

1946

Agricultural Program Conference
for

WASHINGTON COUNTY

Containing Reports of Committees
Submitted and Adopted January 24, 1946

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Proceedings

of the 1946

Washington County

Agricultural Program Conference

Hillsboro, Oregon

January 24, 1946

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Foreword

This is the report of the fourth farm program conference held in Washington County. The first was held in 1934, the second in 1936, and the third in 1941.

This conference was a continuation of the planned agricultural development that has characterized the farming activities in Washington County for many years. The 1946 conference was held as a result of the request made a year earlier when the members of the Washington County Agricultural Planning Committee asked the O. S. C. Extension Service to cooperate in such a re-appraisal of agricultural conditions and outlook as soon as possible after the close of the war.

Ten committees were set up several months in advance of the conference date which gathered data and considered all facts available before preparing reports and recommendations for submission to the final one-day conference.

The conference adopted the reports and set up a committee to see that they were assembled and published for general distribution. The reports are, accordingly, presented in full in this pamphlet with the idea that they may serve as a guide representing the best judgment of active farmers and farm leaders counseling with extension specialists in the various fields.

The information points out the trend in agricultural development of the farming industry and rural life in Washington County in the immediate post-war years.

Although many of the committee reports may appear at first to be pessimistic, and some are more so than others, it is not the intent as expressed by the various members of the committees to discourage anyone from entering the field of agriculture. It is merely intended to point out the necessity of being familiar with the respective agricultural enterprises and then having the ambition and energy to go ahead and develop this enterprise to its fullest extent. There is still room in the field of agriculture for many energetic, ambitious and trained people.

Robert H. Warrens, General Chairman
Palmer S. Torvend, Conference Secretary

Farm Crops

Cover Crop Seed Business

The county production of Austrian peas increased during the last 20 years from nothing to 20,000 in 1942, and dropped to about 8,000 acres in 1945. (The drop in production was mainly due to the support price being cut from 5c to 3½c.) The drop in price was caused when the large stockpiles of seed in storage built up and because new areas which had not been growing Austrian peas before, went into the business. Austrian peas are harder to harvest than the grain crops, requiring special equipment and care. Competition from other areas when the price goes higher is hard to meet because of higher yields in some areas than can be obtained locally. Also, in most other areas, dusting for weevil is not, as yet, necessary.

The committee recommends that since Austrian peas have built up many acres of Washington County soil in fertility, that farmers consider them more as other grain crops rather than as a special crop of which to grow large acreages. In other words, some Austrian peas should be grown on many farms, especially those with livestock, because of the value of the screenings for feed and the soil improving qualities of the crop. Austrian peas are recommended as part of the crop rotation.

Vetches

Approximately three million pounds of Willamette vetch were produced for seed during 1945 in the Willamette Valley. Two million pounds of this amount were grown on 3000 acres in Washington County. An acreage increase of 33 to 50 per cent is expected in 1946. Sales to foreign countries have kept the stockpile of seed down to a minimum. Whenever this market is cut off it is expected that a large stockpile will be built up within a year and local farmers should keep in mind that if this happens, support prices will either be lowered or taken off.

The committee recommends that all seedings of vetch for hay or seed be made with certified Willamette vetch because of its proven adaptability, more winter hardiness than the common variety, and higher yield.

Willamette Vetch Recommended

It is further recommended that local dairymen and livestock producers also be encouraged to use Willamette vetch for hay rather than the common type used by many. The committee believes that it is important to maintain at the State College certain foundation seed fields so that the identity of Willamette vetch will always be maintained and so that

there will be a place where growers who want to be certain of their planting stock may obtain pure seed.

Hairy vetch acreage has dropped from approximately 4500 acre in 1941 to approximately 150 acres in 1945. The reason for this drop was the lack of control for hairy vetch weevil, combined with poor yields experienced on some of our better types of soil.

With the development of better controls through the use of DDT dust, the committee feels that the acreage of hairy vetch might be increased but should be grown only on the thinner, low fertility valley soils or on less fertile hill lands. Local farmers' experiences definitely show that seed yields on our better soil many times are lower than on the poor soils. The expansion in acreage will be definitely tied up with the effectiveness of the dusting program in controlling weevil. Therefore, the committee recommends that (1) hairy vetch not be used on any of the better type soils and (2) that expansion be limited until effectiveness of the dusting program is known.

Hay Crops

Alfalfa acreage in the county has dropped from 4,000 acres to 1,800 acres. Factors contributing to this drop in acreage are: (1) alfalfa enriched ground has made good soil for the growing of cash crops that produced more net return during the war; (2) fields have run out and have not been replanted during this period of more profitable cash crops; (3) lack of available seed supply; (4) difficulty in obtaining lime, and (5) the small price margin of alfalfa over other types of hay.

The committee recommends that every dairy farm with suitable soil grow a certain acreage of alfalfa because it has the highest nutritive value of any hay crop grown, and is a crop that does not need to be planted more often than once in every four to six years. It fits in well with a crop rotation program and is one of the best soil building crops grown. The Grimm variety is recommended and should be sown only on ground that is well drained and limed. The committee does not recommend the planting of alfalfa for the purpose of growing commercial hay, but recommends it for home consumption. The committee believes that the most profitable utilization of alfalfa is to put the first cutting in a silo and save the second cutting for hay. Pasturing of the third cutting is not recommended because frequently this cuts down the life of the field and often kills out a stand in one season.

Other hay crops produced in the county consist of red clover, 19,000 acres; oats and vetch, and grain, 19,000 acres and miscellaneous grasses and clover, 3800 acres. This makes a total production of approximately 34,000 acres of hay in the county. Approximately 2000 to 2500 tons of hay are exported out of the county annually. The main consuming areas are Tillamook and Portland. The committee estimates the average production of hay in the county at $2\frac{1}{4}$ tons per acre or a total production in excess of 76,500 tons. The livestock requirements of the county are estimated at 55,000 to 60,000 tons, leaving an excess of 10,000 tons for emergency and carry-over.

Commercial Hay Production Not Recommended

The committee does not feel that the commercial hay market is a permanent thing and does not recommend that it be considered as such. Local producing areas will soon be competing on the market with the new irrigated sections being developed in Eastern Oregon and Washington. The committee recommends that Washington County farmers grow only the hay for their own use plus a small carry-over for emergency periods. It is not felt that Washington County is a commercial hay producing area, and that farmers cannot afford to sell the fertility of hay crops to other areas.

Grain

Barley. Barley is a recommended crop to grow with Austrian peas and it should be figured as a feed crop rather than for brewing purposes. Spring barley is recommended as a crop to be fitted into the farm rotation in order to give a spring crop. Farmers report excellent yields where barley follows crops such as peas or vetch.

Wheat. No expansion is recommended in the acreage of wheat, as it is grown mainly as a nurse crop for clover. The acreage has varied between 14,000 in 1939 to 10,000 in 1943. The importance of getting more clean seed of true varieties is emphasized. The use of sinox to clean up annual weeds in wheat fields where clover is not seeded is a recommended procedure.

Oats. The acreage of oats has been more or less stable at 30,000 acres and should be maintained as this is one of the basic feed crops for the livestock of this county.

Hops

Although the county hop acreage is small, totaling between 425 to 500 acres, the committee does not believe that this is the time to increase the acreage. The committee points out that in areas where hops are grown under irri-

gation, the yields far exceed dryland hops and that they are able to produce hops which in more normal times will seriously compete with local production. Also, the large expense involved in starting a new hop acreage at this time, in view of the outlook for the next few years is not justified. Hops should be considered only as a long time crop.

Legumes

Red Clover. The committee recommends that as much red clover as can be fitted into the farm rotation be grown, because of its value as a soil building agency and its use for hay purposes. Acreage ranged between 10,000 acres in 1941 to 11,500 in 1943. Those who anticipate the harvesting of clover seed should use the Cumberland strain as it presently, and probably for a few years to come, will enjoy a premium over the common strain. The committee points out that the production of seed from red clover is definitely connected with pollenization. The committee urges that the experiment station conduct more experimental work with the control and effect of clover insects on both hay and seed crops.

Alsike Clover. The acreage of alsike clover is very small, about 250 to 300 acres in 1941. Seed yields are low but the committee recommends that on white or wet lands where red clover cannot be grown alsike be used, especially as a hay or pasture crop.

Ladino Clover. Any farm that has irrigation should grow a certain acreage of ladino clover for pasture purposes. The committee does not recommend the growing of ladino clover for seed except as is incidental to its use as pasture. Price of seed at the present time is high as a result of government support price.

Crimson Clover. Large acreages of this crop are not generally recommended because of the difficulty of harvesting. However, a certain acreage for cover crop purposes are recommended. Crimson clover produces a good early pasture and occasionally on a small acreage basis seed can be satisfactorily harvested.

Subterranean Clover. This is a new clover which is highly recommended for hill and dryland pastures. As yet, there is practically no market outside the state for seed. However, there are many areas in the United States where the crop could be grown if they were familiar with it. It needs more publicity and trials in other areas. It is a crop for which Oregon farmers can well afford to build up a market. There are 325 acres grown mostly for seed in the county now. Because of its growing habits, the crop requires special harvest-



A Field Of Alta Fescue For Seed

ing equipment and as prices for seed decrease it can be considered more and more for pasture purposes. The committee does not recommend an attempt to grow it for seed purposes where there is much hairy vetch present because of the difficulty of separating the seed.

Forage Crops

Grasses. The committee does not recommend any increase in the acreage of chewings fescue except where it can be planted on well drained land free from other grasses such as velvet, soft chess and ryegrass. Price for the seed is certain to decline and any grower on the long-time basis can well figure on a 20 to 25 cent seed price. Importance of producing 99 per cent pure seed is emphasized, in view of the fact, that Washington County production will be in competition with other areas where pure seed is common, such as in the Union county area. Row plantings with rows 36 to 42 inches apart, on well drained soils that can be worked early in the spring, have given better results than solid plantings.

Consistent annual use of a fertilizer program is essential to successful seed production. An application of 200 pounds of phosphate in the fall and 200 pounds of nitrogen in the spring is generally recommended. The spraying of first year stands at least with sinox to control annual and broadleaf weeds is recommended, in order to give the grass a better start. The committee recommends that the Ex-



Meadow Foxtail Growing Near Gaston

periment Station conduct more experimental work regarding the life cycle and recommendations for the control of the sod web worm, which has caused some crop losses in the county.

Red Creeping Fescue. This grass is similar to chewings fescue except for its underground or creeping growth habit. It produces a more palatable type of pasture. It is a crop that definitely gives better yields when planted in rows. A demand for this type of seed, is increasing slightly and the outlook indicates it will continue to do so. However, the acreage planted is also increasing and the committee feels that it is somewhat ahead of the demand. Planting of this crop should also be on well drained soils where cultivation can be done early in the season and where there is freedom from other grasses which interfere with seed cleaning.

Alta Fescue. The committee does not recommend a general increase in acreage of alta fescue for seed as there have been large increases in other areas of the state which already are producing seed. New acreages for pasture production are recommended and when it is profitable for these plantings to be used for seed it should be only incidental to the pasture. The committee pointed out for those beginning to grow this crop for seed that clean seed brings a premium price.

Canary Grass. Increased acreage is not recommended except on swamp land where water stands all year round.

Meadow Foxtail. This grass will stand as much water in the wintertime as canary grass but is not recommended for ground that is under water the year round. This grass probably has more opportunities than many that are grown here at the present time, but requires development of a market. There are large areas in the United States where it can be used. It is a wetland grass and is recommended on that type of soil. For seed production it can reasonably be expected to yield in the neighborhood of 100 pounds per acre. Special care in harvesting is essential to good seed yield. Combining direct and drying the seed on canvas has proven quite satisfactory. Binding with a binder is also a good method.

