “good life” is all about

are important aspects of this customer drawing power.

A farm direct outlet can offer greater flexibility to producers. Farmers can try new products and selling techniques. Also, a farmer may balance product mix, consumer demand, and his or her talents for production, selling, and market management. Last, but not least, many producers find satisfaction in their farm direct activities through a sense of ownership, being their own boss, or simply “doing their own thing.”

Is a farm direct outlet a good option for you?

The best way to evaluate whether direct marketing is for you is first to look at your personality. If your personality seems compatible with direct sales, then you might continue by critically evaluating market opportunities and the compatibility of your farming operation with the demands of direct marketing. In addition to assessing your personality, consider your production knowledge, retailing abilities, and plans for the future.

First, you need to be outgoing and to enjoy people. Farm direct customers want to feel welcome or they likely will not return for repeat sales—which are essential for success.

Personal interactions add to the long hours that successful farm direct marketers put into their businesses. Are those long hours going to create conflict and stress in your life and the lives of family and friends? If so, perhaps farm direct marketing is not for you.

Knowledge of production methods is critical in selling directly to consumers. These buyers want and expect consistently high-quality products. You must meet those expectations or sales will lag.

Is there really a demand for the products and services you want to sell? Can you identify institutions (such as restaurants or local food cooperatives) that are a ready market? As part of your market research, be sure to contact growers you respect. Openness and enthusiasm from other growers may be a

strong indication that a market has potential. On the other hand, lack of enthusiasm or information may indicate the market is saturated.

Consumers and regulators expect you to comply with applicable regulations on grading standards, weighing equipment, and food safety. There may be legal restrictions such as licensing, inspections, zoning, highway access, market orders (i.e., a grower-approved, legally binding instrument that specifies how a farm commodity is to be marketed), packaging and processing requirements, signing, or weights and measures rules. If you market organic produce, additional regulations apply; see “Organic Marketing,” page 15, for more information. To avoid any pitfalls, be sure to contact your local government and state department of agriculture as a part of your market assessment.



Selling directly to consumers doesn't eliminate retailing skills. You'll need to possess or hire the skills necessary to control quality and to merchandise, display, price, and package your product. Networking, event planning, and promotion abilities frequently are useful. You can acquire these skills through study and experience. You'll need them to earn the highest possible returns on your products and services.

It is important to consider how farm direct marketing fits into your overall business plan. If it is to be a small part of your business, temporary structures and organizations for direct marketing may be enough. On the other hand, if you intend farm direct sales to be a substantial part of your business, you may need to consider major investments in personnel and capital.

Online information

Good information on a variety of farm direct marketing methods and grower-run direct marketing associations is available online. You can find websites that advertise the goods and services of individual farm businesses and organizations, as well as information from government and educational institutions. Searching on terms such as “farm markets Pacific Northwest” will return many information sources.



Examples include:

- University of Idaho Extension, Sustainable Agriculture in Idaho
<http://www.ag.uidaho.edu/sustag/>
Focuses on marketing opportunities for small farms. Links to organizations related to farm direct marketing, community-supported agriculture, and sustainable agriculture.
- Oregon State University Extension, Small Farms Program
<http://smallfarms.oregonstate.edu/>
Features materials on a wide variety of topics relevant to small farm production and marketing. It has extensive search capabilities to find information on agricultural production and marketing management.
- Oregon State University Extension, Oregon Agricultural Information Network
<http://oregonstate.edu/oain/>
Has basic county agricultural production estimates and value-added studies. Also links to AgTools for Risk Management, numerous USDA and state information websites, and the catalog of OSU Extension publications.
- Washington State University Extension, Small Farms Team
<http://smallfarms.wsu.edu/index.php>
Provides a wealth of information on production and marketing for small farms, local grower products and services, and educational opportunities. Links to many other relevant sites.
- Cascade Harvest Coalition, a regional not-for-profit organization promoting local agriculture
<http://pugetsoundfresh.org/>

Note: Websites and web addresses given in this publication were up and running at the time of publication but are subject to change.

Farms may have many enterprises including a direct marketing business. A direct marketing business should complement your overall farming operation and not compete for land, labor, capital, and management resources. Thus, a complete farm review is necessary. A complete farm review focuses on how that business blends with other enterprises to efficiently use all the farm's resources as a whole.

Space and access are important factors. Are marketing facilities and adequate parking available at the farm, or will a farmers' market be the sales location? Are driving distances to the farm or farmers' market reasonable?

Production schedules for your mix of sales outlets must be complementary. Is your production, combined with that available from other growers in your area, sufficient to consistently supply your direct marketing outlet?

Early in the analysis, you must consider requirements for capital to finance the business assets that you will need. Will you have enough, from other investors and from lenders, to build facilities and get equipment? The amount of capital you need depends on the sales technique you choose and on the size of your operation. Approach lenders early in the process if you are considering taking out a loan.

Options for farm direct marketing

Seven common forms of farm direct marketing are:

- U-pick
- Roadside stands and markets
- Farmers' markets
- Internet and mail order
- Direct to restaurants and institutions
- Community supported agriculture
- Participation in agri-tourism

When selecting one or more methods, consider personal preference, farm location, and the volume and nature of the products and services to be sold. Targeting the consumer is important. In some cases, more than one method may fit your marketing plan.

U-pick

U-pick, or pick-your-own, is a form of consumer harvesting. The customer comes to the farm, does the harvesting, and transports the product

home. Consumer harvesting is a popular option for crops that have a distinctive indicator of ripeness (such as color or size) or for those that can be harvested all at once.

Advantages of U-pick may include:

- Costs for harvest labor, handling, packaging, shipping, and storage are lower than for other marketing methods.
- In most cases, sales provide immediate payment with no deductions for shipping, handling, or spoilage, and no risk of price change.
- Many consumers enjoy selecting fully ripe, fresh products.
- The generally lower price per unit for bulk purchases encourages sales for home processing.

- Some customers enjoy U-pick as recreation.

Disadvantages may include:

- U-pick operations may suffer losses from inexperienced or careless pickers or when pickers are too few to harvest the entire crop.
- You may have insufficient parking space.
- Your liability may increase due to the potential for accidents.

Roadside stands and markets

Roadside stands typically are on the farm. They sell the owner's products seasonally, coinciding with harvest schedules. Sometimes, a roadside stand also sells goods from other local farms. It's important to maintain



good quality control when buying from other producers. A suitable location, safe access to the stand, plenty of parking, and knowledgeable and friendly sales personnel are essential for a successful roadside stand.

Advantages of a roadside stand may include:

- You can manage time more efficiently because of the close proximity of farm and stand operations.
- Transportation costs are reduced.
- You can match production and harvest to meet consumer demand.
- You can expand production as you improve your direct-sales ability.
- You can improve facilities as volume and returns increase.



As you gain experience and accumulate capital, you may wish to develop your roadside stand into a roadside market, which typically sells both owner-produced and purchased products.

Roadside markets typically are open at least 7 months per year. They frequently stock a full line of produce, dairy products, and processed farm products. Thus, they rely heavily on wholesalers and brokers for out-of-season supplies. They may sell items other than produce, but successful roadside markets usually are identified with a rural environment and sale of “home-grown” products. Roadside markets, like roadside stands, usually are on or near the grower’s property, which clearly associates them with rural farming.

Operators of roadside markets frequently cite the same advantages for their operations as do roadside stand operators.

In addition, roadside markets offer:

- The opportunity to expand the diversity of products offered for sale through purchases from wholesalers
- The possibility of retaining key employees and loyal customers year-round
- The possibility of offering cost-effective entertainment events such as musical performances, petting zoos, or displays

- The possibility that additional income from a year-round farm market may reduce or even eliminate dependence on income from off-farm employment

Disadvantages of roadside markets and stands may include:

- The need for a strong retailing background and experience
- Greater need for capital for facilities and inventory, especially for a year-round market
- The addition of a year-round component to an otherwise seasonal farm operation
- Dealing with zoning and building code issues

Farmers’ markets

Farmers’ markets have many other names, including open-air markets, curb markets, community produce markets, and farmers’ retail markets. These community markets are a gathering point for producers to sell locally grown produce and other specialty products to local consumers. Facilities may be large, permanent structures, or parking lots where growers sell from their trucks, or temporary stalls. The facilities may be owned by a city or by private individuals, corporations, or not-for-profit organizations.

Most farmers’ markets are organized under a formal set of rules, guidelines, or by-laws. Frequently, a volunteer or paid manager oversees the operation of the market.

Growers who sell at farmers’ markets frequently cite a number of advantages:

- Farmers’ markets are becoming central to community seasonal activities.
- Collective selling attracts more customers, who like having a variety of products and services in one place.
- Customers are drawn by the possibility of buying or ordering special items in large quantities for home processing.
- The markets provide excellent opportunities to improve farmer–consumer understanding through direct contact.

