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REPORT OF THE Linn County Agricultural Economic Conference



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Albany, Oregon, January 28 and 29, 1936

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FOREWORD

Through the cooperation of the Albany Democrat-Herald, Albany, Oregon, reports of the Linn County Agricultural Economic Conference are being made available to every farmer in the county. These reports are published as the result of a resolution unanimously passed by the general assembly of the Linn county conference on the concluding day of its two-day session held in the Armory at Albany, January 28 and 29, 1936. The Albany paper is providing the farmers with these reports at its own expense.

The conference was planned by a general committee of farm leaders representing various organizations, communities, and commodity interests in the county. The Extension Service of the Oregon State Agricultural College, through its local representative, Floyd C. Mullen, county agent, assisted in organizing the event, assembling, data, and interpreting the data used by the various committees.

Nine committees, each consisting of 10 to 15 practical producers, gave painstaking effort and careful consideration to the reports presented to the general conference for adoption. On the first day of the session all interested growers in the county were invited to participate in the committee discussions and final drafting of committee reports. The various committee reports, therefore, constitute a compilation of the best opinion in the county supported by local experience and statistical data. Taken together, the reports constitute a program for Linn county agricultural adjustment development through democratic discussion procedure in which all interested persons had an opportunity to participate.

While recommendations contained in this bulletin are based upon the best available data and the judgment of successful and practical producers, these should not be considered final. Conditions are constantly changing and in accordance with these changes the recommendations herein contained will need revision and adjustment as time goes on.

This conference was one of a series of similar events held in most of the important agricultural counties in the state early in 1936.

The general committee that planned and organized the conference was composed of John Shepherd, chairman, C. P. Kizer, L. E. Arnold, F. D. Jenks, E. G. Pugh, C. R. Evans, Merle Buchner, Rudolph Borovicka, C. H. Davidson, Gilbert Groshong, A. A. Ayres, R. C. Burkhart, C. H. Mitchell, and A. J. Wilson.

The conference developed a program to guide Linn county agriculture. Its ultimate value stands upon knowledge and use of its findings by individual producers and by the various organizations and agencies in the county.

REPORT OF HORTICULTURAL COMMITTEE

The prune acreage in Linn county according to the United States census was 1,093 acres in 1920, and estimated at 2,250 acres in 1935. Prunes and plums for the state of Oregon are given as 43,311 acres in 1919 and 54,825 in 1933.

A recent survey made of 147 farms in Linn county upon which prunes are grown shows the age of trees in respect to number of trees planted:

Age of Trees	Number
1-4 years	1,917
5-8 years	30,412
9-15 years	53,038
16-25 years	37,128
26-over	22,746

Production Reaches Peak

Production of dried prunes in the three Pacific coast states has reached a total of 280,090 tons in 1935. During the same period production of the tart sweet Italian prune which is confined to the northwest reached a total of approximately 37,090 tons, and in addition approximately 1,200,000 cases of Italian prunes were canned.

Although the peak of production apparently has been passed in the northwest, there is little indication of material improvement in the prices of dried prunes under existing conditions. Prune production in the United States has increased from 58,614 tons in 1899 to 202,200 in 1934. In the same time world production has increased from 113,614 tons to 238,690. The northwest increase is from 1,500 tons to 32,200 tons.

The pack of western canned prunes has increased from 459,591 cases to more than 1,200,000 cases in 1935. This continued annual increase of the canned prune pack may be one solution to the marketing of Italian prunes but growers and packers must take more interest in the quality of prunes going into the canned pack.

Hazards in Marginal Orchards

It is believed that under probable future market conditions, cultivation and care of prune orchards which are not capable of producing an average yield of approximately 2,000 pounds of dried prunes per acre of sizes larger than 50 to the pound is decidedly questionable.

New plantings are discouraged for obvious reasons. Growers who wish to plant under present conditions must realize that the most severe competition to be faced is in marketing prunes on an over-supplied market.

Linn county growers are advised to give every attention to cultural and pruning methods so size and quality of prunes for both drying and canning will be improved. The public cannot be expected to repeat orders for poor quality prunes, no matter how low the price may be.

In many instances growers find it desirable to remove part of the trees in orchards where trees are spaced less than 24 feet apart.

Would Improve Grades

Oregon dried prunes smaller than 70 to the pound should be declared sub-standard prunes.

At present dried prunes from Oregon growers are placed in 11 or more classifications, depending upon size alone and valued accordingly without reference to quality but with a wide range in prices. While dried prunes may be classified for size satisfactory standards of quality also should be set up and measures taken to insure proper identification of quality by the ultimate consumer. It is recommended that prunes be sold on a one point break as under the code of 1934.

Growers, packers, and canners should take concerted action before the Interstate Commerce Commission in an endeavor to obtain revision of railroad tariffs to permit shipment of mixed cars of canned and dried fruits, also frozen and barreled, at their respective carload rates, thereby opening markets of the midwest and south to Oregon products.

Merchandising Methods Scanned

The present plight of the prune industry in Oregon in a large measure can be charged to failure on the part of existing sales agencies to maintain merchandising methods on a par with those of competing commodities, and in part to the abuse which have become entrenched in the industry due to lack of organization among growers.

Price-cutting, open-end contract, the consignment and warehousing evils, unfair dockage and kindred abuses should be curbed through affiliation of a substantial majority of the independent growers into a state-wide collective bargaining association operating with an optional pooling arrangement under Oregon cooperative laws. Sincere consideration should be given to the plan of the Oregon Prune Control Board for stabilizing the marketing of Italian prunes.

CHERRIES

Cherries constitute 6 to 10 per cent of the state income of fruit production. Oregon produces approximately 10,000 tons annually, 40 per cent of the production being Royal Anns.

Linn county ranks ninth in cherry production among all counties of Oregon, having approximately 400 acres in 1935 as compared to 234 acres in 1919.

A survey recently made of 86 farms

on which sweet cherries are being produced shows as follows:

Age of trees	No. of Trees
1 to 4 years	4,536
5 to 8 years	4,472
9 to 15 years	3,143
16 to 25 years	879
26 years-over	517

Oregon plantings of sour cherries is insignificant. Trees of all ages of this kind in Oregon in 1930 are estimated at 65,455 which is only .68 per cent of the United States total.

Oregon has decreased 22 per cent in sour trees of all ages from 1920 to 1930.

It is estimated that in 1930 Oregon had approximately 5,000 acres of bearing cherry trees, and 2,500 trees were coming into bearing. For the same period California had approximately 13,260 acres of bearing trees and 6,647 acres coming into bearing, while Washington had 5,000 acres of bearing trees and approximately 2,000 acres coming into bearing.

The cherries brined in the west in 1934 amounted to a little more than 50 per cent of production records for 1933 according.

The United States produced 101,000 barrels in 1934, 96 per cent of these being produced in the western part of the United States. The Northwest produced 56,000 barrels (61,986 tons) and California produced 40,000 barrels (5000 tons).

The west packs 78.2 per cent of all canned fruit. In 1934 the pack being 996,449 cases which was 39 per cent of the total amount canned in the United States.

Cherry Recommendations for Linn County

Increased planting of cherries either sweet or sour are not recommended at present.

Improvement of quality for all varieties through better production and harvesting methods is urged. The excessive percentage of off-grade cherries delivered to processing plants is a serious handicap to the industry.

No cherries should be permitted to be shipped out of the state from infested areas unless adequately sprayed for the cherry maggot and state inspected before shipping. In cases where maggot infested cherries are transported to processing and packing plants in orchard or field lugs, state laws prohibiting transportation of insect infested fruit, should be rigidly enforced.

The Syneta beetle causes much damage to unprotected cherry orchards and renders fruit unsalable or lowers the grade to the point where it must compete with all other low grade cherries in the country. Growers have demonstrated that 30-70 lead arsenate lime dust will effectively control this destructive insect.

Maintenance of the present cherry tariffs are essential to the welfare of the cherry industry.

Returns in recent years have been low, and abandonment of acreage may be expected to increase if prices to the grower do not improve materially. Growers with low production costs and high yields may be expected to remain in the cherry producing business.

PEACH ACREAGE LOW

Linn county produces approximately 64 acres of peaches. Of this amount 42 acres are in bearing, all of the peaches produced in the county being consumed locally. Each year peaches are imported into Linn county, either from points within the state or from without the state.

Varieties most adaptable for local commercial production are Elberta, Early Crawford, J. H. Hale, and Muir. Rochester, Triumph, and Early Alexander are good varieties for the fresh fruit market.

A small expansion of peaches on deep hill soils or well-drained river bottom land is justified. Plantings should be increased only to take care of present demand.

As peaches are subject to numerous insects and diseases such as die-back, twig blight, leaf curl, twig miner, and root borer a grower contemplating the planting of peaches should become well acquainted with each pest and be in a position to apply sprays at the proper time for control of these pests.

APPLE AND PEAR ACREAGES SUFFICIENT

No increased acreage of this fruit is needed at this time. Although Linn county soils are well adapted to pear production no increased plantings are justified until additional markets expand.

ENGLISH WALNUT PRODUCTION

Early estimates placed the 1935 United States walnut production at 52,600 tons, while the commercial European crops is estimated at 75,000 tons.

The trend of the Oregon and California walnut production is:

5-year period	Average
1916-1920	21,100 tons
1921-1925	27,000 tons
1926-1930	33,000 tons
1931-1935	41,600 tons
1935-1939	45,000 tons

The acreage of English walnuts is practically confined to the Pacific coast, the Oregon and California acreage being as follows:

Bearin	Non-Bearing		Total
	Calif.	Ore.	Acres
California, 1922	67,869	19,141	87,010
Oregon, 1922	4,000	4,000	8,000
California, 1934	117,500	21,500	139,000
Oregon, 1934	15,000	12,000	27,000

In 1922 the world production of commercial walnuts was placed at 140,000 tons and the United States production at 25,000 tons annually. Wal-

nuts are produced in the Mediterranean countries, Asia Minor, China, Chile, and the United States.

Imports:

Imports of all nuts fell from 174,780,000 pounds in 1926-27 to 52,148,000 pounds in 1933-34.

Shelled walnut imports dropped from 20,979,000 pounds in 1926-27 to 5,547,000 in 1933-34. Imports of walnuts not shelled were 25,706,000 pounds in 1926-27, and 321,000 pounds in 1933-34. The reduction in imports are credited largely to the tariff on nuts imported into the United States.

Controlled Marketing Needed

With increased walnut production and competition in the markets from other nuts some form of controlled marketing appears to be a necessity for the protection of the industry and of the individual grower. Walnut growers should give consideration to such plans as may be advanced for marketing and ultimately assist in bringing about an orderly system of marketing which will eliminate dumping of walnuts on the market at harvest time at ruinous prices to the grower. To further this end all growers are urged to become identified with some permanent marketing organization and that some plan be devised to advertise Oregon walnuts and filberts as Oregon products.

Standardized walnut grades should be established in Oregon to apply to all walnuts offered for retail sale. This is necessary to prevent inferior walnuts being sold to consumer, damaging to the Oregon produced walnut through sale of a poor quality product. Compulsory grading of all walnuts offered for sale should be practiced.

Protection of the northwest nut industry against importation of nuts produced in Europe and the Orient under a low standard of living and labor conditions is held imperative. No action should be taken by the national government which will lower the protection to the northwest offered by tariffs now in force.

Tariffs on imports into the United States:

	Unshelled	Shelled
Tariff Act 1913	2c lb.	4c lb.
Act, Sept. 22 1922	4c lb.	12c lb.
Act, June 18 1930	5c lb.	15c lb.

Walnut growers have very heavy competition in marketing not only from within the industry itself but from pecans, cashew, filberts, and other nuts. Growers are faced, with necessity of securing high per acre yields of a good quality nut in order to meet this competition. Owners of low producing walnut orchards having high production costs may well consider abandonment of such orchards.

New Plantings

New plantings if made, should be with a full understanding that the strongest kind of competition will have to be met from walnuts produced at

home, abroad, and from other nuts both domestic and imported.

Watch Out For Small Tracts

The size of new walnut plantings should receive serious consideration from those who plan to depend upon walnut production for their entire income. With low prices prevailing the small walnut tract is not an attractive venture as a sole source of income.

Domestic Consumption of Walnuts

The California Walnut Board's report shows the total supply and consumption of walnuts for the 1934 period as follows:

1934 crops	
California supplied	684,540 bags
Oregon supplied	35,390 bags
Carry over	53,295 bags
Total	773,225 bags
Domestic consumption	541,000
Surplus	232,225

Use Care In Harvesting and Drying Walnuts

Growers should employ harvesting methods which will place the walnuts in the packing house in the best possible condition. Nuts should not be shaken from trees until the husk has loosened and should be picked up and dried immediately. To delay picking and drying results in poor quality kernels.