This is a crop that offers considerable opportunity for expansion, both for pasture and seed purposes. Seeding is not recommended with a nurse crop and should be planted either before the middle of October or in the spring when a firm, well prepared seed bed can be prepared. Importance of shallow planting cannot be over-emphasized. The committee recommends that this crop be considered for all farm land that is too wet to be profitably put into any other type of crop. Seed yields on well drained upland ground have not been satisfactory.

Common Ryegrass This crop should not be grown where other types of grasses can be profitably grown. However, the committee recommends that it be considered for swales or wetter lands where the yields from grain and other crops is not too satisfactory. Present price support will probably continue to stimulate added interest in this crop.

Perennial Ryegrass. English Ryegrass is recommended in new pasture mixtures and when grown for seed production must be planted on land that is free from the common type and also the other types of grasses. Expansion is not recommended except on land where it fits into the crop program such as shallow flat, wet types of soil.

Orchard Grass. Orchard grass is a very widely used grass so far as the national picture is concerned. However, it has not enjoyed as favorable a seed market as other grasses. Yields have been quite low. It may be considered as another diversification for a seed grower and may be planted either in rows or solid stands.

Non-Shattering Oat Grass. Approximately 90 acres of this crop are being grown in the county now. It does best on our red hills or dry land. Prospects for this crop, both for seed and cover crop purposes are good for the next 10 years. The committee recommends it as one with possibilities for increased acreage. Best results have been obtained where it has been harvested with a binder. In addition to seed yields, this is a grass which will produce a large amount of pasture under dry land conditions. It is not recommended where land is irrigated or on the better valley type soils.

Fiber Flax

Fiber flax production in Washington County will be limited by the plant facilities which have thus far not been used to the maximum. The plant can normally be expected to handle between 1500 and 1800 acres annually.

Corn

Corn is a crop that could fit in well on small farms because it can be handled and harvested with a minimum of equipment. Corn should be considered on every farm where it can be fitted into crop rotation as a spring cultivated crop, grown primarily for silage purposes. The committee recommends some of the early hybrid varieties for grain purposes.



Hybrid Varieties Yield Best Returns

Potatoes

The committee does not feel that Washington County is particularly suited to the production of potatoes because the yields are not high enough to compete with other potato producing areas. Insect problems are serious and hard to control. Outside of a small production for seed purposes and for some home consumption, commercial potato production is not generally encouraged.

Miscellaneous

The committee reviewed the reports obtained from the Oregon state seed laboratory and feel that its methods of making germination counts and the long time between the sampling and date when the report is received, destroys the orderly marketing of Oregon legume seed crops, and will seriously curtail an important business. The committee does not believe that the methods of taking germination count should be changed until there is experimental evidence to justify the change. Since the laboratory is the nerve center of the whole seed business of the state, and in view of the fact that probably more seeds are tested in the laboratory than any other laboratory in the country, the committee thinks that this is a matter that requires urgent consideration.

Commercial Truck Crops

In the last few years the production of vegetable crops in Washington County has expanded considerably. Part of this expansion was brought on by the war needs. The crops have been marketed through local canneries for canning and freezing purposes and on the fresh market in the towns of the county and in Portland.

Among the crops of importance in the county are:

Cannery peas	1400 acres
Lima beans	400 acres
Snap beans	300 acres
Carrots	50 acres
Corn	650 acres
Spinach	25 acres
Squash and pumpkin	200 acres
Tomatoes	100 acres
Lettuce	25 acres
Celery	15 acres
Onions	750 acres
Garlic	50 acres
Cabbage	40 acres

A few other miscellaneous crops.

Between the years 1934 and 1945, the acreage in Oregon

has increased over five times. Now it is in excess of 77,600 acres in the state.

Soils for vegetable crops should be deep, fertile, have moisture holding capacity, and be easily worked. Where available, irrigation is recommended.

Commercial vegetable acreages should not be planted except when market outlets have been arranged in advance and then only on soils where high production per acre can be obtained. Importance of producing quality products can not be over emphasized and this necessitates careful disease and pest control and selecting suited varieties. The importance of barnyard manure as a fertilizer in the production of most truck crops should be stressed. Cover crops are recommended where manure is not available. Barnyard manure or straw up to twenty tons per acre is desirable.

In the production of many of these crops, labor costs are the biggest item. Unless the grower can obtain better than average yield, has had experience in production of these crops, or is willing to learn by starting in a small way, his chances for success are doubtful.

Quality vegetable crops can be produced in the county with spring plantings arranged so that harvesting these crops will not interfere with other harvest operations. Limited acreage of truck crops, especially on dairy or livestock farms, may provide an additional source of cash income.

Washington County Walnut Orchard



Horticulture

Place Of Horticulture In The County

Horticulture, which represents about 9 per cent of the total agricultural income of the county, has been expanding more or less at a steady rate in the past 15 or 20 years. At the present time, horticultural crops occupy 18,590 acres in the county. Within this acreage there is a variation from 1 or 2 per cent of non-bearing stock to as high as 20 per cent, depending upon the crop.

The committee, in considering horticultural questions, points out that the Pacific Northwest, particularly the Willamette Valley and Washington County, are well adapted to the growing of many horticultural crops, being able to produce a quality which is superior to that produced in many other areas. In many commodities the yield exceeds normal production in other sections of the country.

Industry Outlets

Canning and the frozen packaging of horticultural crops are the important market methods. The frozen packaging will increase as it has definitely been proven during the war period that this form of processing is an efficient, attractive, and satisfactory method of handling.

The committee believes that the Willamette Valley, particularly Washington County, has an opportunity for continued expansion and development of horticultural crops. However, such development is hinged directly upon the number of processing plants available to handle products, the care which growers exercise in continuing to produce quality, and the available labor and transportation facilities. Commercial canning and freezing companies are now expanding or building some new facilities in the county.

There are many hazards in the horticultural game including weather, disease, pests, markets and labor. In older marginal orchards the trees might, in many cases, be pulled out rather than for the operator to try to bring them back into economical production. New operators are urged to take advantage of every opportunity possible to acquaint themselves with the business before actually purchasing or investing money in a horticultural enterprise and, the committee believes, that the best and cheapest method of obtaining this experience is to work for a known successful operator for two or three years. It is also pointed out that in the last three or four years labor costs have, in many cases, trebled and often the workers have not been as efficient as in pre-

war periods. This item alone has greatly increased the cost of production. Land prices now are high so that new operators will have to service either a large debt or have a high investment per unit.

In older orchards, where trees are crowded, growers could well consider the removal of some of the trees. The committee indicates that there are many instances in the county where growers have grubbed out half their trees when they became too close together and have increased both the size of their product and the yield by the second or third year. This has usually been done by taking out every other row on the diagonal.

Soil Depth A Factor

The soil for fruit and nut trees should be eight to ten feet in depth and well drained. Trees will grow and sometimes yield profitably on soils of less depth but growers who have shallow soils, especially those underlain with rock, hardpan, or high water tables, usually run into difficulties early in the life of the orchard. These troubles show up more during the dry summer seasons. The committee emphasizes that some orchards, at present, are not planted on soils suited to tree fruit crops and sooner or later it will be more profitable to dig out the planting than to let it run down and be neglected.

Cover Crop Recommendation

All orchardists should maintain an annual cover crop for fertility program. The committee recommends a combination of Willamette vetch, winter barley, or Austrian peas, seeding between 100 to 125 pounds of the mixture per acre. In some cases, particularly on soils where cover crops can be worked under early, abruzzie rye and early Austrian peas seem to make an excellent combination.

Commercial fertilizers are recommended in orchards where it is difficult to get a good growth of cover crop. Straight nitrogen fertilizer or a 16-20 combination of nitrogen and phosphate applied at the rate of approximately 200 pounds per acre seem to give the needed boost in most instances. Some growers also experience good results with applications of landplaster on legume crops. Heavier fertilizer applications have had varying degrees of success — often uneconomical.

Fruit Varieties

Prunes. In Washington County the acreage of prunes has dropped to 1200 acres since 1930 when there were over 3400 acres grown in the county. It is felt that there is some room for expansion in prune acreage. Many of the orchards

are old and should either be thinned or taken out altogether. Also, a number of orchards have been seriously neglected and can never be brought back into production. This, together with decline in acreage which is occurring generally throughout the state, would justify planting to maintain the acreage.

Pruning, spraying, and good orchard management are definite essentials to the production of a satisfactory crop. At least three, and in some cases four, sprayings or dustings are necessary.

Peaches. Peaches have expanded from 396 acres in 1930 to 575 acres in 1945. Approximately one-third of this crop is sold for canning purposes and the remainder is sold on the fresh market, either through roadside stands or in the Portland area. The price for fresh market fruit has nearly always, especially the last few years, been more satisfactory than for canning fruit. This difference has increased because peaches for canning purposes have been priced lower by price control regulations than fresh marketed fruits. Therefore, the growing of canning peaches alone has not been a profitable venture. Growers feel that it costs between \$70 to \$75 per ton to produce peaches on the present scale, while the price for No. 1 peaches has been set at \$62 per ton. The free-stone peach which is preferable for canning and freezing purposes, as well as the fresh market, has developed a wide popularity. Growers contemplating setting out new plantings should contact their canneries or buyers to determine which variety they want as the variety for canning purposes in many cases is not the one that will be used for freezing or for fresh market. The committee, on the other hand, does not believe that growers should normally sign long-time contracts.

On a whole, the committee points out that the peach outlook, even though prices have been reasonably high for fresh fruit during the war, will be only fair in the next few years. Peach trees reach bearing age quickly so that new plantings soon affect the supply. Therefore, changes from surplus to scarcity and vice versa, occur in a rather short cycle. Also, because of their perishable nature, peaches have limited areas of distribution.

The expansion of frozen food packaging will likely improve the market outlook to a certain extent. However, any expansion is dependent on plant capacity and should only take place as facilities to handle the crop are developed. The life of a peach orchard, on an average, is about 15 years. The

committee does not believe that a grower can depend on peaches as his only source of livelihood and points out that on a farm where other horticultural crops are produced peaches offer another opportunity for diversification, spreading out the labor requirements and making for better utilization of equipment.

Normally, peaches in Washington County are sprayed between seven and eight times annually. Peaches are best adapted and grow faster on lower valley soils where there is good drainage and reasonably high fertility.

Cherries. The committee feels that there is some room for expansion in the acreage of cherries, although this should be kept in line with local needs, handling facilities and canneries.

Cherry fruit fly has given considerable trouble the past few years and cherries will require approximately four sprays annually.

The committee wishes to point out to new growers that the selection of adapted and marketable varieties which are disease free is very important. It has been found that many cherry plantings are not producing well because of virus diseases. A long period of time is required for cherries to come into bearing and the harvesting period is short. Syneta beetle is one of the serious pests on cherries. Washington County cherries are marketed in Hillsboro, Forest Grove, and Portland.

Apples. Commercial apple production is not encouraged in Washington County because the committee does not believe that we can compete with some of the other commercial apple growing sections of the state and northwest.

Filberts. Filberts are one of the new orchard crops that have assumed importance in the state as well as in Washington County. Oregon is one of the few areas where commercial filbert production seems to be adapted. The acreage has increased from a few hundred in 1930 to about 4500 in 1945. This compares with the present acreage in the state of over 15,000. There is still considerable planting to come into bearing, although approximately 75 per cent is considered in bearing now. Filberts are a comparatively new commodity to the American consumer and what the ultimate consumption will be is difficult to determine.