- Low-income or elderly urban residents who cannot travel to production areas may be among the most reliable customers of a farmers' market.
- Some farmers' markets are involved in the federal Women, Infants, and Children (WIC) Program.
- Entertainment such as music or special events may be more affordable when costs are shared among a number of sellers.

Potential disadvantages of farmers' markets also need to be considered. For example:

- Costs related to transportation and selling increase.
- There may be downward competitive price pressure because price comparison is easy, and some buyers at farmers' markets may be more bargain-conscious than customers who come to individual farm locations.
- Time away from production operations can reduce productivity.
- Limited market days may put pressure on production schedules and result in insufficient volume sold.
- Most markets are not open year-round, so market locations can be in jeopardy if owners find more profitable uses for the space. Sometimes, using municipally owned land mitigates this potential problem.
- Obtaining competent market managers may be difficult.

Internet sales and mail order

Many growers find that selling from a website works well. Some farms combine a website with a mail-order catalog or newsletter. They sell everything from produce gift baskets to on-farm processed food products and Christmas trees. Destinations range from local to international. Growers like this form of marketing because it lengthens the selling season and expands the customer base.

Producers often develop e-mail and postal address lists from contacts they make at on-farm selling operations or farmers' markets. Mailing lists also can be purchased. Often,

using group websites or catalogs or contacting buyers' clubs increases sales. In some cases, producers cooperate to prepare and send products.

The Internet provides a mail-order opportunity. You can design a website yourself by using a software package, or you can contract with a professional. You will need a "domain name" and an Internet service provider (ISP) to host your website. Browse websites of other farm businesses to get ideas on how to design your own.

Often, growers include order forms on their website, which customers can fill out and submit, either electronically or by regular mail. Increasingly, customers pay for online purchases by entering their bank charge card number on an electronic order form. To use this method, you need to be able to accept credit card orders. So, talk with your bank and your ISP to check out the possibilities. The grower ships or delivers all orders in the traditional way.

Community-supported agriculture

Community-supported agriculture (CSA), also called subscription farming, is another method of direct marketing. In one model of CSA, members purchase shares of the farm's harvest—and accept the risk that the crop may be damaged or lost due, for example, to weather. This differs from traditional production and marketing in which the grower bears all risk. Usually, there is a weekly pickup day and time at the farm or at a neighborhood location. Membership may include an electronic newsletter, a harvest celebration event, and other "perks."

In another model, members pay a fee before the season and also pay by the pound for what they pick. Although a membership fee is paid, the farmer assumes all the risks of crop failure: the fee is secured, but sales are decreased—to zero, under extreme conditions.



In a third scenario, members of a food buyers club pay an annual membership fee plus a per-pound fee for what they purchase. Rather than harvest their own, members fill out a produce order each week, and the grower takes the food to a central distribution point for pickup.

Advantages to marketing through a CSA may include:

- Reduced risk to the farmer, because the customer shares in the risk of farming.
- At least some payments come before or early in the growing season, improving cash flow.
- Produce is very fresh, often picked the day of marketing.
- Produce may be home delivered, taken to a central distribution point, or picked up at the farm.
 - The producer has a dedicated market before the growing season begins, as the customer may help determine what is planted.
 - Farmers can find secondary markets for excess production, such as roadside stands and grocery stores.
- There is a deeper level of contact between the producer and the consumer, through which customers may learn something of the farming ethic and how things are grown.
- The customer may provide some of the labor.



There also are possible disadvantages. For example:

- Growing a wide variety of crops adds complexity to the farm operation.
- The grower must develop relationships with many customers instead of a few simpler, wholesale-marketing relationships.
- Successful production techniques may be more demanding.
- Pickup may not be as convenient for customers as shopping at the local supermarket.

Direct to restaurants, other businesses, and institutions

Selling directly to restaurants and other businesses and institutions (hotels, schools, food-service vendors, etc.) is like selling directly to consumers. It eliminates one or two middlemen, but you have to provide the services that they would have performed. By assuming traditional wholesaler functions, the grower can keep the profit that normally goes to the wholesaler.

In the case of restaurants, as an example, chefs and restaurant owners often are willing to make the extra effort to get high-quality and specialty items. However, they demand the same consistent quality and service from the farmer that they can get from a wholesaler—broad product line, partial cases of product, clean produce, frequent delivery schedules, convenient ordering, and expert advice.

Urban, suburban, and tourist destination areas usually have the number and type of restaurants that could make selling directly to restaurants economically feasible. A restaurant's produce needs depend on its style of cuisine, chef's preferences, number of customers, and menu prices. Generally, restaurants that feature regional specialties, vegetarian dishes, or unusual cuisine are the best candidates for direct sales. For example, restaurants in the Seattle area continue to position themselves in the marketplace using a "fresh, locally grown" angle in their menus.

Some restaurants seek out unusual varieties of vegetables and fruit, such as those usually grown in other countries or old varieties often referred to as "heirlooms." Organically grown produce is in demand by some restaurants. Restaurant menus may feature farm names, locations where produce is grown, variety names of produce, and health claims about their dishes. The restaurant may be willing to have on-table "tent" placards that provide additional information about your business and the produce you supply to the restaurant.

Expect to spend several years developing a profitable direct-to-restaurant business. You must make a dedicated, service-oriented commitment. Developing relationships, product line, and quality service takes good planning and hands-on experience. Restaurants often use the Web to market themselves and to order supplies. By using a restaurant's web-based ordering system, you can set up "cyber" relationships with your restaurant customers.

An effective relationship with a chef involves annual planning to help the chef learn which specialty products can be grown in the area and to help you decide what crops to plant for the upcoming season. You'll need to develop a product line broad enough to accommodate a group of restaurants and to justify the cost of delivery to each individual restaurant. Your service quality—e.g., product presentation, phone service, and delivery—must be excellent for a restaurant to justify reducing or dropping orders from its year-round produce wholesaler for the short, local growing season.

Frequently cited advantages for direct-to-restaurant sales include:

- A higher price than from other wholesale customers and thus potentially higher profit
- A possible outlet for specialty or unusual products
- More precise production planning

Frequently cited disadvantages for direct-to-restaurant sales include:

- The need for a high level of off-farm customer service
- Competition from wholesalers who have a year-round product line and sales staff
- The need for a broad product line
- Low per-customer sales volume, compared to wholesale outlets



Participation in agri-tourism

Families often look for more than fresh produce and local products when visiting farms and related markets. They frequently are looking for entertainment and educational opportunities. Corn mazes (such as the one above, on Sauvie Island, Oregon), hayrides, festivals, petting farms, and musical events are among many things that can be added to the fun of a farm experience. These types of activities, frequently referred to as agri-tourism, have the potential to draw customers from a wider area.

Many state and local governments have tourism programs, which can be very helpful to you in creating tourist events. Frequently, a group or community effort can be effective in drawing these resources into an agri-tourism project. Farm guides, community websites, tourism pamphlets, and news releases often are used to create successful promotions. Northwest communities have many festivals centering on crop harvest: strawberries, lavender, pumpkins, apples, and wine grapes, to name just a few. Checking out existing festivals can provide good ideas to help you develop a model for a new festival.

Additional resources for farm direct marketing

Farmer to Consumer Marketing: An Overview, PNW 201, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

Farmer to Consumer Marketing: Financial Management, PNW 206, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

Farmer to Consumer Marketing: Merchandising, Pricing, and Promotional Strategies, PNW 203, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

Farmer to Consumer Marketing: Personnel Management, PNW 205, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

Farmer to Consumer Marketing: Place of Business and Product Quality, PNW 204, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

Farmer to Consumer Marketing: Production and Marketing Costs, PNW 202, by Larry Burt, Linda Burt, Richard Carkner, Harvey Meier, and Blair Wolfley (Washington State University, Pullman, 1981).

How to Conduct Your Own Survey, by Priscilla Salant and Don Dillman (John Wiley & Sons, Inc., New York, 1994).

The Handbook of Regulations for Direct Farm Marketing ("The Green Book"), 5th ed., Small Farm and Direct Marketing Program (Washington State Department of Agriculture, 2005). For information about the Domestic Marketing and Economic Development agency, which administers the program, view <http://agr.wa.gov/ContactUs/WhoToContact.pdf>

When Things Don't Work: Some Insights into Why Farmers' Markets Close, SR 1073, by Garry Stephenson, Larry Lev, and Linda Brewer (Oregon State University, Corvallis, 2006).

How to order Extension publications

Extension publications in the PNW series may be ordered from any of the following offices; order OSU publications from OSU. Before ordering, please check to learn sales prices, availability, and shipping, handling, and sales tax charges.