Franquette is the leading commercial variety, others proving unsuitable or are in the experimental stage.

FILBERT ACREAGE IN OREGON

The filbert acreage in the United States is practically limited to the Willamette valley in Oregon with adjacent territory in the state of Washington.

The United States census figures and estimates by the Oregon State Agricultural college extension service places the filbert acreage in Oregon-Washington as follows:

1929	4,802 acres
1930	5,072 acres
1931	5,851 acres
1932	6,915 acres
1933	8,753 acres
1935	9,950 acres

Oregon-Washington Filbert Acreage

In February, 1935, the North Pacific Nut Growers Cooperative placed the Oregon and Washington acreage of filberts at 9,950 acres, segregating it as follows:

	Oregon	Washington
Bearing Acreage	4,000	400
Non-bearing Acreage	4,500	1,050
	8,500	1,450

In 1932 a light crop, gave the cost of producing filberts from 436 acres of 36 orchards, producing 172,541 pounds

of filberts was \$54.25 per acre or 13 cents per pound. The average number of trees was 104 per acre, averaging 9 years of age.

Growers who make plantings of filberts at this time should do so only with a full understanding of the cost involved, the effect on prices for filberts if tariffs are reduced, and that there are acreages yet to come into bearing. Filberts will continue to be grown, and new acreages planted. Marketing of the crop might easily become more of a serious problem.

Small acreages of filberts as a sole source of income should generally be discouraged.

Leading Varieties Listed

The Barcelona continues to be the leading commercial variety. The DuChillig is used as a pollinizer with Davianna, Creswell, and Montefello also used in the same capacity.

The Brixnut and Halls Giant are receiving favor as new varieties in recent years.

Worms in filberts (nuts) are reported more numerous in recent years. Investigations should be conducted to determine methods of control for this pest.

Pick and Dry Immediately

Filberts should be picked up immediately after falling from the trees and dried immediately, if the best quality nuts are to be obtained.

Growers should become identified with some permanent marketing organization so the filberts will not be "dumped" on the market indiscriminately at harvest time.

SOILS FOR TREE FRUITS AND NUTS

The soil for tree fruits and nuts should be eight to 10 feet deep and

well drained. These trees will grow and sometimes yield profitably, in soils of less depth, but on shallow soils, especially those underlaid with rock hard pan, and high water tables, the grower will be faced with production difficulties early in the life of the orchard. These troubles are pronounced during dry seasons.

There are instances almost without number of orchard development projects by companies and individuals in the northwest which have been entire losses to the owner because the soils were totally unsuited for orchard plantings.

Orchard soils need annual additions to the humus supply to assist the maintenance of soil fertility and as an important aid to preventing soil erosion. A cover crop is not a luxury but a necessity in keeping up the per acre production for growing quality products.

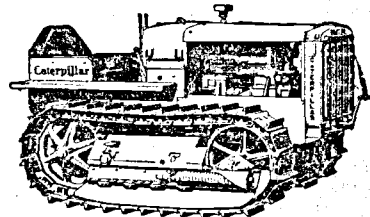
Additions to cover crops for strengthening the soil maintenance and erosion prevention programs are:

Stable manure, 10 or 12 tons spread over the orchard annually.

Nitrogen fertilizers applied in late winter often greatly increase the cover crop yield.

Winter barley and vetch lead as an orchard cover crop, 30 to 60 pounds of vetch and 60 to 100 pounds of barley being a good seeding ratio. Seed early in the fall and plow or disc down early in the spring. Other cover crops are vetch alone, 60 to 80 pounds per acre; winter grain alone 100 to 150 pounds per acre; turnips three pounds per acre; rye for thin soils, 75 to 150 pounds per acre; winter barley 60 to 80 pounds per acre; mixed grains and vetches may be used but avoid noxious weeds.

IT BEATS TIME



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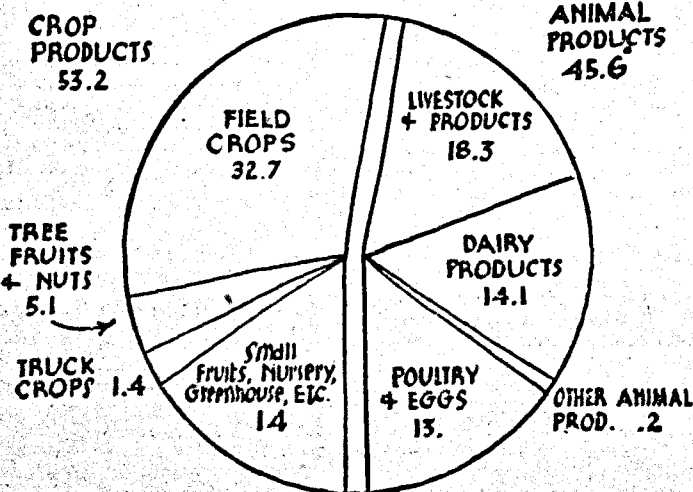
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LINN COUNTY AVERAGE CASH FARM INCOME 1926....1930



Average Cash Farm Income . . . \$5,804,000

REPORT OF SOIL COMMITTEE

The soil is Linn county's most valuable resource and no branch of agriculture can last any longer than the soil. Any permanent agricultural program, whether considered from the individual or county wide standpoint, must include those practices that will maintain the productivity of the soil. Conservation of the soil is more than an individual problem. If farming practices are followed on any particular farm that depletes the soil on that farm to a point where it can never be rebuilt, it means not only ruin to the individual farmer involved, but also inflicts on the remaining farms in the county tax burdens once carried by the destroyed farm. Further burdens are inflicted from the necessity of providing a means of livelihood, directly or indirectly, for the farmer and his family.

The tendency toward smaller farms emphasizes the need for better soil management. The average size of farms has been reduced more than 50 percent during the last 50 years, indicating that if proper standards of living are to be maintained then larger returns per acre must be secured.

The soils problem may be considered under the four headings of soil fertility, erosion, drainage, and irrigation.

SOIL FERTILITY AND MANAGEMENT IMPORTANT

The type of farming to follow should be determined by the soil type available. General use should be made of the Linn county soil survey in determining what crops may be grown on a soil. This is especially important when considering long time crops such as orchards.

New owners are urged to study this soil survey carefully before purchasing a farm, selecting a soil type adapted to the type of farming they wish to follow.

So farming may be continued on a permanent basis it is absolutely necessary that every precaution be taken to conserve the fertility in the soil. From the general farming standpoint the best way to accomplish this conservation is to follow the practices of keeping up the organic matter supply in the soil. This organic matter supply is of importance since it is necessary to make plant food available to our crops, prevents loss of plant food, and assists in preventing the actual loss of soil. On the average farm the organic matter supply may be maintained by following a system of crop rotation including the growing of some legume crop.

The legume crop not only builds up a supply of organic matter, but also adds a valuable supply of nitrogen to the soil. The variety of legumes to grow must be determined largely by the soil type. On many soils in Linn county it may be necessary to apply

lime in order to grow legumes. Whether lime is necessary may be determined by a simple soil test. This testing service is available free of charge in the office of the county agent. Farmers contemplating sowing legumes are urged to have their soil tested for lime requirements before spending money for seed and seed bed preparation.

The proper conservation of soil fertility requires that all crop residue be returned to the soil. When straw stacks, combine rows, and stubble are burned large quantities of plant food are destroyed that might otherwise be returned to the soil. Not only is plant food wasted but also a valuable source of organic matter is lost. In this connection further study is needed on methods of spreading straw and adaptable tillage implements that will permit plowing straw under without too much additional labor. Further investigation also is needed on the possibility of adding nitrogenous fertilizer to straw in order to hasten its decomposition and make better use of the organic matter in the straw.

Conserve Fertilizer Strength

Present knowledge indicates that the addition of 20 pounds of nitrogen (100 pounds of 20 per cent nitrogen fertilizer) will greatly increase the value of straw added to the soil. On farms with livestock, a loafing shed is recommended as a means of making the best possible use of this straw. An adequate supply of straw is placed in this shed at harvest time and during the winter months the livestock are permitted to spend most of their time in this shed, valuable fertilizer, being the result. The manure is not subjugated to leaching by winter rains and the continual tramping by the livestock prevents loss from heating.

To prevent the loss of valuable plant food all barnyard manure should be conserved in a manner to best prevent the waste of plant foods.

To prevent loss from barnyard manure by fermentation the use of super-phosphate instead of lime is recommended for use around the dairy barn. Because of this fact the state department of agriculture is urged to approve the use of super-phosphate in dairy barns.

On dairy farms the liquid tank method of handling manure might be more widely adopted. This method of handling manure prevents any possible waste of plant food and also permits the handling of manure with a minimum of labor. When used in combination with a loafing shed the result would be the saving of all possible manure produced on the farm.

Best use may be made of manure by applying it to the soil at a time when growing crops will utilize the avail-

able plant food. This means that ordinarily the proper time is early in the spring previous to seeding crops. On most farms greater benefit could be secured from manure by spreading it on the land in comparatively small amounts, if possible not over eight to 10 tons per acre. More increased yield per ton of manure will be secured in this manner than where heavier applications are used.

Where there is any amount of livestock on a farm the use of a permanent pasture in a regular rotation is recommended as being an economical method of re-building the organic matter supply in the soil. The rotation should be worked out so that every field in the farm would be in a permanent pasture once every 10 or 15 years.

Cover crops are recommended for all orchards, cane fruits, and other permanently cultivated crops and for land continuously devoted to annual cultivated crops such as vegetables. The variety of cover crops will depend largely on the soil type. The cover crop should be on the ground early enough in the fall so that adequate cover remains on the soil during the winter months to prevent washing, erosion and loss of plant food through leaching. For non-irrigated crops the cover crop must be plowed under early enough in the spring so that it will rot in the soil without hampering the summer moisture supply. For land under irrigation better use of cover crops could be secured if the land was given one irrigation in the early fall in order to assure a good early growth.

On some general farms where the land has been permitted to run down it may be necessary and desirable to plant a green manure crop in the fall and plow it under late the following spring in order to incorporate a good supply of organic matter. This should be used only where necessary to build up the soil to a point where a good crop rotation may be followed.

So productivity of the soil may be maintained the future may see general use of commercial fertilizers. At the present time results from the use of commercial fertilizers have not been consistent enough to warrant a general recommendation as to what fertilizer to use.

Under irrigation; applications of commercial fertilizer have proven very profitable. Individual needs may best be determined by trials of different fertilizers on the farm. Purchasers of commercial fertilizers are urged to purchase the product only on the basis of the plant food contained.

DRAINAGE IMPORTANT PROBLEM

The full utilization of the soil resources of Linn county requires great amount of drainage work. According to the soil survey report there are approximately 220,000 acres of land needing drainage.

Tile drainage is the most satisfactory drainage, wherever possible to use

the tile. Tile drainage systems should be installed carefully in order to secure best possible use of the tile. The depth to place the tile and the distance between the laterals should be determined by some experienced person after a careful consideration of the soil type. The proper sizes of tile also should be carefully worked out to permit the efficient operation of the drainage system. Before any tile is installed a tentative drainage system should be designed for the entire farm even though it is possible to install only a small portion of this system at any one time. With this plan for the entire farm in mind the tile as installed may be located as units of a complete system making it unnecessary to dig up and re-lay any lines of tile.

EROSION IS DISCOUNTED

Soil erosion is a much more serious problem in Linn county than many people realize. Losses from erosion in this are so gradual that they are not generally noticed. Nevertheless, there are farms in Linn county where the loss of soil from erosion is so serious that these farms can no longer be farmed profitably. This presents a very serious problem since soil lost by erosion never can be replaced.

Under average conditions good farming practices which maintain a good supply of organic matter in the soil and provide a good cover for the soil during the winter months will largely prevent erosion losses.

On hill lands farming practices should be followed that will leave some protective cover on the soil during the winter months. In hill side orchards it is necessary that a cover crop be grown every year. In general, it is necessary that a system be followed that will not necessitate the plowing of land in the fall, leaving the land unprotected for several months prior to spring planting.

From the standpoint of long time returns and the prevention of erosion losses it would be better if much of the steep hill soil could be seeded to permanent pasture rather than farmed continuously.

Where tile drainage is not possible, either for lack of necessary finances, no available outlet, or soil type that will not permit the use of tile, greater use of open ditches to remove the surface water is recommended.

In many sections of the county, community organization may be necessary to secure the construction of adequate drainage outlets. These organizations must be completed before any drainage work is started in a particular area because a permanent organization is necessary to assure the maintenance of the drainage outlet.