The committee urges the importance of planting filberts only on the best adapted soils. They point out that one of the trends in the filbert industry the last few years has been an accelerated planting without much regard for soil adapt-

ability or economy of production. The committee emphasizes the importance of having filberts on land where cost of production can be kept at a minimum and a large enough acreage so that mechanical means of harvesting can be employed. Small acreages are discouraged because of the excessive cost of the equipment and difficulty in using mechanical pickers and other labor and expense saving methods. The committee feels that before the acreage can be justifiably increased, more markets must be developed.

Filberts are a reasonably easy crop to grow but the committee points out that more and more disease control measures, such as spraying and dusting, will need to be adopted as the crop acreage increases because of the introduction of new pests and diseases.

Walnuts. The committee believes that there is still a place for a limited planting of walnuts on adapted soils. The importance of deep, well drained soils and healthy planting stock cannot be over-emphasized.

Walnuts are a crop which requires a long period of time between planting and economic production. Two or three sprayings or dustings will be required annually.

In general, on all orchard crops, new growers, must figure on an investment of between \$600 and \$900 in spraying equipment and \$200 to \$500 in dusting equipment. This is in addition to cultivation and tillage implements.

The committee points out the importance of growing high quality, well graded crops. Growers feel that standards of grade need to be more strictly enforced and that much of this responsibility rests on the growers themselves.

Small Fruits. Small fruit crops have for many years been an important part of Oregon's agriculture. In recent years there has been a downward trend in acreage in spite of high prices and good demand. This has probably been due primarily to shortage of labor and increased cost of production.

Small fruit crops grown in the Willamette Valley include strawberries, raspberries, loganberries, boysenberries, gooseberries and grapes.

Peak production in small fruits was reached in Oregon with 25,000 acres in 1941. Up to that time, there had been a steady increase year after year, but in 1942 a decline in acreage resulted in an 8,000 acre drop in the next two years. In 1944 there were 16,600 harvested acres.

Present indications are that acreages of small fruits will increase again with the return of a labor supply and develop-



Strawberry Acreage In County Will Increase

ment of markets, through frozen food preservation.

Strawberries. Strawberry acreage in Washington County in 1945 has decreased to 1400 harvested acres, less than one-half of the 1939 acreage. Even with this decline, strawberries continue to be the most important small fruit crop in this county. Washington County for many years led the state in production of strawberries and at present is second only to Marion county.

The acreage does not always foretell the tonnage that will be harvested nor the total returns to the farm. Yield per acre, coupled with cost of production and market price, determine financial success of the enterprise. The operator must be able to produce his crop with better than average efficiency if he wishes to survive.

Commercial strawberry acreage in Oregon and Washington County:

Year	Oregon	Washington County
1924		500
1929	10,500	1584
1934	8,500	2008
1939	11,300	3000
1940	12,500	3250
1941	13,500	3400
1942	12,500	2750
1943	8,000	1800
1944	6,000	1400
1945	6,600	1400

Some growers prefer to plant strawberries $3\frac{1}{2}$ feet by $3\frac{1}{2}$ feet instead of $3\frac{1}{2}$ feet by $11\frac{1}{2}$ feet. These

growers then train runners into rows to fill in space. This method requires about one-half the number of plants per acre and reduces initial cost, but increased labor is required to train runners into rows.

It is recognized that there are variations in practices on individual farms. Some growers figure only two hoeings a year while others figure four or even six. Some growers cultivate as few as four times and some as high as six. Some growers find it necessary to dust for spittle bug more than once during the year. The committee feels that \$25. an acre is not an excessive charge for fertilizer in establishing a new planting. Inasmuch as barnyard manure is not available in many cases, its equivalent in green manure crops and commercial fertilizer have been figured. The harvesting cost in the following estimate was figured on a basis of 3000 pounds per acre. With a lighter crop the picking cost would be less while with a heavier yield it would be higher.

COST OF ESTABLISHING STRAWBERRY PLANTINGS

Plants set $3\frac{1}{2}$ feet by $11\frac{1}{2}$ feet, 8,000 plants per acre:

Plowing	\$ 3.00
Harrowing and discing (one time)	1.50
Marking	2.00
Plants (8,000 @ \$15 per M.)	120.00
Setting (4 days)	24.00
Cultivation (5 times @ \$2.25)	11.25
Hoeing (3 times @ \$18.)	54.00
Cutting runners (two times @ \$4.50)	9.00
Fertilizer, green manure and commercial	25.00
Taxes	3.00
Interest on land (\$150 @ 5%)	7.50
Weevil baiting	5.40
Total	\$265.65

Second Year

Cultivating (6 times @ \$2.25)	\$ 13.50
Hoeing (4 times @ \$18.)	72.00
Cutting runners (2 times @ 4.50)	9.00
Weevil bait and labor	7.80
Dust for spittle bug (60 lb. rotenone per acre @ 10c)	6.00
*Applying dust	3.00
Fertilizer (Commercial)	12.00
Taxes	3.00
Interest on land (\$150 @ 5%)	7.50
Total	\$133.80

* Occasionally two dustings are necessary.

Assuming that three crops of berries will be the the life of the planting, we can divide the cost of establishing the planting by three, making an annual overhead of \$ 88.55

Annual cost to picking 133.80

Total annual cost to picking 222.35

Picking (1½ tons @ 4½¢ per lb.) 135.00

Yardman (4 days @\$8.) 32.00

Harvesting Cost 167.00

Total Annual Cost \$389.35

The table below shows the yield as a decisive factor in cost per pound.

PRODUCTION COST PER POUND OF VARIOUS YIELDS

Yield per acre pounds	Cost per acre dollars	Cost per pound Cents
1000	299.35	29.93
2000	344.35	17.22
3000	389.35	12.98
4000	434.35	10.86

Recommendations:

1. There is room for an increase of strawberry acreage in the county up to the 3000 acres we had in 1939.
2. New growers should be careful to choose ground that is located favorably as to soil, drainage, and freedom from disease in starting a strawberry enterprise.
3. That proper disease and insect control measures be practiced to keep down plant diseases and pests. It is recommended that plants be topped immediately after harvest, leaving about one row in twenty to trap crown borer. At a later date the plants in the trap row should be removed and burned to destroy the crown borer.
4. A dusting program should be carried out to combat spittle bug.
5. Prospective strawberry producers are advised to contact several experienced growers before starting strawberry growing. Experienced growers can give them much valuable information which may bring out some of the problems and pitfalls in the business as well as the pleasant phases of the work.

6. Quality production should be stressed—through high quality we will be able to stand competition from other areas.

7. There is a need for improvement of planting stock to eliminate crinkle and yellows diseases. It is recommended that planting stock be clean and healthy and Oregon plants are preferable. Improved Oregon or Marshall is recommended as the one standard variety.

8. The committee is not in favor of "open-end" contracts.

Black Caps. Washington County, with 600 acres, is second in the state in the production of black caps. The acreage of black caps in the county increased steadily up to 700 harvested acres in 1942, with a slight decline since that time.

Black caps are more limited in their market uses than red raspberries. They are used mainly for flavoring and coloring and do not compare with the red raspberry in eating quality. They do, however, have the advantage of maturing late enough in the season to insure harvest during good weather.

Harvested acreage of Black Caps in Oregon and Washington County:

Year	Oregon	Washington County
1939	2125	480
1940	2300	550
1941	2600	600
1942	2900	700
1943	2800	650
1944	2600	825
1945	2600	825

COST OF PRODUCING BLACK CAPS
PER ACRE, Planted 5 feet by 9 feet:

First Year	
Plowing and working land (1 day)	\$ 4.50
Marking and cross marking (1/2 day)	3.00
Plants (1100 @ \$16. per M.)	17.60
Setting plants (2 days)	12.00
Working land (6 times) (2 days)	12.00
Hoeing (1 time) (1 day)	6.00
Taxes	3.00
Interest (\$150 @5%)	7.50

Total \$65.60

Each Crop Year	
Cutting old canes and trimming	\$ 20.00
Hauling and disposing of canes	6.00
Discing and working	12.00
Hoeing (2 times) (2½ days)	15.00
Tipping new canes (2 times) (2 days)	12.00
Fertilizer (commercial)	12.00
Interest (\$150 @ 5%)	7.50
Taxes	3.00

Total	87.50
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Five crop years (each year)	87.50
Spreading first cost over 5 years	13.12
Picking (1½ tons @ 5c per lb.)	150.00
Yardman (4 days@ \$8.)	32.00

TOTAL COST PER ACRE	\$282.62
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Recommendations:

1. Small increase in acreage on suitable soils. These are the lighter, well-drained soils.
2. Fertilizer program of cover crop and commercial fertilizer is recommended. Cover crop should be sown very soon after harvest. Commercial fertilizer should be applied as early as possible in spring. Commercial fertilizers alone are satisfactory if there is sufficient humus in the soil.
3. Black Caps should be tipped between May 15 and June 15, or about three weeks before harvest.
4. Tip in young plants for growers own use or for sale of plants.
5. The committee stresses the importance of selecting disease free planting stock at all times.

Red Raspberries. The committee does not at present recommend an increase in acreage of red raspberries. The berries can be grown and there is a demand for them, but high cost of production and picking makes the crop unprofitable.

The acreage of red raspberries in Washington County has decreased steadily from a peak of 584 acres in 1929 to less than 100 acres in 1945.

Red raspberries should be grown in the best well-drained soil types and those that are not heavy. Cultivation should be shallow so as not to injure the feeder roots which grow

close to the surface. Injury to the roots will result in a lower yield per acre.

Boysenberries and Youngberries. The Boysenberry and Youngberry acreage in the county has remained about 300 acres for the past 10 years. In 1944 Washington County produced about 12 per cent of the state acreage of these berries. Cost of establishing a planting is greater than for raspberries as posts and wire are required for training. Shed work is also heavier than in red raspberries. Boysenberries are preferred over youngberries.

There should be no increase in acreage unless a demand justifies it.

COST OF ESTABLISHING BOYSENBERRIES AND YOUNGBERRIES PER ACRE

Planted 8 ft. by 9 ft.:

First Year

Plowing and working land (1 day)	\$ 4.50
Wire (200 lbs. of No. 12)	11.00
Posts (96 @ 25c)	24.00
Stakes (90 @ 10c)	9.60
Plants (650 @ \$60. per M.)	39.00
Setting posts (3 days @ \$6.)	18.00
Setting plants (1 day)	6.00
Cultivating	7.50
Spray (once with lime-sulphur)	5.00
Hoeing (1 day)	6.00
Taxes	3.00
Interest (\$150 @ 5%)	7.50

Total \$131.10

Each Year

Taking out old canes	\$ 16.00
Training	45.00
Repairing posts and wire	5.00
Spraying (2 times)	10.00
Clipping young growth and ends	8.00
Hoeing	12.00
Grapehoe and cultivating	12.00
Moving new vines around	6.00
Fertilizer	12.00
Interest (\$150 @ 5%)	7.50
Taxes	3.00

Total \$136.50

Picking (2 tons @ 3½c per lb.)	\$140.00
Yardman	32.00
Harvesting Cost	172.00
Figure original planting to last 10 years	13.65
	<hr/>
Total Annual Cost	\$322.15

It will be noted that the cost of establishing, maintaining and harvesting strawberries, black caps and boysenberries has increased about 300 per cent when compared with costs of 1936. It is not the intention of the committee to attempt to set up figures which will be accurate in the years ahead. The above figures are based on actual costs and estimates of several Washington County growers.

This cost estimate has omitted several variable factors which should be charged against the cost of producing berries. However, they vary so much on each farm that they can not be included in a general cost statement. These include such items as maintaining proper equipment, packing sheds, carriers, transporting berries to market, transporting pickers to and from farm, camp grounds, toilet facilities, etc. In addition, no charge has been made for the owners managerial effort which certainly should be charged against cost of production.