Oregon State University
(toll free) 1-800-561-6719
e-mail puborders@oregonstate.edu
<http://extension.oregonstate.edu/catalog/>

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e-mail calspubs@uidaho.edu
<http://info.ag.uidaho.edu/>

Washington State University
(toll free) 1-800-723-1763
e-mail bulletin@wsu.edu
<http://pubs.wsu.edu/>



Wholesale marketing

In the past 50 years, fresh-produce marketing has evolved into a highly sophisticated and efficient marketing mechanism. From handling only a limited selection of locally produced seasonal items, it now markets a large selection of local, national, and international products. Improved transportation and communication systems, as well as uniform grading and packing standards, allow wholesale buyers to shop in various growing regions to find the product and price they desire. Farmers benefit from the increasing number of marketing opportunities. Consumers benefit from greater selection and lower prices.

More and more retailers are operating their own wholesale distribution centers. Large wholesale distribution centers, usually affiliated with large retail chains, often have buyers in major growing regions. New Internet grocery retailers recently have set up distribution centers in urban areas.

If you want to sell produce to distant buyers, you have to make several investments, including:

- Office space
- A dedicated phone line and a computerized record-keeping system
- Packing equipment
- Cooling, storage, and loading facilities
- Skilled office personnel
- A skilled marketer, if you don't have the time or ability to do that job yourself

Introduction to selling wholesale

Product selection

Select the crops that best fit your farm's production capabilities and that serve a market need. At the same time, don't overlook opportunities to grow previously untried crops. Hundreds of fresh produce items are available in grocery stores today; a trip to your community supermarket during the local season can help you prepare a list of primary items.

Price can be an important determinant of product potential. A trend toward high product prices at the shipping point or terminal market during the Pacific Northwest production season can indicate potential high net returns.

The U.S. Department of Agriculture (USDA) Agricultural Marketing Service (AMS) has a wealth of information to help you decide what product(s) to market. The market news reports, prepared by the USDA Federal-State Market News Service, include price, volume, quality, condition, farmers' market, and auction information and other market data related to supply and demand in specific markets and marketing areas. Reports are available for fruits, vegetables, and specialty crops, poultry and eggs, and dairy products.

You can use these reports to help identify most of the produce items shipped into major market areas. Also, the reports indicate the states from which produce is shipped each month and the volume of shipments. Using back issues of the report, you can detect expanding and contracting markets for specific crops. This information can help you choose which products to ship and also give you some indication of the competition you can expect in a particular market.



These reports are on the AMS website at <http://www.ams.usda.gov/> and are in print in any library that houses government documents. The Federal-State Market News Service also publishes historical reports, available in print through libraries.

Today's Market Prices, a commercial service, stores recent historical reports online at <http://todaymarket.com/>. There is a fee for using this site, but a free trial period is available.

Buyers and brokers

In wholesale marketing, you typically will deal with brokers, consolidators, or chain buyers in major produce-production areas. In some cases you'll deal with brokers and buyers in major cities with terminal markets, where many brokers and wholesalers are in common areas. Generally, supermarket distribution centers are in suburban areas of metropolitan regions. In some instances, with a high-value and small-volume crop, you can ship directly to a retailer or restaurant.

Wholesalers who want a small amount of produce or a small number of specialty items frequently rely on brokers. Terminal-market brokers can help you divide a full load of produce for sale among two or more buyers. Shipping-point brokers also can help you arrange sales in distant markets.

While analyzing your market, try to contact buyers and brokers representing firms in market areas that are potential customers for Pacific Northwest fresh produce. Personal visits and phone contacts are best—most produce handlers have little time to answer letters. Find addresses and phone numbers in:

- Phone directories for major cities (usually available in local libraries or on the Web)
- Trade directories and educational programming of the United Fresh Produce Association at <http://www.unitedfresh.org/> and the Produce Marketing Association at <http://www.pma.com/>
- *The Red Book* and *The Blue Book*, credit-rating services (see page 22)
- Ads in the weekly produce trade newspaper *The Packer* (see "Industry resources," page 13)

Buyers and brokers may be willing to provide information on the needs of particular customers. Requirements vary by firm and market area. For example, East Coast firms affiliated with retail grocery stores might prefer produce in small packs, while West Coast firms might prefer bulk packs. Most market areas show preference for a particular variety of fruit or vegetable because of appearance, taste, or tradition. Ask a buyer or broker about:

- Desired characteristics (variety, grade, etc.)
- Type of packaging preferred
- Current sources
- Weekly purchase volume
- Preferred transportation methods
- Prices paid
- Payment schedule
- Ordering procedures

Solicit this information for each market area you consider. It can help you get a good picture of the demand for particular products and the procedures needed to get them into the market. After surveying several market areas, you can compare composite descriptions of each market. You then can analyze further those with the most potential.

Industry resources

For more than 100 years, Vance Publishing Corporation in Lenexa, Kansas, has published *The Packer* (<http://www.thepacker.com>) and other periodicals for the fresh produce industry. *The Packer* is a national, weekly newspaper and website for growers, shippers, packers, processors, wholesalers, food-service distributors and operators, retailers, and allied suppliers. It includes information on quality and availability, market conditions, and regulatory issues and trends.

To see other Vance publications for the food industry, visit <http://www.vancepublishing.com> and click on FOOD 360.

A number of websites are good resources for finding potential wholesale and retail buyers, produce brokers, truck brokers, freight forwarders, independent truckers, airline shippers, railroads, ship companies, or other services. For example, R.H. Donnelley has a national phone directory at <http://www.dexknows.com/> where you can search for businesses by type of business or business name. Map and address searches are easy to do by city and state; Idearc provides a site at <http://www.superpages.com/>

Consumers

Don't forget that wholesale buyers and brokers are trying to fulfill consumer desires. They represent the customers who purchase fresh produce in the marketplace.

To develop a market for a new product or expand consumption of an existing one, you may have to obtain additional information directly from consumers. In each market area, survey customers or marketing personnel who deal directly with consumers (such as produce department managers and restaurant chefs). Their input may provide valuable insight into the sales potential of fresh produce or other specialty products.

Analysis of general trends in consumption of fresh produce also may contribute helpful information. You can find data, much of it online, in various publications from the USDA, land-grant universities, and national

food marketing associations. The Economic Research Service (ERS) of the USDA

(<http://www.ers.usda.gov/>) offers publications, reports, and other services. They focus on agricultural policy and programs, credit, food marketing, agricultural labor and other inputs, international agriculture and trade, rural development, specialty agriculture, and statistics. ERS publishes *Amber Waves* five times per year. Written by ERS researchers and collaborators, it covers a wide spectrum of agricultural and food industry issues and trends. Printed copies are available by subscription; the electronic version of each issue is free, at <http://www.ers.usda.gov/AmberWaves/>



Meeting market requirements

Your ability to meet the market's product requirements is very important for success. Meeting quality standards, investing in necessary cooling facilities, delivering a well-packed product, and meeting minimum volume needs can be expensive. This section discusses each of these topics. Carefully analyze the costs involved and the potential returns you expect before entering any distant market.

Quality

Growing and shipping high-quality products is a prerequisite to success in the fresh produce market. In the produce industry, quality is described by "grade" and "standard." There are USDA grades for most commodities, and shipping area market order grades for specific commodities. And, there are generally accepted industry standards and individual buyer standards. You need to know all the grades and standards that apply to the crops you sell.

The USDA-AMS has a grading and certification program for various products. The USDA originally established these grades to bring order to the fresh produce industry. Without uniform standards, transactions were difficult, as buyers and sellers in different parts of the country often had different definitions of quality. Certification services assure large-volume buyers that products meet contract specifications for quality, processing, size, packaging, and delivery.

The USDA considers size, shape, color, and condition when assigning a grade. Grade names might vary. Common ones include, in declining order of quality, Extra Fancy, Fancy, Good, U.S. No. 1, and U.S. No. 2. Grade descriptions of fresh fruits and vegetables are available from local USDA inspection offices and from state departments of agriculture.

AMS grading services are provided on a user-fee basis. The services include:

- Quality standards for more than 200 agricultural commodities
- Grading, inspection, quality assurance, and acceptance services to certify the grade or quality of products
- Inspection of processing facilities
- Assessment and registration of product and service quality management systems to conform with established, internationally recognized standards for some commodities
- Verification of compliance with voluntary standards or contractual requirements

Both shippers and receivers use AMS grading inspections to confirm quality and condition of products. Institutional buyers, processors, and government agencies use grading services to establish contract specifications. In cooperation with state departments of agriculture, federally licensed inspectors provide grading services.

USDA grades are the principal standards used by the industry, but USDA grading is not mandatory for interstate shipments unless specified by a market order. Usually, the main purpose of a market order is to set mandatory grades for specific crops shipped

out of a growing region. These standards often are tougher than the USDA's. Federal and state laws allow grower groups to set up market orders to promote more consistent marketing.