REPORT OF THE LIVESTOCK COMMITTEE

U. S. LIVESTOCK NUMBERS DECREASE

The number of livestock in the United States at the present time in terms of total live weight is probably the smallest it has been in more than 30 years. From 1928 to the beginning of 1934 the trend in number of meat animals was upward. During that period the increase amounted to twelve per cent. Most of this increase was eliminated in 1934, largely as a result of the severe drought. The number of cattle on farms increased steadily from 1928 to early 1934 by about 20 per cent.

The number of hogs on farms at the beginning of 1935 was the smallest in 50 years. The decrease was due to drought and production control programs. The number of pigs produced in 1934 was 35 per cent smaller than in 1933.

Sheep Increase Slightly

Sheep numbers increased steadily from 1923 to 1932. The increase amounted to 17,000 head or 45 per cent. From 1932 to 1934 the number of sheep in the United States declined slightly, but the number on January 1, 1935 was about five per cent smaller than a year earlier, the smallest since 1929.

During the next three or four years the United States Department of Agriculture predicts that there will be a considerable increase in livestock numbers, particularly true in the case of hogs.

GENERAL RECOMMENDATIONS

Linn Livestock Income Large

The cash farm income from livestock and products in Linn county from 1926 to 1930 averaged \$1,017,297.00, or 18.3 per cent of the total average cash farm income for all products.

Because of Linn county's topography and wide range of soil types adapted to the production of livestock, the livestock industry should continue to be one of the most important enterprises in the county. Livestock has been and should be the "backbone" of Linn county's agriculture.

As the growing of livestock is one of the best ways to maintain soil fertility, the committee encourages the farmers of Linn county to keep enough livestock to utilize the feed crops produced on the farm.

Pasture Improvement Needed

The native grass pastures of Linn county have been overgrazed and overstocked until they have reached a very low carrying capacity.

The committee recommends that logged-off lands and burns be seeded to good pasture mixtures. For farmers wishing to reseed native grass pastures, but find the cost of seed prohibitive, it is recommended that seeding of a

small acreage of the desired grass be harvested for seed purposes.

It is not a good practice to depend too heavily upon winter pasture for cattle and sheep. The committee encourages a proper balance between pasture and feed crops.

Cooperative Marketing Encouraged

The formation of a cooperative community livestock marketing association is encouraged by the livestock committee.

Purebred Sires Recommended

Purebred sires of good type are recommended to improve the quality of Linn county's livestock.

Purebred Animals For 4-H Clubs

Four-H Club members should be encouraged to secure purebred stock of good type for their livestock projects.

SHEEP

The Situation:

The number of sheep in the United States increased 45 per cent between 1923 and 1932 as a result of favorable prices during most of that period, but has since declined somewhat. The recent decrease has been largely in the Western states, because of drought conditions. The present number of sheep in the United States is around 49,000,000 head and in Oregon 2,497,000. The Oregon figure is 2 per cent higher in 1935 than was true in the same period of 1934.

According to the U. S. Census, the number of sheep in Linn county increased from 46,084 head in 1920 to 90,233 head in 1930. Since 1930, the number has steadily decreased. The census of 1935 shows 69,786 sheep in Linn county.

The Outlook:

The trend of sheep numbers in the Western states is expected to be upward for several years if feed conditions remain favorable. This upward tendency may be checked, however, by the grazing policies that may be inaugurated under the Taylor act and by grazing policies of the National Forests. Little change is expected in the native or farm-flock sheep states the next few years.

Recommendations

1. Number of Flocks Can Increase:

The farms of Linn county are highly adapted to the raising of sheep. The committee recommends, that rather than increase the size of farm flocks, the number of flocks can be increased. Farms where feed conditions are satisfactory should have a small flock of sheep. The number of sheep should always stay within the feed supply.

2. Market Quality Stressed:

We encourage the marketing of lambs on an early market. Lambs weighing

from 75 to 90 pounds are most profitable.

Fifty per cent of the lambs in Linn county sell for an average of \$2.00 under top prices because of inferior quality. This poor quality is a result of poor feed. Winter feeding of hay and grain to ewes is a good practice.

A pasture of good quality should be provided for ewes and lambs. The early period of a lamb's life will often determine the profit or loss.

3. Sheep-Killing Dogs Incur Losses:

According to a report issued by the Linn county clerk, claims were paid on 585 head of sheep and goats killed by dogs in 1935. Claims filed totaled \$3026.90 while claims allowed totaled \$2469.10.

The loss incurred by sheep killing dogs should be given consideration. The committee recommends that the general conference chairman appoint a committee of five stockmen to contact the Linn County court and urge a more strict enforcement of the dog law.

4. Parasites and Diseases need Attention

The major loss of sheep, mutton and wool is caused by animal parasites such as liver fluke, sheep ticks, maggots and roundworms. Lambs and young animals are most susceptible to parasites and suffer most from them.

Pasture rotation, draining, or filling swamps, feeding from feed racks, avoidance of over-stocking and the use of forage crops are measures of value in parasite control.

Prevention rather than cure should be the sheepman's watchword.

Proper docking, castrating and treatment for naval infection will reduce losses.

HOGS

The Situation:

The number of hogs on farms in the United States at the beginning of the year 1935 was the lowest of any year since 1910. The average pig crop of the U. S. averaged around 80,000,000 during the twelve-year period prior to 1934. The 1935 crop is expected to total around 50,000,000 head.

The number of hogs in Oregon decreased from 221,000 head in 1933 to 152,000 at the beginning of 1935. Oregon imports many thousand head annually for domestic consumption.

The number of hogs on Linn county farms has shown a steady decrease from 21,176 head in 1920 to 11,871 head in 1930 or a decrease of 43.9 per cent. From 1934 to 1935, the decrease was 2,129 head. Part of this decrease can be attributed to the AAA but the larger percentage of the reduction was voluntary. An inspection of corn-hog contracts reveals that Linn county contract signers could have produced 39 per cent more hogs under the adjustment contract in 1935.

The Outlook:

Increased production of hogs can be expected during 1936-37. What the trend of production will be after 1937

depends largely upon future control programs.

Recommendations

1. Numbers can be Increased:

The livestock committee recommends that every Linn county farm should keep at least one hog to consume waste. However, the committee does not recommend an excessive increase due to cheaper production in the mid-west.

2. Meet Market Demands:

The committee encourages the marketing of hogs of the proper weight and finish. Market demands a hog weighing 175 to 220 lbs.

The use of purebred sires of good type is recommended.

3. Feed Requirements Given:

From 350 to 400 pounds of grain are required to produce 100 pounds of pork. When pasture and farm wastes are used as supplements, this figure can be materially reduced.

The committee recommends that Linn county farmers raise only enough hogs to utilize farm waste and home grown feeds.

4. Sanitation Controls Diseases:

The committee recommends hog lot sanitation as a means of controlling parasites and disease. Chief parasites to combat include hog lice, mange and stomach worms. Hog colera is the chief disease to guard against.

HORSES

The Situation

The number of horses and mules in the United States has decreased gradually since 1920. At the present time the numbers are less than at any time since 1890. The number of horses and mules on farms in Oregon January 1, 1930, was 174,000. On January 1, 1935 it was estimated that number was 155,000 head. The average age of horses now on farms is estimated to be 15 to 18 years.

The number of horses in Linn county has decreased steadily from 1920 to 1935. In 1920 there were 11,640 horses and mules on 3074 Linn county farms. In 1935 there were 6,950 on 3,849 Linn county farms, giving a present average of 1.8 horses per farm.

Outlook:

According to the U. S. Department of Agriculture the downward trend of horse and mule numbers in the United States is drawing to an end and colt raising is showing a marked expansion. It is believed that any substantial increase in the use of work stock on farms above the present use can come only from a shift from mechanical power to animal power.

At the present time in Linn county there are not enough colts of draft type being raised to take care of the normal death rate.

Recommendations

1. Increase Recommended:

Because of the shortage of good draft type horses in Linn county, the commit-

tee recommends the raising of draft type colts, but discourage the practice of cross breeding.

2. Horses vs. Power Machinery:

The committee believes that the draft horse has a place on almost every farm in Linn county. A heavy investment in power machinery on the small farms in Linn county, is to be discouraged.

3. Iodine for Brood Mares:

The committee recommends the feeding of 15 grains of potassium iodide per week to brood mares during the last half of the gestation period as a preventative measure against goiter in the foals.

Potassium iodide can be obtained from practically all drug stores. Mix three ounces of potassium iodide with one gallon of water. Feed each mare two tablespoonfuls once a week on the oats. Feed the potassium iodide during the last five or six months of pregnancy.

5. Purebred Stallions Should be Used:

The use of purebred stallions of good draft type is recommended.

BEEF CATTLE

The Situation

The total number of cattle in the U. S. decreased during the drought period 8,000,000 head or 14 per cent. The reduction in number of cattle in Oregon during the drought period was 12,000 head, including all purchases.

The number of beef cattle in Linn county has decreased from 8,403 in 1920 to an estimated 3,750 in 1934.

Outlook:

The number of cattle in the U. S. at the present time seems to be about sufficient to furnish fairly ample supplies of beef and veal. However, it is expected there will be an increase in cattle numbers in states west of the Mississippi river. The rate of increase will depend on feed conditions and cattle prices.

Recommendations

1. Some Opportunity for Feeders

Practically all of Linn county's beef cattle are grass fattened. However, it is believed that there is an opportunity for the specialized feeder in "feeding out" beef cattle to utilize home grown feeds. Over a ten-year period the average spread between feeders and fat cattle has been two cents per pound.

Feeding trials conducted at Oregon State college indicate that barley, wheat or mill run fed with hay produces good gains.

The committee recommends that only beef cattle of good type be placed in the feed lot.

2. Improvement Should be Considered:

The use of purebred sires of good beef type is recommended and the practice of cross-breeding is to be discouraged. Dairy steers for beef purposes are not desirable.

GOATS

Angora goat numbers have reduced during 1935 in the United States. This

is a result of heavy death losses and government purchases of 355,000 head in the fall of 1934. Some increase in goat numbers is to be expected during 1936 because of feed conditions and favorable prices for mohair.

The number of goats in Linn county has decreased steadily from 10,962 in 1930 to an estimated 9,000 in 1935.

The raising of Angora goats in brushy sections where sheep can not be grazed profitably is recommended. The number of goats in Linn county seems to be sufficient to take care of suitable grazing lands.

ANNUAL RAINFALL FOR LINN COUNTY

Taken from the records of F. M. French, U. S. weather observer.

Month	17-yr. ave.	1935 Ave.
January	5.63	4.41
February	4.93	3.79
March	3.93	5.28
April	2.67	1.82
May	1.68	.34
June	1.13	.34
July	.43	.44
August	.51	.12
September	1.68	1.48
October	2.82	2.68
November	6.46	2.31
December	6.61	

Total 38.48 in. 23.01 in.

Average monthly rainfall 3.21

Average monthly rainfall for 1935, 1.92

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REPORT OF SMALL FRUITS COMMITTEE

Linn Well Adapted for Small Fruits

Linn county is well adapted to the growing of small fruits. Berries such as strawberries, raspberries, youngberries, gooseberries, and black cap raspberries, will grow well on most river-bottom soils and on certain hill soils.

Markets for all small fruits are the limiting factors in production. At the present time it is estimated that more than 95 per cent of the small fruits grown in Linn county are sold either to canners or barrelers, located either in the county or a short hauling distance from the county.

Acreage of small fruit produced in Linn county:

	1924	1929	1935
Strawberries	411	1776	1007
Raspberries (red)	82	135	288
Raspberries (black)		70	61
Loganberries	74	93	45
Gooseberries		8	7
Youngberries			27

Strawberry Acreage Declines

The strawberry acreage of Linn county has rapidly decreased the past five years. The decrease is due principally to unsatisfactory markets. If markets were available growers would welcome the opportunity of expanding the acreage, as many soils in the Scio, Sweet Home, and Lcomb hill sections and all river-bottom lands are well adapted to strawberry growing.

Oregon's chief outlet for strawberries is the cold pack market in 50 gallon barrels. This pack was 52,332 barrels in 1926, 75,554 barrels in 1928, 65,559 barrels in 1932, and 46,487 barrels in 1934. Cold pack strawberries also are placed in 30, 10, and five gallon barrels, in 30, 15, and 10 pound cans, in No. 10 cans, and down to one pound cartons. Pacific coast states canned approximately 76 per cent of the United States pack in 1933 and barreled approximately 66 per cent of the total 1934 crop of the nation.