Land Use

The land use committee has considered the following questions pertaining to utilization of land in Washington County: Tualatin basin flood control, forest land classification, available land for farms, erosion, and general weed control.

Tualatin Basin Flood Control

According to surveys made, the Tualatin and its tributaries affect about 135,000 acres of Washington County land. Of this amount, 40,000 are subject to some danger because of improper drainage and flooding, and 24,000 acres are seriously affected almost every time there is high water.

These flood lands represent a major farming problem. The cost of operation is often high in proportion to return and there is considerable difficulty in maintaining soil fertility.

Two soil types in the main predominate these flood land areas. The wetter portions follow the Wapato series, and the Chehalis soils, usually a little higher, are our recent and more productive type of soil.

Plan For Flood Control

The army engineers have made a detailed study of the area and the land use committee believes that their recommendations and the program would very materially help this flood area and favor the development of the project.

In addition to these recommendations, the committee points out that until such flood control project is inaugurated and effectively working, certain acreages of this land can be planted to meadow foxtail, either for seed or pasture purposes, and some of the higher lands to alsike clover, and where the overflow water drains off in a rather short period of time, where irrigation is available, ladino clover.

The committee believes that the annual plowing of this type of land increases the erosion, is expensive and, therefore, the seeding of some more permanent types of crops other than spring grain is desirable.

These areas also offer a serious problem as far as noxious weed control is concerned. More permanent seedings, particularly of grasses where they will grow well, the committee believes helps control the weeds.

Forest Land Classifications

The land use committee generally believes that in the most rugged sections of the county which have in recent years been logged there are areas that should be seeded

back to trees to allow them to grow another crop of timber as quickly as possible. There are other areas suited to grazing, and perhaps a few areas in some of the shoestring valleys which are well enough located to make small, profitable, farm units. Therefore, the committee urges that the county court go ahead with their proposed land classification program. The committee points out that in most cases there is little land in these areas so situated as to be desirable for agricultural development. However, there are areas where grass, either for fire prevention alone, or in some of the better locations for grazing, can be grown to advantage until a new crop of trees can be started. Fires must be kept from these areas if the growing of trees is to be practical. The grass, in addition to perhaps providing small revenue from the land while the trees are getting started, will be a definite factor in cutting down on soil erosion, developing more moisture holding capacity during the summer months, and providing the right varieties of grass are seeded, serve as fire breaks. The committee urges the reseeding of these burned-over areas immediately after fire.

Weed Control

The committee recommends that Washington County farmers make the most possible use of the weed control practice as provided for under the AAA program. Also, that grass seedings of sod-forming grasses may be made where needed to control larger areas. Alta fescue and chewings and red creeping fescue are recommended, using them as pasture.

Available Land For Farms

The land use committee points out that there is very little new farm land available in Washington County except as larger farms are cut up into smaller ones and occasionally in some of the shoestring valleys. The committee points out however, that owners of uncleared land in the valley may well consider the possibility of clearing up stumps, brush, and in some cases even timber land which is adjacent to cultivated land, as they believe the cost of clearing land has not increased nearly in proportion to the price of purchasing cultivated land. In other instances, the committee points out, much better use can be made of poor stump and brush land pasture by clearing it and seeding it down with recommended grass and legume mixture. Additional returns in the form of pasture from this type of operation will greatly

exceed those received from natural stands or uncared for pastures.

Erosion

The committee feels that the farmers in Washington County who have had land subject to erosion should seriously consider methods of controlling this annual loss in crop land. The committee points out that unless such control is established, much of our productive hill land will eventually become worthless due to the washing off of the topsoil. The committee recommends that more use be made of annual ditches and that these be plowed generally across the slope of the hill rather than up and down as is done in many cases. On steeper slopes the committee urges the establishment of grass seeded strips at intervals across the grade to assist in controlling erosion, and on very steep land they recommend the seeding down to permanent pasture with good varieties of grasses and legumes. The committee also indicates that seeded waterways can be made to more than pay for themselves with the crop they produce.

The land use committee recommends the early completion of the land classification map of the county. Land classification has been carried out in the Dixie Mountain, Pumpkin Ridge, Green Mountain, Manning-Strassel, and Sunset Camp areas.

Specialty Crops

Oregon Situation

Oregon is steadily becoming a source of supply for nursery stock for the nation. By reason of a favorable climate, Oregon is in a better position to supply national markets in certain lines of stock which can be produced more quickly and of better quality, in spite of higher labor costs and freight rates in this area.

At present a large percent of Oregon's nursery stock is marketed outside the state. If we can continue to produce a high quality stock, this market should continue and even increase. There is no large amount of foreign competition except possibly in hyacinth, tulip, and narcissus bulbs from Holland and lily bulbs from Japan.

The nursery business is now experiencing a boom period. The heavy demand for both fruit trees and ornamental shrubs coupled with a short stock of these has created a high market. A surplus of fruit trees, especially peaches, is likely to develop more easily than in most nursery stocks.

Good Outlook For Nursery Stock

The large scale home building program to take place in the next 10 years will provide a great outlet for ornamental trees and shrubs. Present low stocks probably will not supply the demand for several years. However, it is the opinion of many nurserymen, that a new home is not a potential outlet until two or three years after it is built. This will mean that stocks being started now by nurserymen will find a ready market when they are ready for sale in about five years. There is one point to consider, however, general good times produce a good market for nursery stocks, but in poor times there is practically no market.

In general the postwar outlook in nursery crops is encouraging.

Washington County Situation

There are about 550 acres of specialty crops in the county, representing an income of \$500,000 annually, which is about 12 percent of Oregon's four million dollar annual income from these crops. Climate and soil conditions here are conducive to growing of these crops, but a new grower should be sure of a market for his product before he produces it. The principal speciality crops in the county are as follows:

Nursery crops	150 acres
Bulbs and corms	145 acres

Holly 200 acres
Greenhouses 300,000 Sq. ft.

Problems for New Nurserymen to Consider

Previous experience in nursery work is essential to anyone entering the nursery business. It is the opinion of the committee that a beginner should serve three to five years of apprenticeship, working for an established nursery, before he ventures into the business for himself.

A tremendous investment is required except for those who start in the business on a very small scale. There are three ways of getting into the business:

1. Serve an apprenticeship and gradually work into a nursery business.
2. Start with a sales yard and gradually work into a nursery business.
3. Have sufficient money to finance the deal and have a ready market for the product.

In all cases, previous experience is the first factor to consider. Entering the nursery business by the apprenticeship method is the most sound, as a person not well adapted to the work can easily get out of it without great financial loss. For the person who has nursery experience, but has limited capital, the sales yard is probably his best means of breaking into the nursery game. His expenses are small and his turnover is rapid. In case the individual does have sufficient capital and a ready market to start, then if his production efficiency is above average, he should succeed.

Capital Requirements

The committee feels that capital requirements should be sufficient to finance 50 per cent or more of the farm, equipment, planting stock, operation costs, and living expenses for the operator for three to five years.

Most nursery crops take from two to five years to get a saleable product and some as long as 15 years. Often a market is not available when the crop is produced. In the retail field, the cost of establishing a name in the trade circles is high. Much expense is involved in advertising, personal contacts, mailing lists and catalogues.

In producing for out-of-state markets many obstacles are encountered. Freight rates are high to most out-of-state points. Shipments of balled and burlap stock is limited to regions west of the Rocky Mountains. Also, the shipper may get many complaints because of improper handling, storage, transportation, etc.

Many problems are at present encountered from fungus

and virus diseases and also insect pests. The potential disease and insect problems are constantly increasing with development of rapid methods of transportation between all parts of the nation and world. Shipping home of all kinds of plant material by service personnel scattered over the globe, may result in the introduction of new plant diseases and pests.

Recommendations:

1. The committee recommends a normal production of nursery stock and increased production of ornamental stock to meet demands.
2. Quality production should be stressed at all times.
3. Fruit trees should be grown on fairly sandy soil firm enough to hold moisture. Evergreens must have a soil with enough clay so that they will ball.
4. Fertility of the soil should be kept up. Green manure crops and commercial fertilizers seem to be the most satisfactory method. There is need for more experimental work of fertilization of nursery crops.
5. There is need for more experimental work in nursery crops, and more extensive means of carrying the results of that work to the grower. This would help greatly in the disease control program.
6. One man can handle from three to 10 acres of nursery crops by hiring seasonal help.
7. A rotation is desirable for nursery crops.

The nursery business is highly specialized and success depends largely on resourcefulness, energy, and initiative of the operator.

Holly. Washington County has much to offer anyone wishing to produce holly for the market. This county is in the center of the holly producing belt which lies west of the Cascades from southern Oregon to British Columbia.

The future holly market is unlimited; neither wholesale nor retail markets have been one-fifth supplied.

A ten year old holly tree should produce about ten pounds of holly, at 15 years is should produce about 25 to 30 pounds per year. If the holly is properly handled so that a net profit of ten cents per pound could be realized, 1000 trees could produce \$2500 to \$3000 a year by the fifteenth year, and this should double in the following six or seven years.

Holly is marketed as cuttings for the wholesale trade

and as wreaths, window and door frames for the retail business. Retail prices have recently been 75c per pound while wholesale prices are around 45c.

The committee recommends:

1. That a sight be chosen which is well drained, near a source of suitable labor and in a district possessing desirable living conditions. Holly is a slow growing crop requiring a long period of time before substantial returns are realized.
2. That trees be planted 20 feet apart or 100 to the acre. The average cost of three year old trees in 1946 is \$2 to \$3.
3. That the grower provide himself with suitable equipment including a light weight crawler type tractor with a three-section spring tooth harrow or a light double disc. Holly is shallow rooted, and cultivations should not be too deep as excessive root injury will force more berries and reduce the foliage.
4. Before buying or planting trees, prospective grower's should consult three or more successful holly producers and also contact the State Department of Agriculture in order to gain all the first hand information possible.
5. If holly is to be the major crop, one must have enough money to buy and prepare the land, buy and plant the young trees, and money enough to take care of them for at least 10 years before deriving any income therefrom.
6. Holly is attacked by several diseases and pests, most of which can be eliminated by pruning and spraying. At least one good spraying a year is good insurance on such a valuable crop.

Bulbs and Corms. There were about 145 acres of bulbs and corms in the county in 1945. Bulb growers are being very cautious at present not to expand acreage with resulting over-production. Present uncertainties regarding imported bulbs from Holland and Japan make future markets unpredictable. The threat of imports from foreign countries, the low cost of foreign production, and the large number of growers in the Northwest, would indicate that growers should be prepared to take a lower price than they are now receiving. The committee does not encourage increased acreage of bulbs at this time.

Dairy

General Dairy Outlook

The dairy committee has outlined some of the major problems of the dairy industry in Washington County and has made suggestions and recommendations as to how these problems might best be met.

This report is prepared with the realization that a dairyman is competing with all other producers of food commodities for their fair portion of the American people's diet. According to national population figures, there has been approximately a 10 per cent increase in potential milk consumers during the last decade. If American people consume dairy products at the rate recommended by nutritionists, there would still be room for considerable expansion in the dairy industry. However, the trend has always been that when family income drops, or during depression times, for the consumers to cut down first on milk and dairy product consumption. In other words, consumption of dairy products is very closely associated with family income level. Because of the present low prices for dairy products, in proportion to other food commodities, the committee urges a continued increase in educational information regarding the food value of milk and milk products. Under the present price schedule they are one of the cheapest sources of food energy.

In making a bid for the dairymen's share of the consumer's dollar, the committee also points out (1) that economy and efficiency of operation are essential; (2) that quality of the products, stemmed with a persistent, well-directed advertising program, can do much toward stimulating such an increase in demand for dairy products.