If you want more information on market orders, contact your state department of agriculture or visit the market orders section of the USDA-AMS website, at <http://www.ams.usda.gov/>

Commonly accepted standards

Besides those industry standards already discussed, in many cases other standards apply to quality, appearance, or packaging. Although generally not formalized, they represent commonly accepted practice and buyer expectations. For example, most buyers ordering produce from distant growing regions require precooled produce, which retains its quality longer than uncooled produce.

Other industry standards relate to packaging. Most buyers prefer a certain type of package because it maintains superior-quality produce.

Buyers require consistent quality. Businesses handling produce operate on low margins, so they want to minimize losses caused by spoilage. Shipping a high-quality product can minimize spoilage losses throughout the marketing system.

Individual buyers and their firms often have their own standards to meet local needs. Consumers in one geographic area may have a particular preference—for taste, size, color, or package—that is not covered in the grade standards. Thus, buyers frequently establish their own standards and communicate them to suppliers.

It is important that you know and understand all applicable product standards. It also is important that you consistently meet or exceed these standards. It is a good, cost-effective idea to have produce inspected by a third party, such as USDA-AMS, before shipment. Doing so protects you, the buyer, and the shipper.

Organic marketing

Consumer demand for organically grown products is growing rapidly. Supermarket organic produce sections are now common. Some farmers' markets have become organic-only outlets. National marketing opportunities for organic produce are opening up.

The 1990 Organic Foods Production Act (OFPA) required USDA-AMS to develop national standards for organically produced agricultural products, to assure consumers that agricultural products marketed as organic meet consistent, uniform standards. The USDA adopted final organic regulations in 2002. For details, visit the National Organic Program (NOP) website <http://www.ams.usda.gov/nop/>

In most cases, a farm using the term "organic" in its labeling and marketing must be certified by a state or private entity accredited by USDA. The only exceptions are farms that normally sell less than \$5,000 of their own products annually. Wholesalers, restaurants, and retailers typically require farm certification for the organic produce they buy.

The Idaho program

The director of the Idaho Department of Agriculture appoints an Organic Food Advisory Council to establish rules, regulations, and standards for producing, handling, advertising, and selling organically grown foods. With the exception of apiary products (e.g., honey), the rules do not apply to any livestock, dairy, or aquaculture products.

Anyone in Idaho producing or marketing food products identified as organic must be registered and certified by the state. Farm histories, notarized applications, and application fees must be submitted to the Idaho Department of Agriculture. Thorough, accurate record keeping is required. Regular state inspections of production and handling operations are required during the growing season, and samples might be taken for chemical analysis. Additional unannounced onsite inspections are permissible.

Obtain details of the Idaho Organic Certification Program, a resource guide, and application from the Idaho Department of Agriculture Organic Certification Program Office, PO Box 790, Boise, ID 83701; phone 208-332-8620; <http://www.agri.state.id.us/> (click on INSPECTIONS & EXAMS, then on ORGANIC).



The Oregon program

USDA-AMS administers Oregon's organic foods marketing program: for details, go to <http://www.ams.usda.gov/nop/>

Organic certification services in Oregon are provided by Oregon Tilth, at <http://www.tilth.org/> (click on CERTIFICATION). Oregon growers, wholesalers, and retailers using the term "organic" must conform to the rules.

The Washington program

In Washington, producers, handlers, and sellers of organically grown food must be certified by the Washington State Department of Agriculture (WSDA) and pay an annual fee. However, some farmers' markets in the state require their vendors be certified even if they have less than \$5,000 in sales. Anyone claiming their product is organic, whether certified or not, must comply with WSDA organic standards.

The WSDA Organic Food Program has detailed information on:

- Organic crop production standards
- Application and certification procedures
- Visits by WSDA Organic Field Inspectors
- Regulation of organic food handlers, livestock operations, and food processors

Contact the WSDA, Food Safety and Consumer Services Division, Organic Food Program, at 360-902-1805; <http://agr.wa.gov/FoodAnimal/Organic/>

An excellent source of up-to-date information on postharvest technology is University of California at Davis at <http://postharvest.ucdavis.edu/> The Postharvest Technology Research and Information Center in the university's Department of Plant Sciences strives to provide the latest in research and Extension information for growers, shippers, marketers, carriers, distributors, retailers, processors, and consumers of fresh horticultural crops.

Another resource is *The Commercial Storage of Fruits, Vegetables and Florist and Nursery Stocks*, USDA Agricultural Research Service Handbook 66, revised 2004; <http://www.ba.ars.usda.gov/hb66/> This includes about 100 papers, on postharvest biology and technology, which have been peer reviewed and edited for scientific content.

Production and harvesting

Providing good growing conditions for your crops is important. If you maintain soil health, control harmful insects and dis-

eases, and provide necessary nutrients and water, you are likely to produce a healthy crop, which gives you a better chance to market it at maximum value.

Fresh-market standards generally are stricter than processor standards, so more management time is required. Make sure adequate local labor is available to prepare your crop properly for market. Proper care of your crop during growing and handling is essential to produce a high-percentage packable product.

Select crop varieties that are resistant to specific insects and diseases or are more tolerant of adverse environmental conditions. Some new varieties have unusual colors, sizes, or shapes, or are sweeter, or hold in storage longer. Unusual characteristics might result in higher prices or easier entry into some markets.

Plan harvest operations carefully so crops are harvested at optimum maturity. Harvesting in the cool of the morning, shading the harvest in the field, and cooling it as soon as possible all help maintain a high-quality product.

It is important to lay out fields properly to minimize machine- and human-inflicted damage to the crop. Skilled and properly supervised harvest crews can keep physical damage to a minimum and ensure that only produce of the proper maturity and condition is harvested.

Keep your packing lines in good condition and staff them with skilled personnel. These measures ensure accurate grading and minimize physical damage to the product.

Food safety

Food safety procedures are imperative for all aspects of your business: production, harvesting, packing, storing, and distribution. These procedures are commonly referred to as Good Agricultural Practices and are designed to keep harmful organisms such as *E. coli* out of the product. Numerous sources of contamination include contact with nearby farm animals, improperly composted soil amendments, poor-quality water, and untrained workers. Safety verification services are available. In some cases, you may find that buyers require producers to have food safety procedures in place and require third-party inspections to confirm compliance.

Cooling

Fruits, vegetables, and flowers are still alive after harvest. The living cells in harvested produce combine oxygen from the surrounding air with sugars and starches in the plant to form carbon dioxide, water, and heat. This process is called respiration. Respiration results in produce deterioration, including loss of nutritional value, changes in texture and flavor, and loss of weight. These processes cannot be stopped, but they can be slowed significantly by careful postharvest handling and cooling.



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Respiration rates vary tremendously for different products and are affected by environmental conditions such as temperature. The closer a plant gets to its freezing point, the slower its respiration rate and the growth of decay organisms. For every increase of 18°F between the freezing point and 100°F, the respiration rate increases two or three times. Generally, the higher the respiration rate of a fruit or vegetable, the greater the need for postharvest cooling.

Removing field heat from newly harvested produce can increase its shelf life. Wet or damp produce must be cooled, as warm, wet produce creates an environment that encourages the growth of decay organisms. The rapid cooling of fresh produce from field temperature to its best storage temperature is called precooling. Precooling usually is the grower-shipper's responsibility.



The four basic methods of precooling are forced air, hydrocooling, vacuum cooling, and icing. Each was developed with specific crops in mind. For each crop, it is critical to know how to handle the produce at harvest, whether cooling is necessary, and the best method of cooling.

Buyer expectations based on tradition or local market conditions might call for some variation in cooling techniques. Cost also is an important consideration when you select a precooling method.

An excellent source of information on cooling commercial produce is *Commercial Cooling of Fruits, Vegetables and Flowers*, Publication 21567 revised, U.C.–Davis Postharvest Technology Research and Information Center. The emphasis is on the two most popular cooling methods: hydro and forced air. See a list of contents and order the publication at <http://postharvest.ucdavis.edu/datastorefiles/234-117.pdf>

Forced air

In this method, cool air moves rapidly over a product to remove the field heat. Inside a cool storage room, fans pull air through the produce boxes and back into the cooling unit.

When you design a cool room, provide enough refrigeration capacity and proper humidity control. These steps can prevent excess weight loss.

Forced air units are affordable for many small-scale growers. Alternatively, an existing cold room can be augmented by making cooling tunnels using portable fans and tarps. Line up two rows of produce and set up a fan to draw air down the aisle between the rows. Cover the aisle with a sturdy tarp to force the system to draw air through the boxes of produce.

Forced air cools most commodities effectively, but those best adapted to this method include berries, stone fruits, and mushrooms.

Hydrocooling

Hydrocooling cools produce with chilled water. The water usually is cooled by mechanical refrigeration, although cold well water and ice sometimes are used. The size of hydrocooling units varies depending on the size of the operation, but considerable refrigeration or large quantities of ice are required to keep the water at the desired temperature of 33° to 36°F.