Of the varieties grown, the Marshall for barreling purposes constitutes approximately 95 per cent of the strawberry acreage in Linn county. Until better varieties are developed the Marshall is the only variety growers should consider for commercial barreling purposes. For canning berries, the Ettersburg is a favorite. Recently the Corvallis 112 and Redheart have found a place among some canners and may be planted if contracts can be obtained. For the fresh fruit market Narcissa and Rockhill are favorites, Rockhill being an everbearer.

Production Problems Listed

The greatest production problems in growing strawberries are spittle bugs, crown borer, crinkle disease, and worn-out soils. Partial control for spittle bugs

and crown borers is possible and crinkle is eliminated by following a plant selection program. Strawberries should be planted on ground which has not grown strawberries for at least three years and the crop should never follow potatoes as both have a disease in common—rhizoctonia. Soil in high fertility is best for strawberry growing.

Careful selection of plants for new plantings is recommended and if plants are to be purchased, certified stock should be obtained. Every effort should be made to secure crinkle-free plants. More growers are urged to follow a certified plan and plant improvement program.

Future plantings in Linn county are justified to the extent, that the output can be conveniently handled by Linn county labor, other than picking. Unless the crop is contracted, growers are cautioned against planting large acreages although an acreage of five to eight acres can be conveniently handled without hiring help.

The average yield of Marshalls in Linn county varies, ranging from three-fourth of a ton to one and one-half tons per acre, depending upon the soils and age of plants. For the past five years average prices per pound paid to Linn county growers for Marshalls are as follows:

1931	6 cents
1932	2 cents
1933	5½ cents
1934	4 cents
1935	5 cents

The average price for the Ettersburg is seven cents per pound.

Cuthbert is Popular Raspberry

A small increase in red raspberry planting in Linn county is justified if plantings are confined to the better type of river-bottom lands. The average yield varies from one to three tons per acre and of the varieties grown the Cuthbert is the only commercial variety.

In 1934 Oregon and Washington canned approximately 53 per cent of the total amount of raspberries packed in the United States. Linn county's production for the same year totaled 938,772 pounds for canning and barreling purposes.

Mosaic is the most serious of the raspberry disease although to date it has not attacked Linn county plantings. Endorsement is given the bramble fruit quarantine placed on the importation of bramble fruits into the state of Oregon and the movement within the state. Growers are urged to cooperate with the quarantine movement in keeping diseased plantings from contaminating Oregon patches.

Good Soil Needed

Cuthbert red-raspberries are showing a ragged run-down appearance, and are

dying early and yielding poorly. This trouble is unknown and continued investigations directed toward determining a solution for this trouble are heartily endorsed.

Large yields of raspberries cannot be expected from worn-out soils. An annual cover crop is advisable although thus far no need for commercial fertilizers has become evident in Linn county. Rows should not be closer than eight feet and plants do best if planted about 42 inches apart in rows. A yield of 2 tons per acre will return a profit and the plantings giving smaller yields should be discouraged. Red raspberry plantings past their prime, due to age or disease, should be removed and additional acreage be provided if high grade stock is used. The marginal fields seldom profit the owner and frequently produce inferior berries.

Blackcaps Suffer From Wilt

Black cap raspberries are adapted to growing on deep well-drained hill soils as well as river bottom lands. The acreage of this crop is on the decline in Oregon, mostly because of wilt disease. Reports indicate a slight increase in demand because of decreased plantings in Oregon and Washington. A slight increase in acreage is justified but the grower is advised to first establish market connections to protect him against dumping at market time.

Plum Farmer, Munger and Cumberland are the leading varieties.

Blackcap raspberries should not follow potato crops closer than three or four years as both have diseases in common. In new plantings of blackcaps, weak or otherwise affected hills should be removed from the field to cut down spread of wilt disease.

The yield of blackcaps is approximately one-half that of red raspberries and the cost of production is not so great, one and one-half tons per acre being satisfactory return. Plantings should not be made closer than six by six feet each way.

Gooseberry Acreage Is Small

Linn county produces a very small acreage of gooseberries, the per acre yield averaging 2350 pounds. Of the varieties grown Oregon Champion is the most popular. Because of limited market and demand growers are advised to contract cannerymen before a large acreage is planted.

Future For Youngberry Uncertain

Within the past few years the Youngberry has been developed commercially in Linn county, although it has been grown in California and the southern states for several years. There appears to be a demand from canners and barrelers, but the degree of expansion is unknown.

Youngberries are subject to leaf spot, a factor to be considered in planting the stock, although the disease can be controlled by spray.

LINN COUNTY POULTRY REPORT

LINN PRODUCES SURPLUS OF EGGS

Linn county produces a surplus of eggs which must be marketed outside the county.

In 1930 87 per cent, 2688 farms, reported having poultry. A total of 52 per cent, 1408 farms, kept home table flocks of less than 50 hens producing little more than needed for home consumption. There were 1408 farms, 38 per cent, with flocks ranging from 50 to 200 hens, these flocks producing more than was needed for home use and not enough to economically meet export market conditions. The remaining 10 per cent, 266 farms, kept poultry for the definite purpose to produce eggs for the commercial market.

The value of Linn county chickens raised and eggs produced in 1930 was \$1,000,997. An industry of this size and one that affects so many homes should be better adjusted to meet market conditions.

Much talk and interest in cooperative marketing exists in the county. The difficulty however, that 90 per cent of the farms in the county cannot join the marketing association because their flocks are too small to sign a minimum contract.

Two Market Channels

Egg producers in Linn county have the choice of selling either through established independent dealers or through the Pacific Cooperative Poultry Producers' Association which maintains one of its four branch stations in the county seat of Linn county. The cooperative of the coast states maintain their own sales headquarters in eastern cities. The grower's choice of market outlets has been brought almost to his door.

Growers also have the choice of purchasing their feeds and supplies through the same channels as those used to sell their eggs.

Exporters Like White Eggs

The export demand is for white shelled eggs. This demand naturally results in domination by the Leghorn and other white egg breeds. This does not mean

Evergreens Suffer From Mite

With the appearance of the blackberry mite a change in production practice for evergreen blackberries is necessary, the mite causing a lessening of maturity for native berries. The small market demand for evergreen berries may open a possibility for a few more acres of these berries, but growers must be determined to spray, recommendations for the spray being available in Extension Bulletin 337. The evergreen blackberry should be planted only where a market outlet is available.

the exclusion of Reds, Rocks, and other heavy and brown-shelled egg breeds from Linn county farms.

The demand for eggs from well managed flocks to supply hatcheries, both within and out of the state, should be considered by many farmers as an additional market outlet.

Although the state is well adapted to commercial egg production, increase of the industry and exports volume will depend upon progress Oregon farmers make in adapting their production to requirements of outside markets.

Competition Evident

The industry has weathered the storm of depression in a most creditable manner, expanding in Oregon and elsewhere as well. If Oregon preserves its present market outlets, if it develops a real industry for which western Oregon is particularly well adapted, many small farm flocks must be changed to better business units.

Oregon produces a surplus of eggs above the needs of state consumption, the surplus being exported to distant markets, principally the Atlantic seaboard and California. The major part of the commercial egg industry is in the counties west of the Cascade range.

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The surplus eggs of Oregon must be of high quality in order to meet competition from other districts and to justify transportation costs.

Oregon produces only one per cent of the nation's poultry products, so with so low a volume the state has little voice in setting prices. Producers here operate on a margin between New York prices minus the overhead of delivering their eggs of certain grade.

The industry here and throughout the nation is expected to expand in all phases throughout 1936 as a result of favorable prices in 1935. The Pacific coast states in 1936, as in 1935, likely will show the highest per cent of hatching increase, the increased number of pullets next fall probably having a slight depressing price effect which may be partially offset by an increased consumer demand.

Higher prevailing meat prices will tend to place eggs in a more favorable position, following a decline since 1932.

Linn County Has Future

Poultry farming as a planned industry in Linn county is sound business. A number of new farm, rehabilitations, resettlement, and subsistence farms will keep poultry. If Oregon's expansion is toward barnyard flocks rather than flocks large enough to justify commercial care, the state cannot expect to meet export market requirements economically. Approximately 90 per cent of the farmers who keep chickens in Linn county have less than 200 hens. These flocks are too small to justify frequent gathering, proper farm storage facilities, frequent deliveries in case lots and other factors necessary to an industry on an export basis.

The outlook for the industry depends largely upon whether the farmers who keep poultry make a reasonable effort to adjust their poultry units in relation to the demand which prevail in established markets and established market agencies.

Keep "Table" Flock Small

On Willamette valley farms desiring small home table flocks, from which eggs do not enter trade channels, it is recommended that only flocks of two dozen hens or less be kept.

The farm which plans a sideline cash income from poultry, from which eggs will go into trade channels, is recommended that a flock ranging from 400 to 500 hens be the ultimate objective.

A farm which expects to derive its major source of income from poultry should develop a business unit of approximately 2,000 hens as soon as experience and capital warrants.

For a well rounded specialized poultry farm, operated under natural conditions of ranging young stock, an acreage of 20 acres is recommended. Where artificial confinement throughout is

practiced, less acreage is needed. Rearing under artificial confinement is successful in a few instances but is not given general endorsement for all.

From 50 to 60 per cent of the laying flock should be replaced each year with pullets.

Secure Disease-Free Stock

In purchasing day-old chicks caution should be observed to determine that they are from pullorum-free parent stock, or from accurately blood tested parent stock with all reactors removed. The most favorable period to purchase chicks in Linn county is from February 15 to May 15. Two types of brooder houses are in general use by those in the industry, each designed to overcome losses from soil contamination. The first is the permanent brooder house, equipped with artificial yards such as wire, concrete, or board floor. (See the county agent for Extension Bulletin 451).

The second is the portable brooder house equipped with skids for moving to clean soil. (Extension Bulletin 446).

Shelter houses closed on three sides are recommended for young stock on the range. (Extension Bulletin 442).

Green feed should be provided throughout the growing period and fed liberally until the pullets are in production. The feed then may be reduced in the interests of avoiding too dark yolk color. Kale or alfalfa are the main green feed crops with carrots supplying winter succulence in case of a freeze.

The greatest economic loss to the poultry grower is loss of quality of the eggs on the farm after they are laid and before they reach the grader's candle. "How to Construct an Insulated Egg Room" is found in Extension Bulletin 445.

Extremes of temperature have shown that laying fowls do better in partially insulated houses. Plans for this type of house and others as well will be found in Extension Bulletin 480.

More capital is required to develop a safe poultry enterprise than the amateur anticipates. Exclusive of land and the home, it will require a first year investment of approximately \$2.50 to \$3.00 per pullet before she starts production. This expenditure, using laying house for brooding, includes cost of brooder, fuel, feed, litter, cost of chicks, mortality losses, houses and equipment.

The breeder and hatchery code was thrown out when the N.R.A. was declared unconstitutional. The provisions in it relating to fair trade practices, false and misleading advertising are still in effect through a poultry in industry trade agreement with the federal trade commission. Anyone injured by false advertising or unfair poultry trade practices should notify the Oregon branch of International Baby Chick Association.

REPORT OF THE LINN COUNTY DAIRY COMMITTEE

Linn Has Steady Increase

During the past 45 years the number of dairy cows of milking age on Linn county farms has increased from 8,408 in 1890 to 13,802 in 1910, 13,187 in 1930, and an estimate of 17,000 in 1935. The number of cows of milking age in the United States increased from 16,500,000 in 1890 to a peak of 26,185,000 in 1934 and an estimated 25,100,000 January 1 of this year.

During this same period the human

have to pay if and when they over produce their home market. If this should happen, the western producers must be prepared to lower their production costs at least as much as their loss in freight differential, if they continue to produce at the same relationship between cost and selling price as at present.

No Change Forecast

According to the Agricultural Outlook Report for 1936 there is no pro-

little different from the number on the farms of the country in 1933, when there was an accumulation of 100,000,000 pounds of butter in storage above the normal amounts. It would appear from this that a slight drop in consumer demand might cause a rapid accumulation of unused surplus with a corresponding drop in prices.

Dairy Major Industry

As shown by the 1926-1930 average cash farm income of Linn county 17.6 per cent of the total income comes from the sale of dairy products with a total of 48 per cent coming from the sale of all animal products and 52 per cent from the sale of all crop products.

There are four creameries, one condensery, and five milk distributing plants operating in the county. In addition to that a good deal of cream is shipped to manufacturers outside of the county. Manufacturing facilities are more than adequate to take care of present production in the county.

The following table shows the average price of butterfat paid by the Albany Creamery association to its members during the past 11 years. Probably this is representative of the average butter-fat price for the county for churning cream.