The committee believes that the present butter shortage, due to the price differential between butter and other dairy produce will not persist for a prolonged period of time. Milk production will probably not exceed demand in the next two or three years. During the war period there has been about a 30 per cent increase in the fluid milk consumption. The present dairy cow population of the county is 18,500 as compared with 15,000 in 1935.

Feed Supply And Dairy Cattle Numbers

At the present time the livestock feed supply is short. This shortage is especially true in such commodities as protein concentrates and small grain. The total livestock numbers has increased slightly the past two or three years. However, this area has depended upon importations of concentrates from

other areas for a number of years. The grain supply is not expected to remain short for any long period of years. Nevertheless, in the opinion of the committee the present dairy population of 23,000 head of young stock and milk cows need not be reduced in numbers except as this reduction is made by the culling of poor producers. The committee urges dairy-men who have low producing cows, that are not much more than paying their way at the present time, to market these animals when the price of beef is good.

The committee believes that the practice of growing hay and selling it outside the county is not in keeping with good agriculture but rather that hay should be fed where it is produced so that the fertility can be put back into the soil.

The introduction of the pickup hay baler has been a popular development to the dairymen as well as the hay producer, but, by reason of the shortage in number and the lack of labor, it has been one of the factors in causing more poor quality hay to be made. The protein value and palatability of much hay is lost annually because it is left in the field too long, waiting for baler equipment, thus becoming overly dried, losing most of its leaves, and bleaching until practically all the vitamin value is destroyed. As one solution to aid in the protein shortage, the committee believes that the growing of Canadian or Austrian peas to mix with a grain can be used up to 40 per cent of the protein concentrates, and will materially cut down the amount of protein concentrates required.

Many local dairymen prefer oats and vetch hay because it matures at a time when there is more chance for good weather to make hay than is the case with clover and alfalfa. The committee, however, does not believe that good alfalfa or good red clover hay can be surpassed by oats and vetch in feed value or nutrition.

Roughage

On dairy farms where silos are located, the committee believes that many dairymen could save more feed value and protein from their early maturing hay and pasture grasses by cutting and siloing them. Grass pasture grows more rapidly early in the spring and oftentimes it is too wet to turn cattle on it. This feed could be saved by cutting and making silage from the pasture and also improve the quality of the pasture coming on later in the season.

Fertilizer Program Essential

The committee believes that an annual fertilizer program is essential to the maintenance of a good grass pasture. Nitrogen fertilizers applied at the rate of 200 or 300 pounds of

20 per cent nitrogen per acre annually have generally been found to give good results. In some cases 200 to 300 pounds of phosphate per acre has been beneficial. The committee points out, however, that where this commercial fertilizer program is supplemented by heavy fall application of barnyard manure the results more than justify the practice. Under such a program, particularly when the pasturing is rotated, a good pasture of permanent grass and legumes should last indefinitely. In selecting an area for a pasture, the committee points out the advisability of having such pastures located close to the barn so as to cut down on the amount of travel required by the cows between milking and feeding.

The committee believes that two acres of pasture per cow on dry land conditions, where Sudan grass is used to supplement a permanent seeding of grass and legumes, should provide the feed for a dairy cow for a six to 12 months period. If pasturing is to be done only early in the season, one acre per cow may be sufficient. Under irrigated pasture conditions it may be possible, when proper rotations are used, to run up to two cows per acre.

Disease

Labor shortage and lack of personnel during the war years has caused a laxity in the livestock disease control program. There has been a gradual increase in the number of reactor cattle from Bangs disease in the past two and one-half years. Generally, testing has been carried out on the larger dairy herds and although there has been an increase it has not reached anywhere near the proportion that it had before compulsory testing was inaugurated. The committee urges all dairymen to support enforcement of dairy cattle disease laws for their own and the industry's protection and to avoid unfavorable publicity of their products.

Each dairyman should know where the cattle he buys comes from and makes an effort to avoid the purchase of diseased or infected animals. Every dairyman should insist on receiving with each animal he purchases a clean health certificate as provided by law.

The committee further recommends that as the stockyards are a known disease infected area where animals are sold, that no dairyman buy or bring any cattle from the stockyards or from buyers of cattle at stockyards to their farms. The dairyman should carefully check the past history of cattle before they are purchased.

The committee urges that the Bangs disease testing program be brought up to date so that all dairy cattle in the

county will have had a test within the requirements of existing law and that as this is done the Bangs rules and regulations be more strictly enforced.

Mastitis Serious Dairy Disease

The committee indicates that mastitis at the present time is one of the diseases that takes the heaviest tolls of dairy cattle in this county annually. The committee urges and recommends that each dairyman adopt a definite program for controlling his own particular situation. The committee points out that the recommendations of Oregon State College to control mastitis will give results if followed and suggests it as a program to follow by dairymen.

Vaginitis also is a disease that causes considerable loss to the dairymen annually. The committee believes that dairymen must be careful where the cattle are purchased and that care is taken not to introduce the disease or spread it by the use of stud bulls. Dairymen believe that more information is needed on this subject.

Artificial Insemination

Artificial insemination is recommended as the best known approach to mass improvement of the dairy herd.

Advantages:

1. Makes possible wider use of proved or high transmitting index sires.
2. Small dairy has the opportunity to breed to these higher quality sires.
3. Eliminates danger of handling bull.
4. Reduces possibility of spreading genital diseases.
5. The over-all sire cost is less in association breeding as compared to owning a bull.
6. Results in complete breeding records and accurate knowledge of when to turn cows dry.
7. Increases net profits from the dairy enterprise by raising the level of production per cow.

Limitations:

1. Dairymen must have cow in barn, identify her for the inseminator and call the inseminator for service.
2. Insemination fee must be paid at time of first service.
3. Approximately 1000 cows must be signed up in a radius of fifteen miles to insure successful operation.

4. A member cannot request service from any certain bull.

Dairy Herd Improvement Association

D. H. I. A. work has been gradually expanding in the county for over 20 years. The committee agrees that it is the only method by which a dairyman can actually know whether or not his animals are economical producers. It is and should be the basis of a feeding program and aids in the culling of the herd.

The average butterfat production of dairy cows in Oregon is about 248 pounds per cow while the average per cow in D. H. I. A. work is 350 pounds. Herd testing also makes it possible to prove more herd sires. At the present time there are far too few proven sires to meet the need.

In order to further spread the testing of dairy cows to more people, the committee believes that the owner-sampler method of testing should be started and developed. With the availability of more men to do the testing, every dairyman who wishes will have an opportunity to test.

The committee also believes that dairy herd testing and artificial insemination are two programs that work very well together, helping to give the dairyman an index of his progress. The owner-sampler plan will also give an opportunity for one tester to test about double the number of cows that one man on D. H. I. A. testing can handle.

Type Of Farm

From the long-time viewpoint, the committee believes that a dairy enterprise on a farm should be based on at least 15 and preferably 20 or more cows. However, the minimum herd for someone starting in the business is 10. The larger the herd, normally, the better care the owner takes of them. The committee believes that if a dairy enterprise consists of more than one or two cows it should be large enough to be one of the major income factors on the farm.

Livestock

Nationwide Situation

The number of beef cattle in the United States has increased about 17 per cent since 1941. The increase in Oregon has been about 25 per cent. The sheep population of the nation has decreased about 15 per cent while the sheep numbers in Oregon have decreased 51 per cent in the last 10 years, the largest decline of any state. On the other hand, the number of sheep has increased in western Oregon. Swine production in the United States is about 10 per cent above 1941, but the number of swine on farms in Oregon has decreased nearly 30 per cent.

Oregon produces more beef than is consumed by its population, so that about 30 per cent of it is exported. It is necessary to import over 50 per cent of the pork consumed in Oregon.

Some sections of the state, especially around the more heavily populated areas, have experienced an increase in the number of milk goats. Goat milk is in demand from specialized markets, such as hospitals. The income from Angora goats has not been attractive for the past 25 years. The average clip of mohair is three to four pounds. The kid crop is usually small, and the breed is not hardy enough to accomplish the brush clearing required by some people. Goats will improve brushy land for grazing by other livestock.

Washington County Livestock Situation

In Washington County the proportion of farm income from livestock, other than dairy, increased from 4 per cent in the 1936-1940 period to 11 per cent in 1942. The 1945 figures are probably near the 1942 level. It is well to keep in mind that the total agricultural income has nearly doubled since the 1936-1940 average.

There has been some increase in beef cattle numbers in Washington County, and a decrease in hogs and sheep.

What Of The Future?

Future marketings of livestock from Washington County and from the state as a whole will find increased competition from midwest packers as a result of decision in Washington, D. C., which allows these packers to ship meats to the Pacific Coast for the same rate imposed on local packers. This naturally will reduce the price of liveweight meat animals on the Portland market, which has been about a dollar over the Chicago price.

Until we have cheaper feed grains, it will be necessary

to rely on pastures for weight gains in livestock, and to feed waste products to the best advantage. Good use may be made of irrigated pastures for realizing gains in some types of livestock.

Beef. It is generally agreed that 200 to 400 head of cattle with a turnover of 25 to 30 per cent annually is necessary to provide a satisfactory farm income. Irrigated pastures will carry two to three head of cattle per acre. Non-irrigated seeded pastures will require about three to four acres per head of cattle, while native pastures will carry considerably less than the seeded pastures.

Rental value of land in Washington County, except for cut-over and forested tracts, is unusually high. Cost of pasture lands and the available supply of grain and forage feeds not utilized by other types of livestock, will determine the number of beef cattle, and advisability of raising them in Washington County as an individual enterprise.

An acre of ladino clover pasture at Corvallis produced 475 pounds of beef during the pasture season.

Beef cattle require about 2500 pounds of hay per head during the winter.

If cattle are fed all the silage they can eat, plus eight pounds of grain, it is possible to get as much as two pounds gain per day, according to feeding trials at Oregon State College.

Recommendations:

1. Production of beef cattle as the only source of farm income is not recommended for Washington County, although success will depend on the suitability of the farm with relation to more valuable utilization from other farm enterprises.
2. It is felt that the best recommendation for the beef enterprise would be the purchase of feeder stock, or cows with calves, not in too good condition, pasture them through the spring and summer and sell them in the fall to realize gains in both the cows and calves, and possibly increase the value of their original weight about 2c per pound. Gains can be made of one to one and one-third pounds a day on pasture alone, while gains of nearly one and three-fourths pounds a day could be realized by feeding about 3 to 4 pounds of grain a day along with the pasture. The return could be figured at the prevailing market prices. This may be a good practice

in marketing the feed supply, that cannot be utilized otherwise on a farm.

Sheep. Sheep raising in Washington County should be a secondary enterprise. Where seed and grain crops are the main enterprise, sheep could be kept to clean up fence rows, and help keep down weeds around the farm.

Sheep killing dogs in the county seem to be increasing, and is one of the leading handicaps for sheep production.

Sheep require about 250 pounds of hay per head to carry them through the winter.

Caution should be observed against overstocking pastures with sheep because of parasites, such as stomach worms. The committee recommends about one sheep for every two acres of native pasture. Two head could be raised on seeded pastures in the cut-over lands. It is recommended that early lambs be fed out to reach market by July. About 80 per cent of the lambs could be marketed at weaning time with good management on pasture.

Goats. Angora goats could be used to keep down brush and improve grazing conditions for other types of livestock on cut-over lands. These goats should not be depended upon to provide any major portion of a farm income. Interchanging goats and sheep on the same pasture may result in the spread of diseases common to each.

Milk goats could similarly be used to keep down brush and improve grazing conditions for other livestock. Transportation is a problem in getting goat milk to market.