The produce is cooled by a water bath or sprinkler system. The produce either is dumped in the bath or under the sprinkler or is left in bins or boxes. Small operations might have an ice-water tank in which to “stir” the vegetables for rapid cooling.

Pay special attention to water quality. Unfiltered and unsanitized water can spread undesirable microorganisms.

Most vegetables and many fruits that can withstand wetting can be hydrocooled. Asparagus, celery, cantaloupes, green peas, leaf lettuce, peaches, radishes, and sweet corn can be cooled successfully with this method.

Vacuum cooling

Produce is placed in a vacuum tube, and air pressure is reduced greatly. At lower atmospheric pressure, some water from the produce “boils” away as the produce uses its own heat energy to convert water to gas, thus lowering the product’s temperature. Heat and moisture are removed from the vacuum tube by mechanical refrigeration.

Commercial vacuum units usually cool the product to the proper storage temperature in less than 30 minutes. Units are available for cooling different amounts of product, from two pallets to a full truckload.

Because of the high cost of this equipment, it might be more economical to do the cooling at a central location on a cooperative basis. Grower costs depend mainly on the volume cooled. Growers usually are able to recover costs by charging a fee per unit in addition to the agreed purchase price of the produce. Lettuce and a few other vegetables can be vacuum cooled effectively.

Icing

Crushed or slurry ice is placed directly into the produce box. This can be an effective way to precool individual boxes of certain vegetables. The produce can be cooled in a short time and the temperature maintained in transit. Broccoli, green onions, and some root crops most commonly are top iced.

Packing

The first consideration in packing is product quality. Produce should be uniform in size, color, condition, and overall quality. Buyers like to know exactly what they will get when they order produce from a farmer. Thus, a pack that is consistent in appearance and weight (sometimes a grade standard) throughout the season is desirable.

Pack to make the fruit or vegetables attractive to buyers. Sloppily packed containers distract the eye from the quality of the produce. Attractive packing frequently encourages repeat purchases.

High-quality produce must be handled carefully during harvesting and packing. For produce packed in the field, you have to rely on skilled harvesters and adequate supervision. In a packing shed, you must rely on skilled line workers and properly operating equipment.

The cost for building and operating a packing shed varies according to product needs and type of equipment. Though usually more expensive than field packing, packing sheds offer some advantages. Grading and packing can be done under well-supervised and less strenuous working conditions and with suitable equipment. The result often is a higher



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quality and more uniform pack than can be achieved in the field.

Some crops, however, cannot absorb the additional costs of shed packing. Also, some products, such as berries, do not lend themselves to the additional handling required in packing sheds. If such handling is necessary, harvesters should select only clean, firm fruit that will allow extra handling.

When you choose a packaging container, consider several functional criteria. The container must meet industry standards for size, volume, and strength and must allow for

efficient cooling of the contents. In addition, be sure the container protects the product throughout distribution and is suitable for storing on standard pallets. Last, the package must present your product in a useful and attractive manner.

Buyers usually expect new, unused containers. Sometimes, however, recycled produce boxes are acceptable for deliveries directly to a customer such as a restaurant. But keep in mind that recycled containers may have another farm's name printed on the outside, and your excellent job of production and handling may be attributed to that farm!

Some products are packaged in smaller units before being placed in the shipping carton. Apples and pears may be wrapped individually and placed on layer trays. Berries may be sold in pint or half-pint containers and covered with a clear plastic lid. Berries also may be sold in clear plastic, clamshell-type containers for easier handling. Carrots often are placed in 1- or 2-pound bags.

Shippers often use prepacking to provide additional protection for their product. Many retail buyers prefer prepacking of some products to reduce the amount of preparation and handling at the point of sale. Product look-up codes and/or bar codes are usually required for consumer prepackaged items. With many types of fruit, such as apples and pears, a coded sticker is applied to each piece for easy identification by supermarket clerks. Be sure to check with potential buyers to determine their labeling requirements.

Prepackaged produce is more expensive to prepare and ship than bulk produce, so your pricing should reflect the added cost.

When you package produce destined for retail supermarket shelves, use an attractive package. A package that shows off the product and has an attractive label helps promote sales. Be sure to include your farm name, business telephone number, and address (where the product is grown) to help promote locally grown products. Take advantage of any local promotions or logos that identify products as locally grown. Advertise your farm website (you really should have one)



to encourage buyers to check out your full line of products and to make future ordering easier. Carton manufacturers in the Pacific Northwest are willing to help growers select and design a box to meet their needs.

For a compilation of best industry practices on handling and transporting perishable foods, see *Protecting Perishable Foods During Transport by Truck*, Handbook 669, 2006, USDA-AMS. Order from:

USDA-AMS
Transportation and Marketing Division
Shipper and Exporter Assistance Publications
1400 Independence Ave. SW
Room 1217, South Building, or Stop 0267
Washington, DC 20250-0267
Tel. 202-690-1304
Fax 202-690-1340

Volume requirements

The minimum amount of one commodity you can sell on any given day usually is set by your buyer's requirements. Buyers prefer to deal with as few suppliers as possible to simplify their logistics. Thus, they often look for grower-shippers who can supply a significant portion of what they require.

At the same time, most buyers want shipments to be consistent throughout the season. They usually prefer regular shipments at a steady volume, quality, and competitive price. For vegetables, pay close attention to planting schedules and variety selection. For fruits, you need adequate postharvest storage facilities to extend the marketing season.

Being able to supply several commodities at one time also can be to your advantage if it is more convenient for the buyer. Remember that different buyers need different volumes. Look for those buyers whose product and volume needs *you* can best fulfill.

Transportation also puts constraints on volume. Trucking is the most common way to move produce in the continental U.S. Truckers prefer to move only full truckloads to distant cities, and truck trailers have volume and weight limits. Thus, shipments to most markets must be within precise truckload limits. Air and sea containers also require shipping in units with precise sizes and weights.



Your sales are limited to what you or the buyer can arrange to ship. If you are a low-volume shipper, you or the buyer may be able to arrange to ship in a joint load with another shipper. If you sell in small markets or grow specialty crops, you may encounter volume limits as well. At some level, all mar-

kets become saturated. Shipping into small markets might not be economical, so evaluate them closely.

Selling to wholesalers

Selling fresh produce and specialty products requires skill in selecting a selling method, setting the right price, managing credit accounts, promoting your product, and establishing good relations with buyers. Your profitability depends directly on your skills as a seller. Each of these topics is discussed below.

Selecting a selling method

You can sell your produce in the wholesale market in a number of ways. Consider several criteria when selecting a wholesaling method:

- Your marketing skills or those of others who do the selling

- Your desire to be involved in the marketing process
- The volume of product you need to sell
- Investment costs and net returns

In the regional wholesale markets of major Pacific Northwest cities, you generally do the selling yourself. For more distant markets, you probably must depend on private shippers, brokers, or cooperatives.

In many growing areas, there are grower-shippers who are willing to market the produce of neighboring farms. Evaluate their skills and facilities for selling. In some cases, they buy the product outright from neighboring growers. In other cases, they may charge a marketing fee for their services.

Shipping-point brokers also are used by some Pacific Northwest growers. For a percentage of your sales price or for a per-unit fee, they handle the sale arrangements and monetary transactions. Their commissions usually fall between 5 and 10 percent but can be lower for high-volume items. Brokers usually do not take direct possession of the product; they arrange to have the packed product moved from the farm to the market. Brokers can be particularly helpful for selling relatively small volumes and gaining initial access to major metropolitan markets.

Cooperatives are another way Pacific Northwest growers market their fresh produce. Through a co-op, growers can invest as a group in necessary selling facilities and staff. Marketing costs can be spread over a larger volume of product. Also, any profits (savings) eventually are returned to the grower-members. A cooperative may be a good option if you are a small producer, or if you are in highly competitive markets where growers need more market power.

For more information on cooperatives, see *A Brief Introduction to Agricultural Cooperatives*, EM 8665, 2005, OSU Extension Service; <http://extension.oregonstate.edu/catalog/pdf/em/em8665.pdf>

The USDA Rural Development, Rural Business-Cooperative Service website at <http://www.rurdev.usda.gov/> describes agency

programs and services and lists state specialists who help new and existing cooperatives. The focus is on rural development, business and cooperatives, housing and community facilities, utilities, and community development and empowerment. There also are links to other websites.

Setting prices

Setting prices is one of the most important skills you must acquire. Prices must balance two objectives:



establishing market share and earning an acceptable return. Usually, the wholesale market can be characterized as a buyers' market where there are fewer wholesale buyers than producers wishing to sell. You need to be a skilled seller to identify buyers willing to pay the highest prices and to negotiate prices in your favor.