1925	..... 49	1930	..... 35
1926	..... 41½	1931	..... 27
1927	..... 46	1932	..... 20
1928	..... 48½	1933	..... 19
1929	..... 28	1934	..... 24
		1935	..... 30½

DAIRYING HIGHLY PRAISED

Dairying is a sound enterprise for Linn county, and that its further development should be encouraged. This development, however, should be based upon the fundamental basis of keeping production costs low.

Herd Improvement Is Vital

To develop a herd of high producing cows the owner must constantly cull the low producers from his herds. In addition to individual attention to this problem, which is urged upon every dairyman, recommendation is made that the Linn-Benton Herd Improvement Association be expanded to complete a full year of testing. A special committee should be selected to assist the county agent in accomplishing this.

Proved sires should be developed in the Herd Improvement Association. A program which will result in proving at least five sires each year would be of value to the association.

General use of grade sires should be discouraged. A survey indicates that approximately one-third of the dairy sires used in this county are grades. Many small dairymen find it difficult to own a good sire because of relative high cost per cow. It is suggested that the joint-ownership of sires by small groups, or that a group of two or three each owning a good sire arrange to exchange every two years, are two methods by which the owners

Number of Milk Cows On Hand Throughout Nation, 11 Western States, State of Oregon, and Linn County

Year	United States	11 western states	Oregon	Linn county
1890	16,512,000 (1)	721,000 (1)	114,000 (1)	8,408
1900	17,136,000 (1)	867,000 (1)	109,000 (1)	8,977
1910	20,625,000 (2)	1,341,000 (2)	152,000 (2)	13,802
1920	19,675,000 (3)	1,541,000 (3)	200,000 (3)	13,399
1925	17,645,000 (3)	1,623,000 (3)	217,000 (3)	13,765
1930	20,499,000 (2)	1,814,000 (2)	288,000 (3)	13,187
1935 (4)	25,100,000 (3)	2,177,000 (3)	270,000 (3)	17,000 est.

(1) June 1.

(2) April 15.

(3) January 1.

(4) Estimates by B. A. E.

Source: U. S. census reports.

11 western.

Oregon, 1920-1930, Livestock, Meat and Wool Market Statistics.

Tabulated by the
Oregon State Agricultural College
Extension Service

population has increased more rapidly than cow population. The 11 western states have had for a number of years a few less cows per thousand population than the rest of the country and total production in these states has been about on a balance with consumption making prices generally tending towards the Chicago price plus the freight. If the western states produce more dairy products than needed for consumption in the west, the price undoubtedly would then become the Chicago price less the freight. That is the price western dairymen will

spect of a great change in dairy cattle numbers during the next year or two but that further increases may occur then. Prices for dairy products are still relatively low as compared to beef, veal, pork and feed grains. There is apparently a close correlation between the index of industrial pay-rolls and the price of butter. If this relationship is of any significance, it means that increased demand by consumers may have an important bearing on any increased price of dairy products.

The present number of cows of milking age in the entire country is

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of small herds may secure the service of good sires. The second suggestion also permits the "proving" of sires.

It also is noted that there is a growing tendency to cross breed dairy cattle. This is a practice to be discouraged.

Heavy Loss In Hay

Thousands of tons of good hay are spoiled annually by poor curing methods in Linn county. The common fault are late cutting and slowness in moving the hay out of the swath and cocks. Both of these faults result in a hay of very low quality for milk production. Dairymen desiring cheap production from their hay must supply their cows with good hay, cured with a minimum loss of palatability.

More alfalfa can be raised in Linn county and its increased production is suggested. Alfalfa is the best hay known for milk production and where it cannot be grown, clover or oats and vetch can be raised for the dairy cows. No matter what hay is raised, it should be of good quality.

Succulent Feeds

Good dairy practice will provide at least 25 pounds of succulence per cow per day during the time no pasture is available. This can be given in the form of silage, roots, or kale.

The use of kale is strongly urged and enough should be planted to take care of the milking herd on each farm until at least January 1 of each

year. It is recognized that there is a certain weather hazard in depending upon this succulence, but its advantages more than offset this hazard, which occurs about once in five years.

Pastures

There is a possibility in many parts of Linn county where irrigated pastures may be further developed. Ladino clover has given excellent results on many farms in this section of the Willamette valley. Willamette valley sweet clover, a new stem rot resistant variety, makes excellent pasture on soils suitable to the growing of alfalfa. Extension trials of this pasture are recommended.

Sudan grass planted on warm, well-drained soils makes an excellent late summer soiling and pasture crop on lands not suitable for irrigation.

Alfalfa can be used either as a hay crop or, where it grows throughout the summer, many farmers are finding it valuable for pasture after the first or second cutting is taken off for hay.

Cows on Ladino clover, sweet clover, or alfalfa pasture should be watched carefully for bloat, especially when they are first turned onto this type of pasture.

Business Study Essential

In the larger herds the cost of production ordinarily will be lower than in the smaller herds. This is emphasized here for the benefit of those who may not appreciate fully the significance of this important factor in production costs. There is no desire to suggest to anyone how large to develop his business but at the same time the suggestion seems justified that those who desire to engage in the dairy business as an important part of their farm business should not overlook this point.

Many dairymen have been raising a surplus of dairy heifers with a view of selling this stock to out-of-state buyers. Cost of production figures gathered by the Oregon Agricultural Experiment Station indicates that in the average year the market value of these heifers at freshening time seldom equals the cost of production. Except on those farms where this is an exceptionally low cost of production and quality stock can be produced to sell at a premium, it is recommended that only sufficient heifers be raised to replace normal culling in the herd. This recommendation would not apply to pure bred breeders of high quality stock.

According to the Agricultural Outlook spring freshening is increasing throughout the United States. There may be some advantage for fall freshening in Linn county due to a better distribution of labor and better production per cow when succulent feed and good pasture are provided. Prices during the winter months are unusually higher than during the "into-

storage" movement period in the spring and early summer.

Market Might Be Improved

There is adequate plant capacity to take care of all the raw product that may be produced in Linn county for years to come. Some practices in the present system, however, are worthy of comment.

It is believed that there is a great waste of efficiency in the present methods of gathering the raw products from the farms. Routes overlap, and duplication of efforts exist. This form of competition is expensive to the operators and, as usual, eventually is paid by the producers. The manufacturers might meet with a committee of producers and attempt to eliminate this wasteful practice.

Quality in dairy products is necessary to secure adequate consumer demand. The progressive producer is interested in producing good raw materials, but likes to be paid for his efforts, rather than to receive for his good products the same price that is paid to the less interested producer. Manufacturers are urged to buy cream on grade and pay a proper differential for the cream of different grades.

Consumer Education

Dairy products have many qualities that, if fully understood by the consumer, would result in greater consumption. These qualities can best be gotten before the consumer through a specialized kind of education advertising such as is conducted by the Oregon Dairy Council. Support of this organization by both the producers and manufacturers of this area is urged and is the hope that eventually a regional worker may be stationed in the upper Willamette valley.

Disease Control Advances

Linn county has made notable progress in the elimination of Bang's disease under the federal program. Up to November 16, 1935, a total of 14,828 tests had been made with 528 reactors and 351 suspects. Much work however, remains to be done in the county. This program should be vigorously supported and Linn county would benefit from taking up testing under the state Bang's disease control law January 1, 1937, so the disease eventually may be eliminated from the county.

FAIR STATISTICS FOR LINN COUNTY 1934-1935

Name of Fair		Premiums
Oregon State	28	52 \$223.75
Linn 4-H	128	201 42.50
P. I. L. S.	11	11 5.00
Halsey	33	27 15.75
Sweet Home	36	36 6.00
Lebanon	28	31 Ribbons
Oakville	14	14 7.25
Jersey Jubilee	10	14 5.50
Scio Fat Lamb	9	24 21.00
Junction City	8	14 6.00
Albany Corn	38	38 22.00
		343 462 \$701.75

No. exhibitors 343; No. exhibits 462.
Total in premiums, \$701.75.

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REPORT OF LINN COUNTY TURKEY GROUP

Turkey production is an agricultural crop for which Linn county is well adapted and in keeping with general economic conditions should be encouraged, but not exploited.

During the past few years the turkey industry in Linn county has expanded. In addition to the production of market turkeys, hatcheries and breeding farms have been established which supply poults, hatchings eggs, and breeding stock to many parts of the nation. A surplus of 75,000 turkeys is produced which must be marketed outside of the county and state as a part of the Oregon export crop. The turkey crop of 1935 brought a gross return of \$250,000.00 to Linn county farmers.

More Competition for Oregon

Oregon's turkey industry faces increased competition with other states adopting artificial methods of mass production. Because the industry looked to the west for disease free range, this state held a natural advantage for a few years.

Oregon produces approximately 700,000 turkeys, of which more than half must be exported to markets outside the state.

Turkey growers during recent years have adopted modern methods of incubation, brooding, and rearing in semi-confinement. Turkeys from hatching to market age are fed balanced, growth promoting and finishing feeds. The adoption of these practices has increased mass production. The trend is toward larger commercial flocks in the hands of fewer operators and a decline in number of range reared birds.

The ready sale of day-old poults has stimulated the expansion of commercial hatcheries and the demand for hatching eggs has resulted in many farms maintaining mated flocks for the production of them.

Turkey shelter houses, artificial lights, selecting breeders for early maturity, and northern and eastern hatcheries contracting southern winter hatching eggs for early poults are factors which result in an increasing number of early turkeys being marketed each summer and fall. This occurs before the market price has been established and before the cold storage holdings have been consumed. The industry is rapidly losing its speculative possibilities and is becoming a marginal business of narrower profit per pound of meat.

The turkey crop of 1935 had a most favorable ratio between feed costs and turkey meat prices. As a result of this favorable year, the general trend toward expansion indicates a strong possibility that the number raised may soon exceed that which the per capita rate of consumption will absorb at fair prices. The United States turkey crop increased from 14,800,000 birds in 1927 to 18,740,000 in 1934.

Oregon turkey growers have the advantages of experience, reasonable priced feeds, climate and green feed, foundation breeding flocks, and both independent and cooperative outlets for their product. During this period of general expansion Oregon growers are engaged in a highly competitive business in which a survival of the fittest by individuals and by districts ultimately will adjust the industry.

The depression aided by the great drouth in the mid-west reduced the numbers of chickens and turkeys. The same causes, aided by agricultural adjustment, resulted in reduced supplies of pork and other meats. Turkey growers who plan great expansion for 1936 must recognize the fact that their product will have to compete against an increased supply of chickens, turkeys, and other meats. Only an improved consumers' demand can prevent a somewhat depressing effect on prices in 1936.

Two Channels Open to Growers

Growers have a choice of marketing their turkeys through established produce firms or through an established cooperative marketing association.

Producers may purchase feeds and supplies either from established feed companies or through the cooperative channels and the existence of both methods of marketing and purchasing have been factors in stabilizing the industry in the county.

Turkey Cycle Short One

The turkey business is a short term

enterprise. During periods of good prices many rush into it and during periods of low prices there is a general exodus of marginal and "loser" operators. The cycle of both high and low prices is short so the business adjusts itself more quickly than many long term agricultural enterprises.

In addition to making a thorough study of economic conditions affecting the turkey industry, the successful grower fortifies his business with proven management practices, has a knowledge of disease control, overcomes known hazards, studies his cost of producing a pound of turkey meat, and establishes ample credit.

Committee Suggests Improvements

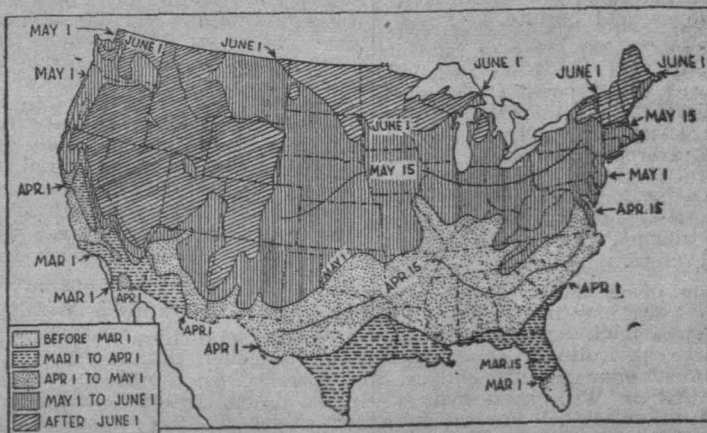
1. Breeding stock should be selected early in the fall and kept separated from the market flock during the fattening periods, being fed a breeders' mash from early January throughout the breeding season.

2. Turkeys should not be reared or ranged with chickens or on ground recently used as a chicken range.

3. The cost of producing turkeys can be reduced materially by providing succulent green feed during the growing period, the birds being great consumers of roughage in this form. In addition to rape, alfalfa, clover, and sudan grass row crops such as corn or sun flowers should be provided for both green feed and shade on farms where natural shade is not available.