To provide a suitable farm income, a herd of 40 to 50 milking goats should be maintained, with sufficient number of kids for replacement, based on the present market price of goat milk in Portland. Only milk strain goats should be kept for this purpose.

Hay and grain should be fed to maintain milk production. About a pound of grain per feeding per head is necessary. A goat will consume about 550 pounds of hay during the winter period.

Swine. Hog feeding in Washington County should be based on the utilization of farm wastes.

About 450 pounds of grain is required to produce 100 pounds of pork. This can be reduced by the use of skim milk and pastures, or the equivalent. Potatoes or squash are occasionally raised to feed hogs. Six hundred pounds of raw potatoes will replace 100 pounds of grain, and 400 pounds of cooked potatoes will replace 100 pounds of grain if fed along

with the grain. Squash is somewhat lower in food value than potatoes.

Where cream is sold from the farm, one hog can be kept profitably to consume the skim milk for every cow milked.

One hog can be kept on five to 20 acres of grain stubble and put on considerable weight, making it a worthwhile consideration.

One hog can be kept on the garbage from the average farm family, along with some grain feeds, to put the hog in marketable condition.

More legume pastures should be utilized and made available for hog pastures.

General Recommendations:

1. More consideration should be given to the utilization of wastes from the local canneries for both swine and cattle feeding. Some thought should be given to ensiling some of the cannery wastes for cattle feeding.
2. That more use of subterranean clover for pastures for both cattle and swine be encouraged.
3. That a few hogs could be kept to follow the average herd of dairy cattle, and especially a few hogs with feeding cattle where whole grains are fed. Additional grain needs to be fed these hogs in addition to what they may pick up around the feed lots.
4. Some consideration may be given to the use of early maturing corn, in which rape is seeded, for hogging-off during the early fall.

Marketing

The immediate proximity of the markets to Washington County does not create a marketing problem to our livestock raisers.

The committee believes that some organization of livestock shippers in Oregon should be formed for the purpose of analyzing freight rates, and disseminating the information on grades and marketing procedures and outlets of produce, should the Portland markets ever become monopolized. This could become a part of the program of the various breed associations within the state.

The committee recommends that the various farm organizations in the state should formulate a resolution to the State Extension staff requesting additional specialists to work with the livestock interests in Oregon.

Poultry and Turkeys

General Poultry Situation

The Pacific Coast has changed from a large exporting area to an importing area. Oregon, however, still produces a surplus of eggs above the needs of state consumption. While some of these exporting eggs still go to Eastern markets, a gradually increasing number are being sold to other states on the Pacific Coast. About 10 to 15 per cent of the total eggs produced in Oregon are exported, and this consists of about 250 to 300 carloads of market eggs and about 100 carloads of hatching eggs. Most of the chicken hatching eggs are exported to California.

The major part of the commercial egg industry of Oregon lies in the counties west of the Cascades, because climatic conditions of Western Oregon are well adapted to the needs of the poultry business.

The production of poultry products in the United States has increased approximately 50 per cent during the war. However, per capita production on the Pacific Coast has not expanded as much during the war period as some other areas, and there has been a substantial increase in population. There has not been a large variation in the laying hen population in Oregon during the past 15 years, with the exception of a 15 to 20 per cent increase during the recent war period. The increase in the production of poultry products has been about the same as the increase in population in Oregon.

Poultry production in the United States will no doubt have to be curtailed from the present high level of production unless a large export market is established. Due to the relatively low production average for the Pacific Coast region as compared with that of the nation as a whole, Oregon should be able to compete and about maintain the present poultry population. If population of the industrial centers continues to expand there may be room for a slight increase in poultry numbers during the next five years.

Shift In Poultry Breeds

There has been a substantial shift in Oregon from White Leghorns to the heavy breeds—mainly New Hampshires. In 1943 only 46 per cent of the chickens raised in Oregon were White Leghorns, 34 per cent New Hampshires, 7 per cent Rhode Island Reds and about 2 per cent Barred Plymouth Rocks.

The increase in New Hampshires has been the result of

a large demand for hatching eggs and some increase in fryer production. The demand for hatching eggs is expected to continue and may expand if the poultry breeders will continue to improve the conformation of the meat type chicken and at the same time improve egg production, hatchability, rate of growth and rate of feathering.

There never has been a large economical broiler or fryer industry in Oregon. This type of meat production has been limited to a few producers close to the centers of population. As market outlets develop, this phase of the industry may see substantial growth during the postwar period.

Poultry Situation In Washington County

This county produces a surplus of eggs which must be marketed outside the county and possibly the state, because it adds to the surplus production of the state. The population is on the increase in Washington County, and it is generally felt that some of the Portland markets are improving for poultry products.

There has been a definite shift from White Leghorns to heavy breeds, mainly New Hampshires in Washington County as is true in the state. The present production could be maintained, with a possible increase of not over 5 per cent during the next five years, considering population trends, market conditions, and other factors.

Poultry Value To County

The income from all marketable poultry products in Washington County accounts for about 13 per cent of the total income from all agricultural products according to the 1942 figures available. About \$1,500,000 is realized from poultry products marketed from Washington County annually.

Producers of eggs in the county have the choice of selling either through established independent dealers, or through the cooperative poultry producer's associations. Growers also have the choice of purchasing their feeds and supplies from independent dealers or cooperatively through the poultry associations.

Egg Demand Must Be Considered

The demand for eggs from well managed flocks of all principal breeds to supply hatcheries, with the state and county, should be considered by many farmers as an additional outlet. The principal breeds hatched in the county are White Leghorns, New Hampshire Reds, and Rhode Island Reds. A small number of Barred Plymouth Rocks are hatched by some hatcheries.

In a long-time breeding program there are many factors

that should be taken into consideration such as: egg quality, more desirable meat type, conformation, livability, hatchability, fertility, rate of growth, rate of gain, rapid feathering, early maturing, free from broodiness, free from winter pause in production, high intensity and persistency of production.

Interior egg quality, shape and size of eggs, shell color and texture, and more desirable meat type conformation are factors that should receive special attention. Egg quality should be emphasized in all breeds, and meat type especially in the heavy breeds such as New Hampshires, Rhode Island Reds and Plymouth Rocks.

Poultry Recommendations:

1. That a unit of not less than 2000 hens is desirable where poultry is the major source of income.
2. That a unit of at least 500 hens is desirable where poultry is to be a side line cash income.
3. That for a family who want only poultry products for home consumption, 25 hens are sufficient.
4. That 50 to 100 per cent of the laying flock should be replaced each year.
5. That pullets should never be placed in the same pen with older birds.
6. That breeder flocks should be fed a breeder's ration from two to four weeks before hatching eggs are saved.
7. Market eggs and hatching eggs should be gathered three to four times a day and be cooled immediately and held at a temperature of 40 to 60 degrees with relative humidity above 90 per cent.
8. That White Leghorns be raised for white shelled egg production and that New Hampshire Reds or Rhode Island Reds be raised for brown eggs and meat production.
9. That caution be observed in producing day old chicks.
10. That started chicks are liable to have disease and are not advocated.
11. That the brooding operation be 200 to 300 feet from the laying house to prevent spread of disease.
12. That pullets be raised in confinement when

adequate range is not available.

13. That green feed should be provided throughout the growing period and be fed liberally.

14. That all range equipment be portable.

15. That a market outlet be obtained before production of poultry for meat purposes.

16. That the price of fryers be at least twice the price of feed to make reasonable profit.

General Turkey Situation

Turkey growers in the United States produced approximately 30,000,000 turkeys per year during the five year prewar average, 1937 to 1941. The 1945 crop of turkeys was over 44,000,000. This is a 43 per cent increase over the prewar average. In Oregon the industry has expanded even greater than it has for the nation. During the five year prewar average, Oregon was raising about 1,500,000 turkeys. The 1945 crop is 2,605,000 which is a 65 per cent increase. While increase has been fast and large the expansion has been on a fairly sound basis. Most growers have reasonably good equipment, adequate land and are operating economic units.

Before the war the per capita consumption was ranging from 3.5 to 3.7 pounds. It would require a per capita consumption of five pounds to consume the 1945 crop if the army had not purchased its quota. The consumption of turkey is gradually increasing and eventually it may reach or even exceed five pounds per capita. However, the increase will no doubt be slow and gradual. In view of the present situation, it seems as if the 1946 crop in Oregon and the nation should be reduced from 10 to 15 per cent compared with 1945.

Oregon Fourth In Market Turkeys

Oregon ranks fourth in the number of market turkeys and second in the production of hatching eggs and poults. The state is well equipped with marketing and processing facilities and has several other advantages such as climate and reasonably good feed supplies, which means it should be able to compete with other large producing areas.

The production of hatching eggs and poults has developed into a major part of the turkey industry in Oregon. In 1945, Oregon exported about 10,000,000 hatching eggs and 2,500,000 poults in addition to over 2,500,000 market birds.

Hatching Industry Growth

Oregon has developed a wide reputation for the production of large broad breasted turkeys that are free from

pullorum disease. It seems as if hatcheries and producers from various sections of the United States are coming more and more to this state to obtain hatching eggs, poults and breeding stock. There are many natural advantages in Oregon, such as mild winters, early springs, cool summers and low altitude for the production of hatching eggs and poults.

If the turkey growers will continue to improve the quality of the stock, fertility and hatchability, this export business of hatching eggs, poults and breeding stock will continue and possibly expand. Although there has been a big demand for Oregon eggs and poults, producers must bear in mind that it can easily be over-expanded.

The majority of turkeys in Oregon are the large Broad Breasted Bronze. They are very popular for market birds because they grow fast, make rapid gains and are heavy at marketing time. The average size of turkeys in Oregon has increased from 14 to over 18 pounds during the past 15 years. As the average size has increased, there has been some decline in fertility and hatchability. To improve these factors or avoid further decline, it may be necessary to select slightly smaller toms that have better symmetry, action, and balance.

Future Prospects

There will be times when hens and small type turkeys will sell for a premium over the large Broads Breasted toms. However, the toms and large turkeys in general make more economical gains. The premium will have to be more than 5c per pound for the small type birds to compete. In the future the majority of turkeys will be eviscerated, quick frozen and many of the large toms will be cut in half and some quartered when sold to consumers.

It requires a large amount of capital to handle a commercial flock of turkeys. Some growers finance themselves, however the majority borrow money or are carried by feed companies or processors. Most agencies, in financing turkeys, have adopted the policy of not extending credit until the poults are through the brooding period and ready to go on range. In other words, the grower should have all of his equipment and sufficient capital to purchase the poults and to pay for cost of production to eight weeks of age.

Credit when extended to the extent of furnishing brooder houses, brooders, fuel, poults, feed and groceries to new beginners is unfair competition against established growers. It results in exploiting an industry to the detriment of all.

Turkey Situation In Washington County

The turkey crop in Washington County has nearly tripled since 1936. It is estimated that about 95,000 turkeys were raised in the county in 1945.

Growers have a choice of marketing their turkeys through established produce firms or through an established cooperative marketing association. Some turkeys are marketed at the local freezing and canning plant in Hillsboro. Producers may purchase feeds and supplies either from established feed companies or through cooperative channels. The existence of both methods of marketing and purchasing of supplies is a great factor in stabilizing the industry in the county and in protecting the investments of all growers.