The key to good pricing is good information. Although you'll never have *all* the market information you'd like to have, be as well informed as possible. You should know:

- Your break-even price at various given sales volumes (see the Appendix, page 27, for help in calculating this)
- What your competitors are offering
- Prevailing market prices
- Your product quality relative to others available on the market

An important source of information is the USDA-AMS market news reports, at <http://www.ams.usda.gov/> The site also gives up-to-date information on AMS programs and services, farm direct marketing, grades and standards, and marketing orders, and it has links to many other sites. There also are regular reports on shipping and terminal markets, national rail and truck shipments, and truck rates. Reports cover domestic and international markets. Within hours of collection, data are disseminated via a satellite system and made available electronically, in printed reports, on telephone recordings, and through the news media.

Today's Market Prices, a commercial service, stores recent historical reports on fresh fruit and vegetable markets at <http://todaymarket.com/> There is a fee for using this site, but a free trial period is available. Extensive links to other sites are included and are free to all users.

Financial arrangements

Most wholesale transactions in the fresh produce industry are made on credit, to speed movement of perishable goods.

The federal government, under the Perishable Agricultural Commodities Act (PACA) of 1930, promotes fair trade and regulates the extension of interstate credit in the produce industry. Under this industry-developed and sponsored law, produce buyers and sellers are required to satisfy the terms of their contracts. Sellers must ship the quality and quantity specified, and buyers must accept shipments that meet contract specifications. Both informal and formal procedures are available to resolve disputes outside the civil court system.

PACA protects the seller from buyer failure to pay the agreed price in compliance with the contract terms, and from unreasonably slow payment. PACA regulations state that payment for produce must be made within 10 days of the buyer's acceptance of the shipment unless otherwise agreed upon in writing. Often, however, payment may take 30 days or more to reach you.

PACA also protects sellers from buyer rejection of products without reasonable cause or from improper consignment handling. Discarding, dumping, or destroying products without reasonable cause is prohibited. Also prohibited is misbranding or misrepresentation of grade, quality, quantity, weight, or country of origin.

Under PACA, a trust created from a buyer's produce-related assets will reimburse unpaid produce suppliers who have preserved their trust rights. Although the trust automatically goes into effect when the buyer receives the product, a seller must notify the buyer of the seller's intent to preserve trust benefits under

the law. In case of a business failure or bankruptcy, produce suppliers are paid first from the trust before general creditors receive payment.

Almost all produce shippers and buyers (those handling 2,000 pounds or more per day) must hold a license from the PACA Branch, Fruit and Vegetable Division, USDA-AMS. Parties found to have committed unfair trade practices face license suspension or revocation, which severely restricts their operations.

Growers are exempt from the licensing program as long as they sell only their own products. Also, retailers and frozen food brokers representing sellers are exempt until they purchase or negotiate sales of at least \$230,000 per calendar year. In addition, contract carrier truckers and most restaurants are not required to be licensed.

For details, see PACA's very informative website at <http://www.ams.usda.gov/fv/paca.htm>. In addition to information on the trust provision, you can learn who is required to be licensed, PACA procedures, bonding requirements, information on PACA offices and the states they serve, and how to file claims for damages.

Each Pacific Northwest state also regulates credit extension, and most commercial produce buyers must be licensed by the state. Buyers having only a cash buyer's license cannot buy on credit from growers. Wholesale and commission merchant licenses allow purchases with credit, but they require payment within a maximum number of days. Contact your state department of agriculture for information on regulations and licensing.

It's important to check a buyer's credit before you complete a sale. Two industry-recognized credit rating services are *The Red Book* and *The Blue Book*. Most buyers of interstate produce subscribe to them.

The Red Book, from Vance Publishing Corporation, includes credit rating information from vendors, trading partners, government agencies, banks, and a private credit services database. A directory of transportation brokers includes listings and ratings for brokers

and freight forwarders. For detailed information, contact people, and subscription information, go to <http://www.rbc.com/>

The Produce Reporter Company, in Carol Stream, IL, publishes *The Blue Book* twice a year. It provides credit and marketing information to the produce industry and those transportation industries that are exempt from federal regulation. In addition, it updates subscribers weekly on business status changes, personnel movements, and new firms. For detailed information on contacts and services available, visit <http://www.bluebookprco.com/>

Promotion and advertising

In order to sell produce in the national market, promotion and advertising often are necessary.

More than 2,000 major wholesale produce buyers are in the United States—too many to reach easily by personal contact or word of mouth. Promotion means making contact with potential buyers through an indirect medium, such as:

- Articles in trade publications
- Speaking engagements or attendance at trade association meetings
- Appointment to industry committees

All can help get your name and firm in front of the industry.

If you are just starting to market or are adding new products, you can send a news release to trade publications. The publications might print the release itself, or you might get a call from a reporter wanting a more detailed story.

Paid advertising allows you to time publicity and target it for maximum effectiveness. For example, announce the upcoming opening of your product shipping season. Invite buyers to place their initial orders. Remind buyers of the virtues of your particular product during the season. The aim of paid advertising is to get your name and products directly before the buyer as effectively and frequently as possible.

The print medium often is best for reaching industry buyers. Periodicals and trade association publications offer advertising space.

To reach consumers, promotion and advertising usually are done by commodity commissions and associations. Sometimes they work in cooperation with retailers. Only a few large shippers promote their branded products directly to consumers.

More and more consumers are shopping on the Web. Having your own website can connect you with those customers. You can promote your website with brochures, catalogs, business cards, correspondence, and signs. See “Internet sales and mail-order,” page 7, for more discussion on creating a website.

Types of risk

Starting a new marketing venture or opening a new market can be risky. You won't have an established relationship with buyers, and you will be unfamiliar with the ultimate users of your product. Until you “test the water,” you can't be sure of market reaction.

You risk the time and money you must invest to enter the market, possibly including additional on-farm facilities and equipment.

In addition to these initial risks are normal marketing risks associated with the perishability of most specialty products. You must harvest your produce when it reaches maturity, and you usually cannot store it long before it must be sold. As a result, there often are market gluts and low prices during peak harvest. You cannot always predict or avoid them.

Each handler in the distribution system can affect the quality of your product. Poor handling by a transportation firm or commission house can give the buyer a wrong impression about your product.

“Mother Nature” also can be unpredictable for produce growers. Inclement weather poses a common risk. And who knows when another Mediterranean fruitfly invasion or eruption of Mount St. Helens might occur?

It is important to take market and natural risks into account. Assigning a monetary value to

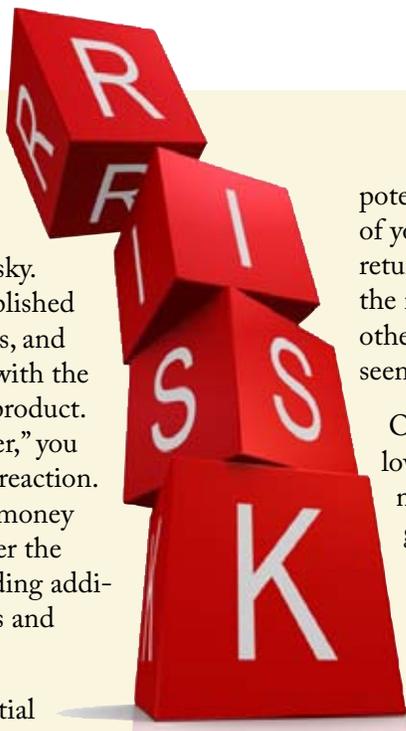
potential risks forces you to consider them as part of your expenses when you calculate potential net returns to your operation. Thus, you can compare the net return calculation to the returns of your other marketing options and select the one that seems most profitable.

Once you identify the risks, consider ways to lower them. One tool for reducing risk in a new market is thoroughly interviewing other growers and potential buyers and transporters. You can determine market needs more precisely and identify trustworthy buyers. You also can use credit reference books to confirm the creditworthiness of new buyers.

Shipping only high-quality products in well-designed containers can help reduce handling losses. Precooling and shipping with reliable transporters who use refrigeration also helps minimize product losses.

You cannot always predict periods of low market prices. However, you can learn market patterns by examining past trends, continuously monitoring current market conditions, and calculating the break-even harvest price. In this way, you can minimize your losses from adverse price changes.

You can buy insurance to lower some types of risk. In recent years, the USDA Risk Management Agency (<http://www.rma.usda.gov/>) and Farm Service Agency (<http://www.fsa.usda.gov/>) have expanded their insurance products to include most specialty crops and to cover losses beyond natural disasters. Be sure that transportation firms you use carry cargo insurance to cover losses from accident or equipment failure.



Buyer–seller relations

It is to your advantage to establish a mutually beneficial working relationship with your buyers. You need each other to stay in business. Good working relations bring long-term steadiness to the market: you benefit during a market glut by having a reliable outlet, and your buyer benefits during a crop shortage by having a reliable supplier. Established relationships require less of your time per transaction than new relationships, so they can save money.