4. Turkey prices are depressed each year through the arrival on the market of poorly finished birds. No turkeys should be killed for market until they are properly finished in both flesh and feathering.

5. Ample credit is necessary to raise a band of high quality turkeys properly.



This U. S. Department of Agriculture map divides the country into planting zones, where the chances of damage from frost is only one to ten. Most farmers plant a little earlier and take a chance on late cold weather.

Beginners too often think in terms of profit rather than cost. Growers generally should provide finances to the extent of the cost of one sack of feed for each market turkey. Credit when extended to the extent of furnishing brooder houses, brooders, fuel, poult, feed, and groceries to new beginners is unfair competition against established growers. It results in exploiting an industry to the detriment of all. It is urged that a general credit policy be established that extends credit only to growers who can finance their own poults to eight weeks of age.

6. There are disease hazards which growers must consider, the most common ones being fowl-pox, roup, pul-lorum, mycosis, and coccidiosis. Each of these hazards can be controlled with a minimum of loss to the grower. Growers are urged to protect their investments by having an authentic diagnosis made of disease outbreaks as early as possible.

7. Turkey stealing is a growing hazard against which producers must

protect themselves. A movement is now under way by the growers to do the following:

- a. Make poultry stealing a felony.
- b. Require all dealers to display a record of brands registered in the state. The present law requires dealers to record the number of each brand of turkeys purchased. This should aid the grower in tracing stolen fowls.
- c. Publish each year a booklet of all registered brands and distribute to every peace officer in the state.
- d. Growers purchasing branded birds for breeders would get from that breeder a bill of sale in order that he could later present it when selling turkeys having a different brand number than his own.

8. Amendment of the present law relating to the disposition of dog tax license money is urged so it will include indemnity for poultry killed by dogs.

REPORT OF SOILS COMMITTEE IRRIGATION VITAL TO CROPS

Irrigation is recommended as a sound practice wherever water may be obtained economically because the lack of summer rainfalls handicaps the production of many crops expected to grow throughout the summer months. Weather records at Albany indicate that the average rainfall for the months of May, June, July, and August is only slightly over four inches which is not adequate to supply the needs of crops expected to grow during that period. The records further show that during these four months there never has been enough rainfall to supply the needs for maximum yields of certain crops particularly orchard crops, alfalfa, clover, and pasture.

There are 275,000 acres of land in Linn county that could be irrigated. Of this area 75,000 acres are soils of the Willamette, Chehalis, Newberg and similar free-working soils on which horticultural crops, vegetables, alfalfa and general field crops may be grown. The remaining area of 200,000 acres is composed of heavy soils with poor drainage adapted chiefly to pastures and field crops.

Irrigation of as much of this area for which water may be secured economically is sound development and many large agricultural experiments are dependent upon an increased area under irrigation. With good management irrigated farms will produce more than twice the return that the same farm would produce without irrigation.

Summer Moisture Inadequate

At the present time there is an in-

adequate water supply from either the summer flow of Linn county streams or from ground-water, not enough to cover more than a small percentage of the available land. The program of the United States Army engineers in studying feasibility of storage sights on the headwaters of Linn county streams is commended. These valuable reservoirs should be constructed as soon as possible since the construction would not only mean an added supply of irrigation water but also afford a means of flood control which would assist in preventing a large annual loss to much of the river bottom land. Continued study of ground-water possibilities by the Army engineer is urged. The results of the study should be made available to the public as soon as possible to assist persons wishing to irrigate from wells.


Additional water supplied through irrigation should be a benefit to any crop expected to grow through the summer months. The expense for irrigating these crops can only be told after a careful study of the cost of irrigation.

Irrigation is practical and profitable on a number of farms in widely scattered sections of Linn county. Irrigated crops include: pasture, strawberries, raspberries, all kinds of vegetables, mint, alfalfa, potatoes, walnuts, and red clover for hay and seed, and a variety of other crops. Wherever individuals have attempted the irrigation of any of these crops on a base that is economical they are continuing to irrigate, believing irrigation is a very profitable practice. The installation of

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an irrigation system to irrigate any of these crops is not recommended unless a person has an assurance of a market for the crop. Irrigation will add a certain amount of cash cost which will increase the losses if the crop cannot be sold.

The acreage of irrigated pasture could be greatly increased to the benefit of the dairy farmer and those producing other farm crops. Experiments with irrigated pasture have shown that where Ladino clover is used, either straight or with the pasture mixture, and properly irrigated that this pasture will have a carrying capacity of two to four cows per acre for six months of the year. Other stock will be carried in like proportion. Where such a carrying capacity is secured gross returns per acre have ranged from \$40 to \$100. Because of the large amount of feed produced probably no other feed crop can be grown on the farm that will return more per acre.

The type of irrigation to use depends entirely upon the individual situation. Factors to be considered are: the crop, soil type, available water supply, acres to be irrigated, type of power available, and many other factors. A satisfactory irrigation system cannot be installed until after careful consideration of all of these factors. The Oregon State College Extension Service through the County Agent's office maintains adequate assistance to help farmers work out their irrigation problems. Anyone

wishing to irrigate should obtain as much assistance as possible from the county agent's office, thereby making use of available technical assistance.

Study of Pump Essential

Where it is necessary to pump irrigation water, it is extremely important that the pumping plant be designed to fit the individual job. The centrifugal pump generally will be the most economical type of pump to use, but in order for this pump to do its job efficiently it must be fitted for the particular job. Purchases of pumps should be based on the amount of water desired, the total height to which water must be lifted or forced, and the type of power available. It is well to determine this information, turn it over to a reliable pump dealer, and let him select a pump best suited to do the work desired. Pumps available from different dealers may be compared on the basis of the amount of water delivered with the given horse power.

Pipe sizes and the size and locality of flume or ditches should be worked out carefully to avoid unnecessary losses in power. After the irrigation system is installed, the crops should be irrigated according to their moisture requirements. They should never be allowed to stop growth any time during the season because of lack of moisture. People irrigating now generally have made the mistake of delaying the first irrigation in the season too long. The irrigation plant should be installed and ready for operation between May 1 and 15. While these dates generally are not necessary, June 1 during average years being early enough, there are some years when water should be applied much earlier.

The State College Experiment Station is urged to carry on its experimental work to determine the amount of water needed for various crops on different soils types and the best methods of applying this water. Further research work also would be desirable to determine other crops that might be irrigated profitably.

Irrigation tours and field meetings in the summer months are valuable so people not acquainted with irrigation may have an opportunity to see just what results are obtained with the use of water. Some of the best methods of applying this water also are seen on these tours, events which should be continued.

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REPORT OF COMMITTEE ON AGRICULTURAL ECONOMICS

Recent trends in farm lands indicate that there is a slow but gradual increase in acreage of lands being placed under cultivation. Over a 55-year period 1880 to 1935, according to the United States census, there has been an increase of 4,604 acres placed under cultivation. Although a greater acreage than this actually has been cleared of brush and stumps, this total is offset by a correspondingly large acreage of hill lands reverting to pasture.

From 1920 to 1930, the years of favorable prices, intensive use was made of submarginal land by breaking it up and seeding to crops, principally ryegrass on the Dayton soils. It is expected that in the future more attention will be given to the clearing of river-bottom lands and less attention to the improvement of hill lands. Recommendations for the future are:

(1) That clearing and improvement of the best types of soil (Chehallis, Newberg, and Willamette) be continued where the soil is not subject to erosion.

(2) That attention be given to hill lands only where the soil is unusually deep.

(3) That unproductive "white land" not be cultivated intensively, but be seeded to permanent pasture and used for grazing, principally sheep.

Additional farm land might be made available through the development of irrigation and drainage, considered fundamental in land development. Many of the farms in Linn county have wet areas which lower the value of the entire farm, retarding land development increasing cost of production, and delaying farming operations.

Unproductive land taken out of cultivation should be seeded to pasture and used for grazing purposes and hill soils that have been abandoned and show but little promise agriculturally should be permitted to revert to forest.

Study Made of Land Ownership

Approximately 66 per cent of the lands in Linn county are not in farms. Practically this entire amount represents land which is not desirable for agricultural purposes, most of it being mountainous in nature.

The following table represents the land ownership in Linn county of 1933

Type of Ownership	Acres	Percentage of County Area
Land in farms	499,144	33.9
Privately owned land not in farms	565,730	31.5
State Lands	180	.1
County Lands	3,301	.2
National Forest	446,825	30.7
Other Federal Lands	60,255	4.1
Total	1,475,435	100.0

Through the period of high prices between 1920 and 1930 there was a

gradual shift of acreage from native and temporary pasture to grain crops. Hill lands were utilized for grazing and fruit trees planted in large numbers. Through the boom period many horticultural crops were planted on lands not adapted to fruit growing even though plenty of suitable land was available.

It might be advisable to shift some of the less productive land over to livestock and grazing. On the other hand some of the better lands (Chehallis, Newberg, and Willamette types) should be farmed more intensively.

The following table indicates the change in size of farms and trend in improvement in Linn county:

All Land in Farms			Improved Land In Farms			Average size of Farms	
Census of	Acres	Per Cent of County Area	Acres	Per Cent of Farm Land	Number of Farms	Total Acres	Improved Acres
1880	413,983	28.8	256,000	61.8	1,528	271.0	167.5
1890	416,827	29.0	256,830	61.6	1,711	243.6	150.1
1900	431,439	34.2	216,582	44.1	2,417	203.3	89.5
1910	462,337	32.2	236,033	51.1	2,751	168.1	85.8
1920	472,469	32.7	258,591	54.7	3,041	155.4	85.0
1925	467,353	32.3	248,001	53.1	3,308	141.3	75.0
1930	468,706	32.4	253,990	54.2	3,074	152.5	82.6
1933	499,144	34.5	260,604	52.2	3,849	129.7	67.7

It is believed desirable that the size of an average river-bottom farm should be at least 50 acres, while a farm located on prairie land should contain at least 160 acres. It is recommended that on an average, smaller units should not be encouraged until irrigation or drainage be further developed, and larger units discouraged as objectionable from the social and economic standpoint.

Although Linn county eventually can support an additional number of families it is felt that this should not be encouraged until further lands are cleared, and irrigation and drainage developed, or until a larger market is developed for intensive crops such as fruits and vegetables.

Part Time Farming Studied

With depressed economic conditions there has been a tendency for the increase of part-time farms. City families have moved into rural communities adjacent to the town or place of work and it is from these farms they expect to earn their living expenses. It is expected that part-time farming will continue along present lines. Local industrial activities have about reached their capacity to employ part-time farmers.

The purchase of small farms with the purchaser having in mind obtaining outside employment as an outside income is not recommended. Seasonal work, either in the field or factory is not expected to increase and competition is increasing for employment.

A survey made by the farm management department, of Oregon State college shows that more than 25 per cent of the farmers of Oregon are considered as part-time farmers in that their farms are too small to produce a living. The part-time farms furnish a rural residence and a part of the family food supply, but in most cases little to sell. Of 2,110 farms studied, the average family received \$117 from the sale of farm products, \$579 from wages, and \$67 from miscellaneous sources, while the farm produce used was valued at \$173.

From the survey the following conclusions were drawn.

Advantages of part-time farming: Country life and lower cost of living.

Disadvantages: Distance from city, work, or school, and lack of employment.

Chief mistakes: paying too much for the farm or buying too small a tract.

Logged off Lands Available

The lumber industry is making available large areas of logged-off land some of which may be used for grazing, although, as far as can be determined no general effort has been made to reseed these areas. The logged-off areas therefore, have grown up to fern and brush and are of little value for grazing purposes. Wherever such lands are of suitable quality and location they should be seeded to a good grass mixture immediately after burning when there is a good seed bed. Such lands might then be used for grazing until such time as timber crowds out the grass.

Some prairie land might be returned to permanent pasture, particularly those lands where crop production has decreased due to the wearing out of the soil or improper drainage.

50 Per cent of Price Advised

Although consideration should be given to the individual, the agricultural economic committee feels that no investment should be made in farm property or equipment where at least 50 per cent of the purchase price cannot be made in a down payment.

The committee discourages indebtedness except where absolutely necessary. "Shoestring" buying, that is, a small amount of money down, is particularly discouraged. In event debt is incurred the borrower should lend every effort to repay as soon as possible, even though

certain conveniences would be sacrificed. Where land is purchased on deferred payments it is recommended that the interest rate not exceed four per cent.

The committee further feels that a lowering of the tax rate would materially aid the farmer in carrying his debt load.