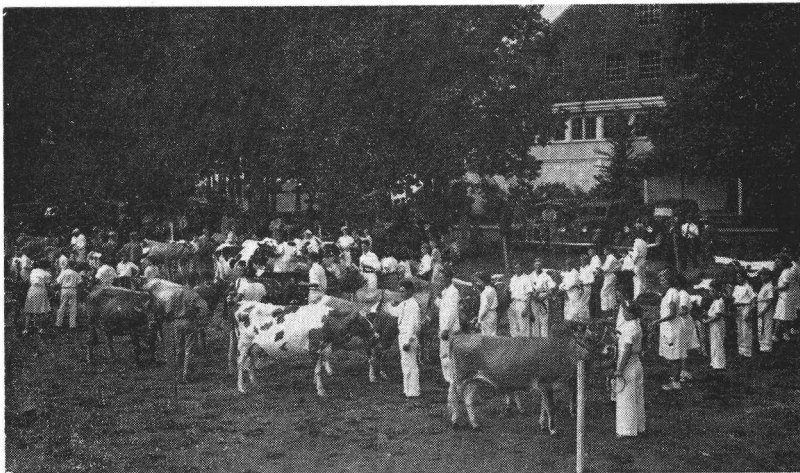
Nature Of The Industry

The turkey business is a short term business, during the periods of good prices many people rush into it and during periods of low prices there is a general exodus of marginal operators. The cycle of both high and low prices is short and the business adjusts itself more quickly than many long-term agricultural enterprises. In addition to a study of the economic conditions affecting the turkey industry, the successful grower is one who fortifies his business with proven management practices, knowledge of disease control, overcoming known hazards, studying his cost of producing a pound of turkey meat, and establishing ample credit.

Turkey Recommendations

1. That there be a reduction of about 10 per cent in the turkey members in the county.
2. That 3000 to 4000 birds is the minimum unit where turkeys are the major source of income.
3. That a grower should have two acres of range land for every 100 turkeys and range should be rotated from year to year.
4. That poults should come from breeding flocks consisting of vigorous, broad-breasted, well balanced, early maturing birds free from transmissible diseases.
5. That the new grower discuss various factors of the business with experienced turkey producers before entering the game.
6. That good brooder houses and equipment are essential for successful turkey production.
7. That brooding and rearing operators should be entirely isolated from older birds to prevent spread of disease.

8. That brooding equipment may be used to advantage by raising a flock of fryer chickens during the fall or winter months.
9. That turkey breeding stock should be selected before any birds go to market and should meet minimum requirements of Oregon Broad Breasted Approved, as set up in the Oregon Turkey Improvement Program.
10. That breeding stock should be placed on a breeder's mash four weeks before hatching eggs are saved.
11. That all equipment should be portable so that it can be moved as a disease control measure.
12. That in a long-term breeding program there are many factors to consider such as: fertility, hatchability, rate of growth, rate of gain, rate of feathering, body conformations, symmetry, action, early maturity, egg production, egg quality and livability.



4 - H Club Prize Winners Line Up At Fair

Farm Home and Rural Life

Community And Family Life

The most satisfactory form of rural living is found in communities where a good home life is supplemented by progressive and balanced community activities. These activities should provide opportunities for the expression of the interests and talents of members of the community. Whatever is accomplished in the way of community betterment is accomplished by families differing in many respects, but all recognizing the needs and desires for community development and contributing toward it.

These forces in the community cause many people to think alike: church, politics, and social codes.

Other forces in a community tend to introduce new influences and ideas: radio, newspapers, movies, scouts, camp-fire, new families, extension service, schools, ministers, P. T. A., public health, farm organizations, and other adult educational phases.

Rural recreational facilities in Washington County are limited to 13 grange halls, seven lodge halls, three community halls, one community and five city libraries. Seven of the eight high schools have gymnasiums, and 18 out of approximately 100 grade schools have gymnasiums.

In the past year 21 districts have consolidated into seven districts.

There is no inter-church or ministerial organization in the county, but there are indications in some churches of a movement to provide better recreational facilities for younger members of their congregations.

In 1945 there were 173 applications for marriage licenses and 276 filings for divorce, according to the records of the County Clerk's office.

The committee recommends

1. That we reappraise our changing community conditions and recognize that communities are enlarging in both size and interests.
2. That the developing tendency toward school consolidation be recognized as offering opportunities for the construction of planned adequate recreational centers, for use of both the schools and the enlarged communities.
3. That in order to encourage more home reading and a greater appreciation of good books, both for recreational and instructional purposes,

a cooperative project with Extension Service and the five libraries in the county be developed. This to include book lists for all ages, training of both adult and older youth leaders in giving book reviews, and that the possibility of having a county library to serve the county as a whole be investigated.

4. That organized and supervised play with more equipment be a part of our school program, in order that the development of our children be as well rounded as possible.

5. That our schools and Extension Service provide opportunities and assistance in developing leadership among our young people and adults.

6. That education in family living be made available to parents and other organizations in the county who desire it.

Home And Farmstead

Improvement of housing in Washington County is recognized as one of the most urgent problems to be tackled.

Facts have shown that many of our farm dwellings are in bad state of repair, and lacking in facilities accepted as a matter of course by city families.

Housing improvement in the next few years will depend on:

1. Farm family incomes.
2. Building costs.
3. Availability of material.
4. Availability of credit.
5. Availability of advisory and educational services.
6. The enterprise of farm families in such matters as using local materials and acquiring necessary skills to do much of their own construction.

Many farm families will welcome assistance in thinking through their housing problems. For some, the first decision to be made is whether to build a new house or to remodel what they have. In either case, they may need help in selecting plans, in making a long-term plan for housing improvement to be carried out over a period of years. Many families will be interested in learning about less expensive building materials and in acquiring skills that will enable them to do their own construction work.

Twelve years of depression and four years of war have

resulted in deterioration of the entire farmstead in many instances.

According to the 1940 census, it was found that 40 per cent of the houses in Washington County do not have running water, 40 per cent are without indoor flush toilets, 20 per cent do not have electricity, and 60 per cent have no bath facilities.

Of the approximately 5,000 farm houses of the county (1940 census), two-fifths of the houses were built before 1910, and the remainder after that year. These figures would, in the main, apply to other farm buildings as well. In view of these facts, a long-time building program should consider the development of the entire farmstead for efficiency and appearance. The committee therefore recommends:

1. That schools sponsored by the Extension Service be held in the county with extension specialists as instructors, to give help on the following problems:

- a. Farmstead planning.
- b. House planning and remodelling (to include service yard and outdoor living space.)
- c. Landscaping the farmstead.

2. That information be given on:

- a. Installing water systems.
- b. Building septic tanks.
- c. Safe home wiring.
- d. Correct home lighting.

3. That immediate advice be available on remodelling.

4. That continued research be made available to the public on new household equipment such as stoves, hot water heaters, freezing units, heating units, new and improved lighting installations.

5. That information on best use of available materials for insulation, walls, floors, finishes on all surfaces, and foundations, be available for those who need this type of information.

6. That help be available in family financial planning.

Health And Nutrition

Adequate health for happy successful living depends upon scientific research and more wide-spread application of the principles established by that research.

Recent nutritional studies carried out in Washington, Tillamook, and Marion Counties among children of rural families indicate the lack of emphasis upon the inclusion of

enough milk, fresh vegetables and citrus fruits, such as oranges, grapefruit, and tomatoes in the diet of these children to meet the daily standard requirements of an adequate diet.

Dental examinations show that 90 per cent of school children need dental care.

Teachers report that 10 per cent of our children in Washington County suffer eye defects. Only a few of our rural schools are without electricity.

In order that the general health of people be improved, continued effort must be put forth in that field, both in adult and youth education.

The committee recommends:

1. That more scientific research be carried on in nutrition.
2. That nutritional information be emphasized on how to conserve all food elements (vitamins and minerals) in harvesting, food preparation, and preservation of foods.
3. That farm families continue to raise their own food supply as a means of assuring a balanced diet, and that winter gardens be encouraged.
4. That an increased consumption of tomatoes, citrus fruits, milk, leafy green and yellow vegetables be encouraged.
5. That hot lunches be provided in rural schools.
6. That further research be made in soil analysis to determine the relation of nutrition to trace-elements in the soil.
7. That school rooms be tested for adequate, well-placed lighting equipment.

4-H Club Work And Older Youth

There are approximately 7131 children between the ages of 9 and 18 in Washington County. There are 1158 boys and girls enrolled in 4-H projects leaving 5973 who are eligible but not enrolled.

There are 93 home economics clubs and 36 agricultural clubs, making a total of 129; these clubs are led by 111 adults and older club members.

There are:

- | | |
|------------------------|-----------------------------|
| 61 first year leaders | 1 seventh year leader |
| 17 second year leaders | 2 eighth year leaders |
| 13 third year leaders | 2 ninth year leaders |
| 4 fourth year leaders | 1 tenth year leader |
| 6 fifth year leaders | 1 twelfth year leader |
| 1 sixth year leader | 1 thirteenth year leader |
| | 1 twenty-first year leader. |

Other youth activities in the county are:

- Boy Scouts — 900 members
- Girl Scouts — 6 groups
- Campfire Girls — 369 members
- Rainbow Girls — 3 groups
- De Molay — 1 group
- Junior Women's Groups — 5

There are no records in the county showing the number of young people between the ages of 18 and 30. There are many young men and women in this age group returning from the armed services.

The present fair buildings are inadequate as to size, lighting, and equipment for the number of boys and girls enrolled in club work. There are no facilities for feeding the boys and girls who bring their livestock in and stay on the fair grounds for a number of days.

From the factual information submitted in this report, the committee makes the following recommendations:

1. That every boy and girl in the county be given the opportunity of belonging to a 4-H club.
2. That more training be made available for leaders in techniques, and that a handbook be written for leaders in each project in home economics and agriculture.
3. That local leaders attend and take part in the 4-H Leaders' Association and the State 4-H Leaders' Conference.
4. That 4-H leadership provided through home economics units be continued and expanded.
5. That dairy, poultry, crops, and swine be emphasized in the agricultural projects.
6. That rural youth organizations composed of young men and women, single and married, 18 to 30 years of age, who are out of school and at home on the farm, be organized.
7. That the purpose of this organization would be to provide an opportunity for continuous personal growth and development of the individual members through group activity and cooperation so that both the individual and community life may be improved and enriched.
8. That the program be designed to meet the interests and needs of young people, with a balanced program of education, recreation, and community improvement.

Farm Labor

General Farm Labor Outlook

At the beginning of 1946, farm labor prospects in Washington County are somewhat uncertain. Farm labor is in a state of adjustment from war-time emergency conditions to that of postwar status. For the first time since June 1943 no Mexican Nationals are performing agricultural labor in the county. During 1944, 248 different Nationals toiled a total of 22,500 man days; during 1945 approximately the same number accounted for 21,000 man days for county farmers.

The Extension Farm Labor Office, set up to recruit and place farm labor, made approximately 6000 placements on county farms during 1944. In 1945 the office received 1032 orders for farm help and made 9045 placements. Of this total, 3344 were placements of youth, 3807 Mexican placements, 1202 placements of men and 618 women placements. Placements in 19 different crops were made during 1945.

Crop trends during the past 25 years have been towards small fruits, nuts and berries, as well as beans and other truck crops requiring a high percentage of stoop or hand labor. Every indication at present points towards a continuation of this trend, with perhaps a reduction in grain, hay and idle acreage.

During the period from 1919 to 1945, tree fruits and nut acreage increased 300 per cent. Small fruit acreage increased 200 per cent, while grains showed a 7 per cent decrease in crop acreage.

Placements by crops made by the farm labor office during 1945 show the following crops leading:

Crops	Placements
Strawberries	1570
Walnuts	991
Prunes	975
Beans	886
Filberts	719
Caneberries	690

From 1200 to 1500 Washington County farm boys are expected to be discharged from the service during 1946-47. The number of these who will return to farm work as an occupation is problematical since returned veterans show a tendency to shop around for jobs and some of them will probably want to follow trades learned while in the service.