Buyers are looking for several characteristics in a relationship with a supplier. For example, buyers typically:

- Prefer shippers who can provide a consistent product supply over the entire growing season. Buyers often prefer *not* to deal occasionally with a seller because that adds time per sale.
- Want a specific product quality and volume
- Look for reasonable prices
- Appreciate helpful, knowledgeable salespeople who can provide future supply information, help arrange transportation, and answer questions

Most sellers look for buyers who are reliable purchasers, pay on time, negotiate reasonable prices, and are easy to deal with. Payment policies vary between firms. Some firms pay weekly; others pay on the last day allowed under the applicable law. If cash flow is a major concern for you, look for buyers who offer prompt payment.

Good records are a necessity in case a dispute arises over a shipment of produce. A payment dispute with a distant buyer in the middle of the growing season can be expensive to settle. Maintain a good record-keeping system; any agency or legal representative called in to mediate a dispute will need verification of the shipment.

You risk losing touch with the market if you rely on a few established buyers. However, if you keep abreast of what is happening in the

marketplace at all times, you can avoid that risk and establish a mutually respectful relationship with your buyers.



Transportation to market

Commercial fresh produce moves in four ways within the United States: truck, rail, air, and ship. Refrigerated truck trailers move most fresh domestic produce. Railcar and piggyback (truck trailer on a flat-bed railcar) service move fresh produce from the Pacific Northwest to the East Coast. Air and ship services move highly perishable products to Alaska, Hawaii, Asia, and other export markets.

Your farm or market location largely determines which modes of transportation are available. The buyer usually selects the type of transportation and pays for it directly. In some cases, you might pay the transportation cost and include it in the final product selling price.

If you do have a choice of transportation method, consider:

- Product perishability
- Types of service available between shipping points
- Time to destination
- Quality of service provided by the method or firm
- Preference of the buyer
- Volume to be shipped
- Cost

Arrange transportation directly with the carrier or through a transportation broker or freight forwarder; the latter usually work on commission, which the carrier almost always pays. Freight forwarders also can transport produce from your farm to the loading facilities and can arrange transportation from freight terminal to the buyer's unloading dock. They usually charge an extra fee for these services.

Truck

The most widely used means of transporting fresh produce is refrigerated truck trailer, which moves produce from any growing area to any market in the continental United States. More than 90 percent of the fresh produce grown in the Pacific Northwest is shipped by truck.

Traditionally, truckers who haul only agricultural products have been exempt from most federal regulations. For this reason, the produce trucking industry is made up mostly of independent truckers who can respond quickly to seasonal changes in shipping points.

The most common way to obtain a truck for out-of-state shipment is through a truck broker. Brokers continually monitor the availability of trucks. Truckers check in with brokers to obtain a load. Usually, brokers handle the billing and retain a percentage brokerage fee.

Several truck brokers are in each growing area of the Pacific Northwest. They are in the online phone directories noted on page 13.

Not all trucking transactions involve a broker. You might want to contract with local truckers or trucking firms to move your product to regular buyers on a steady basis. Some growers have a small fleet of their own trucks. In some cases, the buyer provides trucks.

The trucking industry is very competitive, and profit margins are slim. Truckers prefer to haul full loads because partial loads generally are not profitable. It is to your advantage to mix your small loads with other shipments going to the same destination. Often, buyers

themselves arrange mixed-load shipments. Some trucking firms specialize in consolidating small loads by running regular routes along interstate highways between major cities.

Depending on the destination, the produce might be in the hands of the trucker longer than with anyone else in the distribution system. Take care to find a reliable trucker with well-maintained equipment.

Refrigerated trailers are necessary for perishable items. Trailer refrigeration usually is diesel powered and operates independently of the truck. See that the trailer is precooled, cleaned, and examined for damage before loading. In winter, a heater might be needed to prevent freezing.

Inexpensive rented temperature monitoring devices can be added to your load to document any problems during transit. If there is a quality problem when your product is opened on arrival, documentation of temperature during transit might be important.

Transportation by truck usually is more expensive than by rail or ship but less expensive than by air. For current cost information, contact a local truck broker. A weekly truck report by the Federal-State Market News Service quotes average rates between western shipping points and eastern destinations; go to <http://www.ams.usda.gov/>

Rail

Five percent or less of all produce shipments are by rail. In the Pacific Northwest, rail service is used primarily by potato and onion shippers. Destinations usually are major eastern cities. During peak harvest season in eastern Washington, growers have chartered a full train load to obtain express service to East Coast markets.

Full carloads almost always are necessary. Commodity groups move large volumes into large markets on a steady basis. Cars are equipped with mechanical refrigeration



PHOTOS: CHRIS MANICHOWSKI

units and are designed to hold 75,000 to 90,000 pounds of product. Rail piggyback service is increasing, while straight railcar service is declining.

The shipper or the buyer books directly with the originating railroad company. The railroad assigns a nearby loading facility and handles the billing.

Air

Airlines are used exclusively to ship a few high-value and extremely perishable products to domestic and export markets. Air freight accounts for no more than 1 percent of all commodities shipped from the Pacific Northwest. It is the most expensive mode of transportation.

Berries and cherries are the products most commonly shipped by air from the Pacific Northwest to domestic United States markets. Raspberries, especially, have a very short shelf life, so they almost always are shipped by air. Most berries, except for strawberries, can be sold at a price high enough to compensate for the higher transportation cost.

Produce is loaded in containers for placement in the aircraft. Precooling the product and the container helps ensure lower arrival temperatures and lengthens the product's shelf life. Using disposable insulation and dry ice inside the container also can help maintain lower transit temperatures. Be sure to check with the airline for regulations on the use of dry ice. Permanently insulated containers also are available for produce shipping.

Access to airline shipping service varies by region. Seattle-Tacoma International Airport offers several flights each week to many destinations. Several airlines have cool-storage facilities available there. Other international and regional airports offer less frequent service and have limited facilities for cool storage.

Reserve cargo space through a freight forwarder or with the airline. Freight forwarders can save you time in arranging flights and necessary ground transportation from the airport to the buyer. Containers can be

picked up directly from the airline for loading back at the farm, or they can be loaded at the airline dock.

Ship

Shipments by sea account for 1 percent or less of the fresh produce transported out of the Pacific Northwest. Most fresh produce moves in 35- or 40-foot refrigerated containers, each with its own electric refrigeration powered by the ship's engines. Some containers can use modified atmosphere to protect produce better. Dry containers often are used for long-lived commodities such as apples, although refrigeration is recommended.

Containers of fresh produce are shipped by sea to Alaska and Hawaii from Seattle and Portland. Shipping by sea costs less than by air to these destinations, but it is slower. Shipment to Alaska requires 3 to 5 days; to Hawaii, 5 to 7 days.

Alaska is the most common destination from the Pacific Northwest. Most loads going to Alaska are assembled as mixed loads in Seattle or Portland by one of a few wholesalers or retail warehouses. These wholesale firms have branches in Alaska, or they have supply contracts with firms there. If you want to sell to the Alaskan market, you probably will have to sell to one of these Washington or Oregon wholesale firms.

Ship service is less frequent to Hawaii than to Alaska. Hawaii is a more limited market for Pacific Northwest crops, as California is Hawaii's major supplier. Some opportunity exists for shipments of fruit and potatoes, but not so much for other vegetables. There also are limited opportunities to ship less perishable products—such as pumpkins and squash—to Asian markets, but only at certain times of the year. Tropical weather can affect product quality drastically.

Arrange container loading and booking directly with steamship or barge companies. Or, freight forwarders and some trucking firms can help you make arrangements.

Appendix

Calculating postharvest costs and returns

Any investment of your time and money in a new marketing venture requires a careful analysis of potential financial returns. The following cost-and-return exercise may help with that analysis.

You might want to make estimates on a “typical year” basis. Each commodity should have its own analysis; as necessary, prorate equipment, machinery, and marketing costs among commodities. Note your cash (versus noncash) costs, to identify any potential cash-flow deficiencies.

Electronic worksheet

We have created an electronic version of the following worksheet—an Excel spreadsheet online at http://extension.oregonstate.edu/catalog/pdf/pnw/pnw241-e_worksheet.xls—using a very simple example for a somewhat mythical commodity named cowberries. The electronic worksheet uses fictitious units and dollar amounts which are designed solely to illustrate the worksheet.

When you download the worksheet, save it under a name of your choice. All the cells may be changed, so feel free to add and delete as you see fit. The formulas are fairly standard, so feel free to copy those into lines that you may create; e.g., more grades of product, more investment and operating expense categories, or additional marketing-cost line items. We suggest that you rename and save the file for every “what if” example you want to explore.

Calculating revenue

1 Product type (grade)	2 Destination	3 Number of units shipped	4 Net f.o.b.* price per unit (\$)	(3 x 4 =) 5 Total revenue (\$)
Total				

*f.o.b. (free on board) is a commonly used price quote basis that excludes transportation charges beyond the shipping point. The shipping point usually is included in any reference to the f.o.b. price; e.g., “f.o.b. Portland.”