Buying farms by persons unfamiliar with local conditions would be improved if purchasers obtain the services of a competent appraiser. It is felt that the small additional charges made by the appraiser will more than compensate the purchaser in determining the true value of the farm. Newcomers also might profit by renting a farm for a period of one or two years before purchasing. This will give them an opportunity to become adjusted, to become better acquainted with the crops produced, the types of soils, and land values.

Amortization Plan Favored

Where debt is necessary the amortization payment plan rather than a time payment plan is advised. By such a plan the purchaser will be given op-

portunity to repay his debts in a systematic and orderly way without fear of losing the property.

Advantage can be taken of banking credit when a good workable plan of liquidation can be presented. Bank credit may be used where the borrower can show that his business will be improved by the loan. Bank credit also may be used where a purchaser needs feed for livestock. Persons otherwise out of debt may use bank credit where property, equipment, or improvements are to be purchased. In all cases money should be borrowed on a basis where the borrower can show where repayment can be made and where the money will be obtained. Persons already in debt or who borrow money for existence, rather than to make a profit, are urged to proceed cautiously before applying for credit.

A factor in the successful management of a farm is the keeping of a simple farm record and every farmer is urged to secure a suitable farm account book and keep a financial record of his farm business. A farm record is essential in establishing credit easily.

The following table indicates the number and amount of federal land

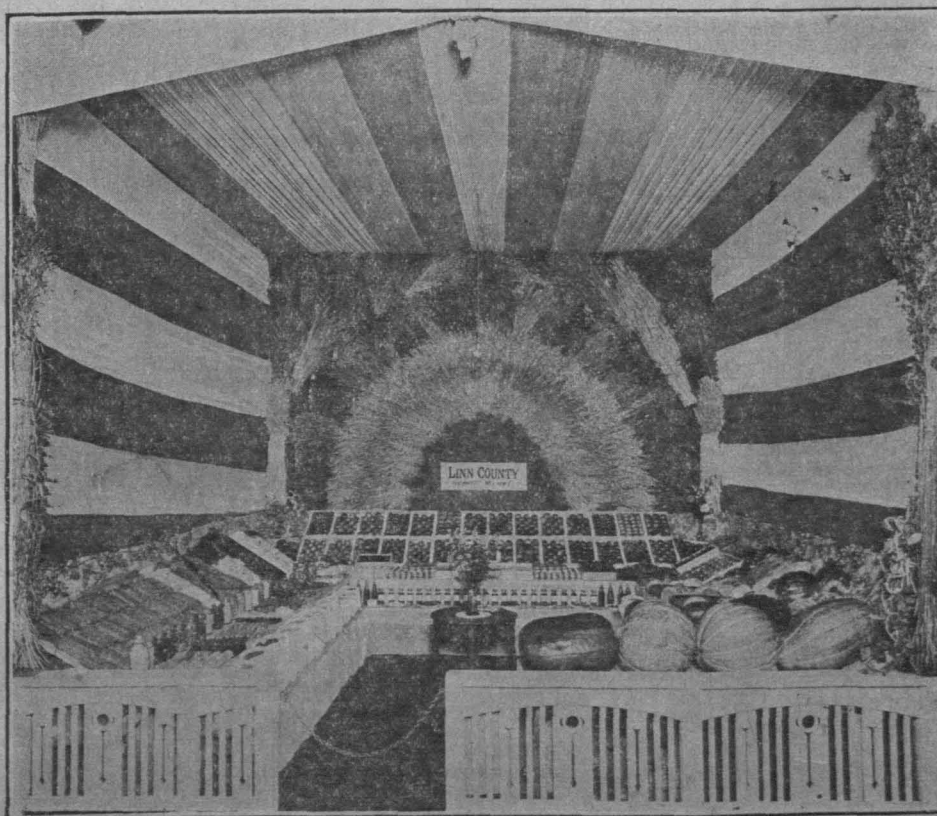
bank loans made to Linn county farmers since 1930:

Federal Land Bank Loans			Land Bank Commissioner loans		
1930	6	\$29,200	1930	...	.....
1931	8	27,900	1931	...	.....
1932	3	12,200	1932	...	.....
1933	20	64,500	1933	17	35,600
1934	157	479,700	1934	252	496,950
1935	39	99,700	1935	54	97,900

The following table indicates the value of farm products sold from Linn county farms in 1929:

Value of Produce	Number of Farms	Per Cent of Total
Under \$600	633	21.4
\$600-1000	482	16.3
\$1000-1500	448	15.2
\$1500-2500	625	21.1
\$2500-4000	418	14.1
\$4000-over	351	11.9
Total	2,957	100.0

The probable production of various farm products in 1936 will be about the same as in 1935.



Linn County's versatility is shown by its exhibits at the state fair. Above is a typical display of Linn County Products.

REPORT OF FARM CROPS COMMITTEE

Linn county is one of the major crop producing counties of the state. It has a large area of tillable land and a very large acreage of farm land in pasture. Many of the prairie soils are somewhat heavy in texture and there are substantial areas with inadequate drainage. In addition to this, there are probably 15 or 16 townships of foothill land outside of the national forest which in time will be primarily useful for providing pasture for beef cattle and sheep. There are many undeveloped possibilities in Linn county agriculture. Within recent years some new crops are being produced for forage and seed purposes and are beginning to pass the experimental stage.

Crop Acreage Large

Linn county had the largest oat acreage of any county in Oregon in 1934, and for a decade has been the largest rye grass seed producing county in the United States. It is also the most important alsike, clover seed producing county in western Oregon. Linn county is increasing its acreage and production of specialty seeds including radishes and onions, chewings fescue, English rye grass, crimson clover, hairy vetch, and winter field peas. Among the outstanding needs for the county are better pasture and forage and seed crops for the large areas of Dayton, Amity, and Wapato series of soils.

Wheat Acreage Declines

The acreage of wheat has declined from 52,636 acres in 1919 to 23,881 acres in 1935 with an exceptionally low yield of 266,000 bushels in 1935. This low yield was due largely to the drought year. Experience of farmers has indicated that other crops are generally more profitable than wheat, except on better drained and more productive soils. Where formerly considerable soft white wheat was shipped from the county, the reduction in acreage and the increase in requirements for feed wheat have resulted in the importation of about 40,000 bushels a year in recent years. Wheat production is recommended for continuance where it is needed for feed purposes and on farms where good yields can be secured. Winter wheat is more productive than spring wheat on well-drained soils not subject to severe overflow, but on many Linn county soils spring planting of a quick maturing variety is necessary. For fall planting, white winter and Holland are hardy varieties suited to medium heavy soils. Jenkin and Hood are non-hardy varieties that make high yields on the better drained soils. For spring planting Zimmerman is recommended on rather heavy cold soils. Marquis on average good soil of the prairie and river bottom lands, and Huston is best

for the red hills. Quality wheat is said to be giving good results in the northwest part of the county on bottom land.

Oats Important Crop

Oats is the most important cereal of the county, 51,163 acres being produced in 1934. It is the best suited of the common small cereals to the heavy soils of the county. These oats usually bright in appearance and heavy in test-weight and they are marketed rather readily and contribute extensively to the grain feed supply of dairy cows and poultry. Gray winter has the highest feed value of any of the oat varieties, Victory, a white spring oats, is the best of the common varieties for milling purposes and has a high feed value. Victory is recommended as the highest yielder for average soil conditions, although three-grain is only slightly under Victory in yield per acre. Eclipse, which is not a milling oats, is the best yielder for soils that hold moisture well and permit the maturing of a late variety of oats. For some of the white lands that can not be worked early, Markton has given good results in the county. Gray winter is the only variety recommended for fall planting. An excellent opportunity exists for the marketing of certified seed oats of the Victory or the Eclipse varieties. Oat smut is something of a problem, and New Improved Ceresan treatment is recommended. The demand for feed and milling oats justifies a normal acreage of this crop.

Barley Good Feed

The barley acreage has averaged around 6,000 acres for the past 10 years. Barley yields more pounds of feed per acre than oats or wheat on the richer and well drained soils.

Hannchen is the standard variety for spring planting and for the heavier type soils. OAC No. 7 is an excellent variety for spring planting on the Chelalis or Newberg soils of the river bottom land and for fall planting on well-drained uplands. OAC No. 6 is somewhat more winter hardy and should be used for fall planting where there is danger of winter killing. Barley should be treated for smut with New Improved Ceresan treatment. The threshing of barley should be given more attention to avoid skinning and breaking the kernels, as barley properly threshed will frequently sell advantageously for malting purposes.

Corn Can Be Expanded

Good corn can be produced in Linn county. The acreage has decreased slightly from 6,047 acres in 1930 to 5,317 acres in 1935. With Oregon importing over a million bushels of outside corn in the year ending June 30,

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Wire Fence Pliers	98c
Steel Body Wheel Barrow	\$4.25
Polished Long Handle Shovel	\$1.59
5 Tine Manure Fork	\$1.50
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1935, with approximately half of it Flint corn from the Argentine Republic, and with the Pacific Northwest importing a total of substantially over two million bushels, it would appear that this crop should receive serious consideration from farmers with soils warm enough and well-drained enough for this crop. It usually enjoys premiums of from half a cent to a cent a pound over other grain, and is frequently more productive under similar soil conditions. There is a problem of drying corn that is being worked upon and eventually there will be either commercial or home-shelled-corn driers for putting the corn in marketable condition. In many cases well-matured corn is successfully stored in cribs. If flax retting and scutching plants become established in the Willamette Valley, commercial corn driers should be established with them, as corn is a very important rotation crop with flax. There is enough of the Willamette, Amity, Newberg and Chehalis soils in Linn county to justify an annual acreage of from 15,000 to 20,000 acres for grain when drying facilities are available. Recommended varieties include Minnesota 13, and Goldenglow for grain, and McKay's Yellow Dent for silage. More attention should be paid to the production of high-producing seed corn.

Silage Important Feed

Silage is important for winter feeding and for mid-summer use on many farms. Probably vetch and oats or vetch and winter barley and corn are the best silage crops for most Linn county soils. Corn is especially desirable on the better soils and where a cultivated crop is required for weed control in a crop rotation. Vetch and grain planted on Canada thistle fields and harvested for silage makes good silage and if followed with clean culture helps in thistle control.

Sunflowers cut into the silo with about ten pounds of salt per ton of sunflowers or with about one-fourth or more of their weight of green corn makes a fine silage. Sunflowers make a better yield than corn on white land and other heavy soils.

Rye Proves Successful

The 1935 census shows 621 acres of rye for grain in Linn county. Rye is one of the most successful fall or spring planted grains for cold, heavy soils. The Rosen rye is one of the best winter varieties and some farmers are planting it in the late spring with rye grass for summer and early fall pasture, and harvest the rye as a seed crop. Abbruzzi spring rye is in substantial demand in the eastern states. This crop deserves more consideration in the county.

Hay Well Balanced

Hay production is in fairly good balance with consumption needs. Approximately 4000 tons of alfalfa, clover, vetch and other hays were shipped into

the drought area in 1934. Probably too much grain hay is produced in the county and it is believed that some of this could be replaced advantageously with legumes.

The census indicates too small an acreage of alfalfa for the area of soil suited to the crop. Vetch is the most important of the legume crops for the county, with clover of all kinds second in importance. It is believed that much of the grain hay on the foothill land could be replaced with a mixture of oats and smooth hairy vetch.

Consensus of opinion is that hay of Linn county is frequently cut over-ripe, that clover and alfalfa stands are allowed to get too thin and grassy before being plowed under, and that a great deal of the hay is overcured. Probably the most important steps for Linn farmers, in connection with hay-making, are to sow more seed and get thicker stands, plow under clover and alfalfa before it gets so weedy and grassy, cut the hay at a somewhat earlier stage while it has a higher protein content and before it has lost leaves, cure it quickly and get it into storage before it has become so dry and brittle as to lose color and fine parts.

The committee urges the conference to request the U. S. Weather Bureau to give daily weather forecasts covering the 5 to 7 days following and during the hay-making season. The Weather Bureau is giving marvelous service to

the aviation companies, and it is believed that this service for hay-makers can be readily provided, and that it will substantially improve hay quality.

Alfalfa Well Adapted

The alfalfa acreage in Linn county has increased from 210 acres in 1924 to 3,000 acres in 1935. There is still room for expansion of the alfalfa acreage in Linn county. The committee recommends that farmers plant nothing but certified Grimm seed and that they follow production plans that have proved suitable in Linn county, including the preparation of a clean, firm seed bed, inoculating seed, using landplaster at the rate of 75 pounds per acre before planting new seedlings and 100 to 125 pounds per acre on stands that have been established one year or more. Alfalfa is adapted to land that is fertile, deep, well drained, and not strongly acid. Ground limestone added to some of the slightly sour but deeper well drained soils, is valuable in alfalfa production on such lands. The planting of alfalfa on land that does not meet these requirements will lead to failure.