Likewise the number of transient workers who will ar-

rive to do seasonal farm work in the county during the next two years is rather uncertain, as the new car program is far behind schedule and many cars formerly used by transient workers are becoming obsolete and taken from the road.

Whether or not Mexican labor or other transported labor will be necessary in 1946 will depend upon the availability of transients and veterans for seasonal work and the utilization of all types of available workers.

Other factors tending to curtail the supply of farm labor is the proximity of the county to a large industrial area, and the establishment and steady growth of food processing plants within the county itself. Past experience has shown that workers generally seek industrial employment first, taking farm work as a last resort.

Committee Action And Recommendations

The committee took up each point separately, discussed it thoroughly and made recommendations as follows:

1. Housing—Since the county is experiencing an influx of new farm population and new processing plants, it is evident that there will be an increasing demand for hand or stoop labor, to care for the added production brought about by increased acreage of small fruits, nuts, berries and truck crops required to keep processing plants in operation. Since local farmers will compete for labor with adjacent industries as well as other farm areas, it is highly important that suitable housing facilities be made available. The better the housing and other farm facilities, the better the type of labor attracted. The type of on-farm housing that served in the past is outmoded and unsatisfactory for the future because workers have become accustomed to modern facilities in wartime defense projects with housing centers.

Recommendations It is recommended, (1) that efforts be made to secure finances for the construction of a central labor camp, or camps, in this county, to house seasonal farm workers, with the management, and locations left in the hands of local people. (2) That farmers requiring any volume of labor be urged to provide ample up-to-date housing facilities on their own farms.

A committee of four members is appointed to investigate how and where funds can be secured for the construction and maintenance of a central public farm labor camp, or camps; also

the possibility of securing housing units from defense housing areas and costs of same to farmers for on-farm housing.

The committee appointed consists of Elvin Finegan, Vic Madsen, M. P. Cady and Palmer Torvend.

2. Child Labor—It is felt that an effort to include children working in agriculture under the Child Labor laws is almost certain to result in legislation to that effect. The committee on Farm Labor recognizes the importance of protecting youth by Child Labor laws. However, in certain fruits, nuts, berries, beans etc. hazards are practically non-existent, and rather than being detrimental to child welfare, these pursuits actually provide wholesome and profitable outdoor activity which reduces juvenile delinquency and imparts to the youth certain educational values, according to juvenile authorities and educators. In many cases, youth work as part of a family group and contribute to the family income.

Recommendations It is recommended that the State Grange, State Parent-Teachers and other similar interested organizations, including the state organization of Sponsoring Committees, be informed of the Farm Labor Committee's attitude on the subject of child labor as applied to agriculture, with the hope that these organizations, all vitally interested, will aid in securing the proper legislation, exempting certain non-hazardous farm jobs should such proposed legislation actually be introduced to Congress.

3. Social Security—Most farmers are not sufficiently informed on the Social Security law with its benefits. It is felt that the matter of extending Social Security benefits to include agricultural workers should be given wide publicity among farmers, educating them on benefits to be derived, how the plan operates, etc. Most farmers, already burdened with many reports and paper work are inclined to look with disfavor upon any new proposal that results in additional bookkeeping. The farm labor committee recommends, the use of pamphlets, newspapers, radio and other suitable facilities as means of posting farmers on Social Security benefits for their hired help.

4. School Cooperation With Harvest Operations—School opening and closing coincides with harvest operations in two important county crops—prunes in September and strawberries in late May or early June. If opening of school is de-

layed for prune harvest, the closing is apt to interfere with beginning of strawberries. School authorities have cooperated splendidly during the war years, and there is every reason to believe that their cooperation will continue if they are kept posted on farm labor needs. No definite schedule can be set up for future years, since many factors such as seasonal fluctuations and supply of labor available, crop yields, etc. change the labor requirements.

Recommendations It is recommended that the county agent, or agency in charge of farm labor recruitment and placement, maintain close contacts with the various school authorities throughout the county, in order to secure the maximum cooperation of schools for the harvesting of farm crops.

5. **Labor Demand By Crops**—Since seasonal crops, such as row crops, berries, fruits, nuts, and truck gardening require varying amounts of hand labor, it is recommended that; (1) Growers be urged to determine before planting what their labor needs will be, insofar as possible, for the various crops, and to recruit by their own means as much of their help as possible. In this connection the committee stresses the importance of good housing and transportation facilities on the farm. (2) Farmers should not be discouraged from planting any crop, for fear of insufficient labor but they are advised to plan ahead and have some idea of how and where their labor is to be secured.

6. **Plan Of Labor Recruitment And Placement Program For 1947**—The Extension Service, always friendly, sympathetic and interested in agriculture has rendered the only satisfactory farm labor program thus far. Before the present Extension farm labor program was begun, farm labor recruitment was combined with the United States Employment Service and the results were most unsatisfactory.

Since the present Extension program, as now set up, is to be discontinued at the end of 1946, it is the recommendation of the Farm Labor committee that (1) the Extension Service be commended for a job well done and asked for the continuation of a similar program, under a separate branch of the Extension Service set up for that purpose, or (2) that Federal funds for a Farm Labor program be made available, but separate and apart from agencies established to supply industrial labor, and that the actual administration and management of such a program be delegated to local county people.

7. Veterans—Though 1200 to 1500 farm boys are expected to return from the armed forces during 1946-47 it is felt that they cannot be counted on very heavily for seasonal farm labor. Some will likely take up where they left off as regular year round farm workers. But experience to date shows that most returning veterans are restless, not content to settle down, and are either job shopping or planning on going back to school. There is also a tendency for veterans to rush in and buy farms of their own without proper investigation.

The committee recommends that wherever possible, veterans be given preference by farmers seeking labor.

Finally, it is recommended that all labor available locally, including veterans, transients, local men, women and youth, be utilized to the maximum during 1946. The committee feels that the maximum of all labor available locally will eliminate the need of Mexicans or other transported labor.

Part-Time Farming

Future For Part-Time Farms

Washington County offers considerable possibilities for part-time farming since it lies in the proximity of a large industrial area and contains numerous lumber and food processing operations within its own boundaries. The nearness of ample employment to provide sufficient income to augment that derived from the part-time farm operations should govern the selection of a site for anyone interested in such a venture.

The size of a part-time farm will depend (1) upon what the operator plans to produce and (2) the amount of time or labor he can afford to devote to the operation. Generally, one acre of land will provide ample space for a homesite and permit enough room for family garden, orchard and enough chickens to supply the family with eggs and poultry. A pig or two would also be possible, provided all feeds, other than waste, were purchased. Keeping a cow would require an additional acre for pasture and all other feed would need to be purchased. If production for market is desired the outlay must be increased according to requirements.

The 1940 census shows:

1. Nine hundred eighty three farms in Washington County less than 10 acres total, with 2.6 acres or less in cropland harvested.
2. Fifty per cent of the farms are less than 30 acres in size.
3. About 50 per cent of the farm operators work off the farm.
4. As a group, the part-time farmers average 175 days work off the farm per person, annually.
5. One-third of all farms in Washington County reported that the chief source of income from the farm is home-used products.
6. Twenty-four per cent of all farmers grossed less than \$250 annually.

Successful operation of a part-time farm requires the same adherence to good farming and marketing principles as practiced by full time operators. The degree of success achieved depends upon the quality and quantity of marketable products produced.

The advantages of part-time farming are:

1. Opportunity for profitable use of spare time.

2. The pleasure and recreation derived from the outdoor activity.
3. A wholesome and healthful environment in which to live and rear a family.
4. A measure of security during times of depression and periods of unemployment.
5. A means of gradually developing an orchard or other income producing project as a form of old age pension.
6. Part-time farming acquaints the beginner with the business of farm operation and aids him in deciding whether or not he would care for farming as a full time pursuit.

Disadvantages of part-time farming are:

1. Farming is confining and requires hard physical labor, attention to details and careful planning in order to be successful.
2. Production costs will be higher, due to higher priced land closer to town and smaller operations which will not justify the investment required for labor saving machinery. This will result in a higher cost per unit of production.
3. Lack of time, inability to secure ample labor at harvest time and failure to give sufficient supervision may result in severe losses and disappointments.
4. In case of job loss or desire to change jobs, the farm may be a serious handicap. Opportunities for selling part-time farms vary with the rise and fall of employment opportunities in the same area. Producing enough to eat is not sufficient security.

Recommendations

The committee on part-time farming recommends:

1. That anyone interested in part-time farming consult the county agent for advice and information on proposed crops, location, soil types, etc. Besides the regular Extension Service bulletins covering these various topics, the county agent will also be able to give practical first hand information based on actual experience, in this county.
2. Location of part-time farms should be located with due consideration for employment,

availability of farm labor supply and markets for farm products.

3. That the actual farm operations be simplified, especially at first, or until the operator can determine the possibilities and ascertain how well his family and himself can adapt themselves to farm life.

4. That livestock breeding be avoided unless the operator is willing to undergo the rigorous requirements attendant upon the success with farm animals and their breeding. Artificial insemination of dairy cows offers an excellent opportunity for part-time farming.

5. That, in addition to the foregoing, the beginner also talk with successful operators in similar ventures and acquaint himself with the problems and possibilities of his proposed operation in all ways possible.

6. That before embarking upon any project, the operator know how the various operations required are to be performed. If he does not have all the necessary machinery and equipment of his own, he should ascertain whether he can secure custom equipment to do the job at the proper time.

Veteran Opportunities

There are opportunities in many communities for veterans with part-time farms to build up a profitable custom farm machine work business. All forms of tractor work, combining, spraying, dusting and even noxious weed eradication could be included.

Interchange of equipment or joint ownership among part-time farmers of limited operations might be a feasible way of reducing investment and overhead.

Veterans

A guide for returning veterans, providing questions and answers, was prepared by the county veterans committee in 1945. This report was reviewed before the planning conference began in 1946 and the committee generally concurred in the opinion that the information still applied. The following is a brief summary of their report which may be found in full in Extension Bulletin 653 entitled "Farm Opportunities in Washington County, Oregon." Newcomers to Oregon, or those inexperienced in farming who wish to purchase a farm, should first rent or work for an established farmer for a period of at least one year before investing funds in agricultural land.

Recommendations

1. Our committee cautions returning service men in regard to the importance of not investing their savings and the money that will be made available to them through loans, on agricultural enterprises without being thoroughly familiar with the land and its price in proportion to productivity and location.

2. Farming is a specialized occupation that requires experience and knowledge of locality, soil, and markets. The spirit that prompts people to establish themselves on the land is common and such development is inevitable but the following caution is pointed out: unless there has been some farm experience or training, the prospective purchaser could well lease a farm or work for another successful farmer for a year or so in order to become better acquainted with the farming business.

3. We urge the returning veterans who are without farm experience to take advantage of the schooling offered under the G. I. Bill or that they accept farm employment until they have had an opportunity to become more familiar with the agriculture of the community.

4. We do not wish to discourage the veterans who are thoroughly interested in entering the field of agriculture and who have had sufficient experience or knowledge. We feel there is no lack of opportunity for industrious and capable men in the field of agriculture in Washington County, but we wish to point out that land values change and present farmland prices generally have increased to a point beyond what the farms generally can be expected to produce in return.

Appreciation for making possible the printing of this report is expressed to the following through whose cooperation and financing it was made possible:

Washington County Court

Commercial National Bank, Hillsboro

First Security Bank, Beaverton

Citizens Bank of Sherwood

First National Bank, Forest Grove

Washington County Bank, Banks

First National Bank of Portland, Hillsboro

United States National Bank of Portland

Forest Grove National Bank

Members of the ~~above~~ concerns have expressed interest in this report and believe that its importance to agriculture justifies its publication.

Palmer S. Torvend.