Use one line in the revenue section for each destination and grade of produce. Then multiply the number of units on each line (3) by the estimated net f.o.b. price per unit (4) to obtain total revenue (5).

To determine the average price per unit for all units shipped (6), divide the total sum of all revenues received (5) by the total number of units shipped to all destinations (3):

5	÷	3	=	6
Total revenue		Total number of units shipped		Average price per unit shipped

Packing costs

Packing-investment-related expenses

7 Item	8 Average net cost of item	9 Interest expense (8 x ___%) (\$)	10 Depreciation (\$)	(9 + 10 =) 11 Total investment expense (\$)
Land			—	
Buildings				
Machinery				
Equipment				
Office equipment				
Vehicles				
Total				

The average net cost (8) is the sum of the purchase price and salvage (ending) value of each asset divided by 2. Multiply (8) by the interest rate(s), in heading of column 9, to obtain the interest expense (9). The interest rate should include both the interest rate on any debt you use to finance the investment as well as the interest rate on your own invested capital (equity).

To be conservative, you may calculate depreciation (10) on a straight-line basis.

The total investment-related cost (11) is equal to the interest expense (9) plus the depreciation expense (10).

To calculate your investment expense for packing per unit shipped (12), divide the sum of all investment-related expenses (11) by the total number of units shipped to all destinations (3):

11	÷	3	=	12
Total investment expense (\$)		Total number of units shipped		Investment expense per unit shipped (\$)

Packing operating expenses

Item	Total
Direct production wages (including benefits and taxes)	
Dumping product into packing line	
Cleaning	
Sorting	
Sizing	
Packing	
Lidding	
Office wages (including benefits and taxes)	
Management salaries (including benefits and taxes)	
Containers (including handling)	
Labels and labeling	
Vehicles	
Interest on operating funds	
Property taxes and fees	
Insurance	
Repairs and maintenance	
Rent	
Water and power	
Plant and office supplies	
Accounting and legal services	
Telephone	
Waste disposal	
13 Total operating expenses	

To determine your operating expense for packing per unit shipped (14), divide the sum of all your operating costs (13) by the total number of units you plan to ship to all destinations (3):

13	÷	3	=	14
Total packing operating expense (\$)		Total number of units shipped		Packing operating expense per unit shipped (\$)

The last step is to calculate total per-unit packing costs (15). Add your per-unit packing investment expense (12) to your per-unit operating expense (14):

12	+	14	=	15
Investment expense per unit shipped (\$)		Operating expense per unit shipped (\$)		Total packing cost per unit shipped (\$)

If you anticipate a custom-packing charge, enter it directly into 15.

Cooling costs

Complete this section for each type of cooling system you expect to operate (forced air, hydro, vacuum, top ice, or cool room). The procedure is the same as for packing costs.

Cooling-investment-related expenses

16 Item	17 Average net cost of item (\$)	18 Interest expense @__% (\$)	19 Depreciation expense (\$)	(18 + 19 =) 20 Total investment expense (\$)
Site			—	
Structure				
Cooling equipment				
Additional equipment				
Architectural and engineering fees				
Total				

21 Total number of units cooled per year ____

To calculate your total investment expense per unit cooled (22), divide the total of all cooling investment expenses (20) by the total number of units cooled (21):

20	÷	21	=	22
Total cooling investment expense (\$)		Total number of units cooled		Investment expense per unit cooled (\$)

To calculate your total cooling investment expense per unit shipped (23), divide total cooling investment expense (20) by the total number of units shipped (3):

20	÷	3	=	23
Total cooling investment expense (\$)		Total number of units shipped		Cooling investment expense per unit shipped (\$)

Cooling operating expenses

Item	Total
Direct production wages (including benefits and taxes)	
Office wages (including benefits and taxes)	
Management salaries (including benefits and taxes)	
Power, fuel, and water	
Maintenance and repair	
Property taxes and fees	
Insurance	
Interest on operating funds	
Plant and office supplies	
Accounting and legal services	
Telephone	
Equipment rental	
24 Total operating expenses	

To obtain your operating expense per unit cooled (25), divide the sum of all your cooling operating expenses (24) by the total number of units you expect the system to cool (21):

24	÷	21	=	25
Total cooling operating expenses		Total number of units cooled		Operating expense per unit cooled

To obtain your cooling operating expense per unit shipped (26), divide total cooling operating expenses (24) by the total number of units shipped (3):

24	÷	3	=	26
Total cooling operating expenses		Total number of units shipped		Cooling operating expense per unit shipped

The last step is to calculate your total cooling costs per unit shipped (27). To do so, add the per-unit-shipped investment expense you calculated (23) to the per-unit-shipped operating expense you calculated in (26):

23	+	26	=	27
Cooling investment expense per unit shipped		Operating expense per unit shipped		Total cooling cost per unit shipped

Add together the total per-unit cooling costs (27) for all cooling systems you expect to use on the commodity. If you expect a charge for custom cooling, enter it directly into (27).

Transportation costs

This section is relevant only if you bear the cost of transportation. In many transactions, the buyer pays for shipping. If this section does apply to you, you may need to calculate transportation costs separately, by mode, for each leg of the journey to the final destination.

Mode (including containers)	28 Number of units shipped	29 Cost per unit (\$)	(28 x 29 =) 30 Total transportation cost (\$)
Truck			
Rail			
Piggyback			
Ship			
Air			
Total			

For each transportation mode, your total cost (30) is the number of units you expect to ship (28) multiplied by your net cost per unit of transportation (29). So, add your total transportation costs for all modes (30).

Add the total number of units you plan to ship for all modes of transportation (28). Finally, to calculate your average expense per unit transported (31), divide your total transportation costs (30) by the number of units transported (28):

30	÷	28	=	31
Total transportation cost		Total number of units transported		Expense per unit transported

To obtain your transportation cost per unit shipped:

30	÷	3	=	32
Total transportation cost		Total number of units shipped		Transportation cost per unit shipped

Marketing costs

Item	Total
Management salaries (including benefits and taxes)	
Office wages (including benefits and taxes)	
Facilities and equipment	
Property taxes and fees	
Advertising (newspaper, magazine, radio, TV, Internet)	
Utilities	
Telephone	
Office supplies	
Travel	
Bad debt collection	
33 Total marketing cost	

To calculate total marketing cost per unit shipped (34), divide total marketing costs (33) by total number of units shipped (3):

33	÷	3	=	34
Total marketing cost		Total number of units shipped		Marketing cost per unit shipped

Net return per unit shipped (\$)

First, calculate the sum of your expected postharvest costs per unit shipped: packing, cooling, transportation, and marketing. Note that (37) is your incoming cost per unit of product shipped (i.e., your cost of production).

15 Packing cost per unit shipped	
27 Cooling cost per unit shipped	
32 Transportation cost per unit shipped	
34 Marketing cost per unit shipped	
35 Total postharvest cost per unit shipped (sum of 15, 27, 32 and 34)	
37 Cost of goods sold per unit shipped	

6	–	35	=	36
Average price per unit shipped		Total postharvest cost per unit shipped		Gross return above postharvest costs per unit shipped

Subtract (37), the cost of goods sold, from your gross return above total postharvest marketing costs (36) to obtain your net return per unit shipped (38):

36	–	37	=	38
Gross return above postharvest marketing costs per unit shipped		Cost of goods sold		Net return per unit shipped

Total net return for all units shipped

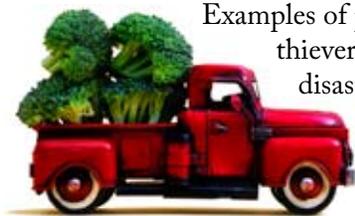
You may also wish to calculate the net return for *all* units shipped:

3	x	38	=	39
Total number of units shipped		Net return per unit shipped (\$)		Total net return for all units shipped (\$)

To calculate your *true* net returns (before risk assessment), you must consider income taxes. The applicable tax rate is the sum of all the federal, state, and local income tax rates expected to apply to your net returns (39). Net return is the amount remaining after you subtract your tax-deductible expenses from gross revenue.

Be cautious about using the step (39) value—on an after-tax basis—to measure “profitability.” Instead, your calculated net return is highly dependent on your ability to forecast future prices and events.

When assessing whether an after-tax net return is acceptable, it is important to analyze your risk of loss, either physical or monetary. When you're moving to a more risky marketing situation, you need a higher net return to compensate for the additional risk.



Examples of physical risk include thievery, vandalism, natural disaster, or transportation delays.

Monetary risk refers to a buyer's failure to accept a shipment or pay for it, or a market price drop during shipment.

It is useful when doing this type of analysis to complete several runs through the procedure, using different possible forecasts. For example, you might include an optimistic, pessimistic, and average outlook on prices, costs, and risks.



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