Pastures Need Improvement

With vast acreages of foothill land unsuited to production and with additional thousands of acres too heavy or too wet for cash cropping, the committee recommends serious attention to the development of more pasture for the

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better maintenance of the large dairy cow population, and for the increase in the beef cattle and sheep population of the county.

Clover Has Place

Red clover of the southern anthracnose resistant variety is recommended as for the standard variety for Linn county. The seed is marketable in the east and because of its resistance to stem rot it is somewhat better suited to Linn county conditions. Foundation seed stock is available and clover seed growers who have not had clover on their land during the past five years should apply to the county agent if interested in becoming growers of certified seed.

While the Canadian Trade Agreement has cut the alsike clover seed tariff in half and probably caused a greater loss in that business than the much advertised reduction in lumber tariff, the committee believes the crop should be grown for seed on those farms where good yields are secured.

Winter Field Peas Increase

Linn county has expanded its acreage of winter field peas substantially in the past two years. There are probably between 15,000 and 20,000 acres in western Oregon, and if there should be a low price for cotton in 1936, the marketing of the crop might be hazarded to some extent. However, these peas are valuable for feed purposes and should not be sacrificed at prices below their feed value. There is probably no justification for increasing the acreage. It is recommended that growers limit the acreage of peas to that which can be harvested and fumigated promptly, in order that pea weevils may be held under control.

Hairy Vetch Expands

This crop has been profitable for several years, and the acreage has practically doubled since 1934-5. There are probably from 25,000 to 35,000 acres in the Willamette Valley. While no one can predict market conditions for 1936, there appears no justification at present for increasing acreage. It is probably a mistake to plant hairy vetch on good land, because once established, it is practically impossible to get rid of it for many years, and it is inseparable by economical means from wheat, barley or other vetches.

An increased acreage of pure Hungarian vetch for seed is recommended.

Rye Grass Important Crop

Domestic rye grass is produced in ample quantities under present marketing facilities. Approximately 14,000 acres were planted in 1935 for 1936 harvest. Lack of coordination among growers and among shippers or both results in disastrous price cutting. Leading shippers state freely that there is no justification in farmers selling rye grass seed for less than 4 to 4½¢ a pound. How-

ever, price cutting among the numerous dealers frequently causes it to sell at from \$1.50 to \$2.75 per hundred.

English Rye Grass Is Deficient

English rye grass is still a deficiency crop and may well be grown on some of the better types of white land and some of the Wapato or Ash Swale soils. At present, the approximately 700 acres can well be expanded to around 3000 acres, but specialization should be made upon the New Zealand certified strain.

Chewing Fescue Has Place

This grass is imported in large quantities from New Zealand. It produces from 150 to 400 pounds of seed an acre, with a price range of from 11¢ to 60¢ a pound. It does well on well-drained soils and will even grow well on some hill soils. It is valuable for seed and pasture and appears to be resistant to gophers. Linn county has seven acres, it is believed. The rest of Oregon has less than a hundred, and we can use from 3000 to 5000 acres.

Tall oat grass and orchard grass offer possibilities in seed production. Garden seed production has been successfully demonstrated and should be expanded.

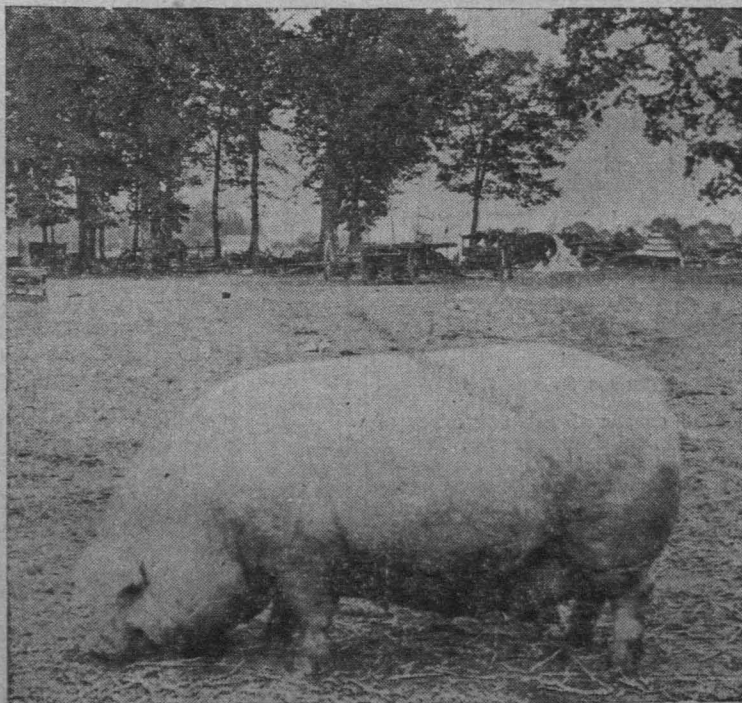
Flax Offers Possibility

Seed flax offers some opportunity in Linn county on Wapato soil that can be planted early, as in March or early April. In the absence of a crop control program, it may be worth considering on some of the better soils that would normally be in wheat or barley. Fiber

flax is suited to the Willamette, Chehalis and better Amity soils and to the heavier types of Newberg soil. With assurance of price stabilization, it may be a profitable crop to grow when the contracts are available to Linn county price is \$25 or more per ton. Attractive farmers with the State of Oregon at Salem.

Potatoes Remain Steady

The acreage of potatoes has declined and most yields of 1935 have been discouraging to potato growers. The completion of the Santiam highway, an all year round road into the Deschutes Valley will undoubtedly make competition for the Willamette Valley potato market more keen. No increase in acreage is recommended, although potatoes may be produced on some of the newer soils that are mellow and on many of the river bottom soils with profit. Where irrigation is possible the crop offers considerable promise. There is probably some advantage in early and mid-early potatoes that may be marketed from June to September before the main crop from the irrigated sections is available. Potato growers are urged to use disease-free seed as far as possible, and to pay careful attention to putting a good pack on the market. Katahdin is recommended as a variety for home use on heavy soils. For the mellow soils Bliss Triumph and Earliest of All are recommended for general and commercial plantings for the earlier mar-



ADDENDA

The foregoing reports are wholly in conformity with the program of the Linn county agricultural agent, which is designed to develop and improve rural conditions.

This program is formed not only from the standpoint of farm income but also from the educational standpoint. The developing interest in farming, the need for irrigation, the improvement of marketing standards, all have tended to bring requests for assistance. As farmers and city people are becoming better acquainted with the services performed by the county agent's office the duties of the county agent increase. The county agent's program is largely shaped around items in which greater interest is shown, such as irrigation, pest and disease control and soil fertility.

Of the industries dairy perhaps is the major source of farm income. To assist dairymen it is essential that, irrigated Ladino pasture be developed and that the Bang's disease program under federal regulation be continued. Some attention should be directed toward herd improvement in relation to increasing production.

The number of farms in Linn county have increased from 3,074 in 1930 to 3,849 in 1935, according to federal census figures. While the farms have increased the value has decreased from \$31,033,130 in 1930 to \$23,104,049 in 1935. With increased population and decreased valuation a large number of opportunities are developing for the improvement of agricultural crops, whether it be toward increased production per unit or toward expansion of the total production.

Lack of rainfall throughout the summer months has decreased production of many crops. With this condition prevailing interest in irrigation is increasing and has developed into a major program with requests for assistance in planning projects. Turkey production has increased, thus affording an expanded field in this type of work. Renewed activity is evident among dairymen, giving opportunities toward pasture improvement and better breeding.

Many farmers are aware that soil fertility is important and that sufficient attention by individuals has not been given by individuals. Many requests for assistance and information relative to soil improvement have been received. The return of better prices for fruits has encouraged fruit growers to carry on an improved program for disease and pest control. Low grain prices have resulted in a definite shift from grain

to seed crops. Expansion is noted chiefly in the increase of rye grass, hairy vetch and Austrian field peas. By this shift is brought about different farming conditions and request for information pertaining to seedcrops.

With increased interest being shown by rural boys and girls many opportunities are afforded for the expansion of 4-H club work. The increased interest is evident and result demonstrated by making a comparison of activities in 1934 and 1935. Four-H work occupied, the major portion of the emergency agricultural assistant's time in 1935. Linn county people have become 4-H club minded. Support of the program is given by many civic and rural organizations.

A large number of "new-comers" are moving into the Willamette Valley. To better become acquainted with farming conditions they depend upon the county agent for suggestions and information.

Rodents annually destroy thousands of dollars worth of grain produced by Linn county farmers. Poison barley is always available at lowest possible prices at the office of the county agent. A county-wide rodent control program would pay dividends.

Specialize in your vegetable garden this year. Tomatoes are a good specialty.

Strawberry growers suffered more damage last year from the spittle bug than from any other pest. Growers estimate their losses between 25 and 50 per cent of their crop, because these bugs sucked plant juices from leaves, stems and fruiting spurs, thus devitalizing the fruit. Dehydrated lime applied just as eggs of this bug hatched gave best control results.

The All-America selections should satisfy your desire for novelties. Look over the 1936 list and order a few.

More than 300 acres of red raspberries and 65 acres of strawberries were treated this year by growers for control of strawberry root weevil. Fields that were properly treated with poison bran bait last year showed little signs of weevil. However, to be safe, practically all raspberry growers repeated treatment this year. Through co-operation of the county agent, and by pooling their orders, 1350 pounds of calcium arsenate was purchased at six and one-half cents a pound. f. o. b. Portland. Charles Mitchell, Lebanon, reported that in raspberry hills where he had counted as many as 34 weevils last year, he found not a single adult weevil after applying the poison bait, which he placed about June 15. He has used the bait the last

REPORT OF CARM CROPS COM.

(Continued from page 22)

kets, and Burbanks and Netted Gems for the mid-season markets.

Hops

Linn county is well suited to hop production, but fortunately has not overemphasized that crop as much as some other counties. It appears that substantial reduction in acreage must be had before hops will again be profitable and no expansion in acreage is justified.

Weed Control Necessary

Weeds are a serious menace to the county and should receive county-wide attention. The use of a vigorous-growing, sod-forming grass like Highland Bent will help to control weeds, such as ferns, goat weed, and Canadian thistles in the hill land pastures. Crop rotation will help to control thistles and morning glory that appear to be rather serious in parts of the county. The committee urges public agencies to sow cut-over and tax-delinquent land to pasture mixtures that will permit of heavy grazing as a matter of weed control.

two years with excellent results in controlling the common weevil; but a new species has appeared to confound the experts.

Farmers are not making wide use of chemicals in killing weeds, due to excessive costs. Results, too, have been none too promising. Several farmers, however, are experimenting. The results will be watched with interest this spring.

Not a few potato growers are experimenting with the Katahdin strain. Last year some growers had trouble in getting satisfactory stands and lost their fields entirely. Others, however, report success. Seed is bringing four cents a pound, and may be secured from several growers who are listed at the county agent's office.

Certified seeds have been proven the safest to use. They not only insure greater production and cleaner crops than do uncertified seeds, but their employment enhances the market value of yields.

Alfalfa seed should be inoculated before it is sown. This has been clearly demonstrated in Linn county. Even when seed is inoculated, dry weather sometimes kills the inoculating bacteria before the seed has germinated. Plantings could often be improved by spring-toothing and cultivation to spread the bacteria from a few inoculated plants.

Linn county always presents a creditable exhibit at Oregon's state fairs. Above is a typical collection of Linn county products thus shown.

A Real Community Service

A good newspaper is more than a purveyor of news. It is a real community asset. As an example—the publishing of these reports of the Linn County Agricultural Conference. The Democrat-Herald has been published continuously for 71 years—really for 77 years, with the exception of about a year, since Delazon Smith and Shepherd put out the first issue Nov. 1, 1859, just after Oregon became a state.

All of these years the Democrat-Herald has kept pace with the growth of the community, and during the last 17 years this newspaper has stepped ahead of its field and equals those published elsewhere in cities of from 10,000 to 20,000 population.

It has been the good fortune of the publishers throughout the life of this newspaper to have been blessed with level heads, aggressive spirits and safe and sane policies. They have never been attracted from the path of good business, sound economics and those principles which make a newspaper stand for that which is best in and best for a community.

Such is the Democrat-Herald. With a sizeable investment in equipment and services, this newspaper is in a position to give its readers the best possible news services and features that make a complete, modern newspaper. Full leased wire press reports, complete coverage of the county and city news, bright features, good comics and other interesting details. And now the Five Star Weekly magazine section every Saturday adds further value.

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