

REPORT

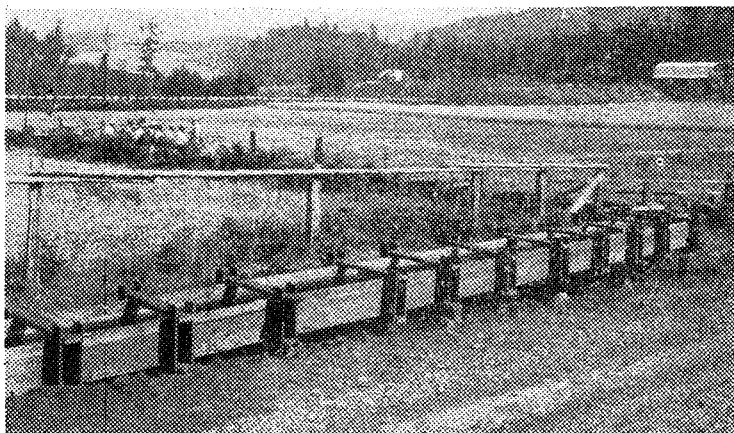
OF THE



# CLACKAMAS COUNTY AGRICULTURAL OUTLOOK CONFERENCE

Conducted in  
Oregon City, Oregon  
FEBRUARY 11-12

1936



# FOREWORD

The first Clackamas County Economic Conference was held in 1925. This bulletin contains the report of the second, completed in January 1936. The difference in these two reports indicates the changes in agriculture which have occurred during the decade. Day by day the changes in agriculture here seem small and unimportant, but studied by the decade it is easy to see that our agriculture has advanced and the scenes have changed at a rapid, almost startling pace.

The crops of a decade have taken a marked and definite toll on soil fertility and many farmers have given up the struggle of raising clover and other legumes, so necessary in the rotation. The era of use of oil limestone and phosphate fertilizers is upon us.

This is a county of homes. The droughts and depression of the middle west have caused a second migration to the Pacific Coast. These new settlers look upon our county as a garden spot. Partly as a result of this movement the selling value of much of our land appears to be based on a speculative basis as rather than upon a crop income basis. Also the average area of cultivated land has decreased from nearly thirty-four acres to twenty-three acres per farm. We have turned to intensified farming.

The recommendations of the first report have been carried out to a remarkable degree and in many cases we have advanced far beyond the thoughts of 1925. Thus we see our dairy cattle tested for Tuberculosis, and the test nearly complete for Bang's disease. Poultry raising and small fruits form 35 per cent of our agricultural income. Cooperative Associations have been supported and developed through which we market most of our eggs, and fluid milk, and our turkeys.

New crops and varieties have appeared on the scene. Hannchen barley and Victory Oats are used extensively as spring grain crops. Hybrid sweet and field corn crosses are receiving attention, Redheart, Narcissus, Rockhill and Corvallis strawberries and Lloyd George raspberries are new varieties grown. Grass seed crops are now being raised. They include Chewings Fescue, Tall Meadow Oat grass, Tall Fescue, Meadow Foxtail and Reed Canary grass.

Willamette Sweet Clover and Crimson Clover are used extensively, and in 1936 five hundred acres of alfalfa were planted. Austrian Winter Field Peas and Hairy Vetch have become important seed crops.

New plant diseases and insect pests have arrived upon the scene or have taken a sudden notion to increase and worry the growers. How downy mildew has appeared and is present in every hop vineyard, Crinkle disease has threatened strawberry plants and certification has been developed, flea beetles increase the hazard of growing potatoes and garden crops and spittle bugs must be controlled on strawberries and many garden crops.

Irrigation has become a project of major importance.

These are only examples of what has taken place during the past two years. What the future holds remains to be seen, but the recommendations in this report indicate a greater change during the next ten years, and with the cooperation of people such as have cooperated to make this conference and this report a success, your County Agent predicts a careful and planned advancement which means a better and brighter future.

COUNTY AGENT JOHN J. INSKEEP

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## REPORT OF THE AGRICULTURAL ECONOMICS COMMITTEE

of the

### CLACKAMAS COUNTY OUTLOOK CONFERENCE

February 11 and 12, 1936

The agricultural economics committee considered and made recommendations on three economic topics which are believed to be of importance to Clackamas county agriculture. These topics are:

1. Marketing of farm products
2. Farm credit
3. Land utilization

#### Marketing of Farm Products

In general the marketing setup is satisfactory for most Clackamas county farm products. Well managed cooperative associations handle eggs, wool, fluid milk, some cream, filberts, walnuts, turkeys, small fruits, and some potatoes. Much of the sour cream, grain, hay, seeds, and other general farm products are handled with general satisfaction by independent dealers and brokers.

The grades for most agricultural products are satisfactory, giving protection of quality to the consumer, and guaranteeing a market to the grower based on supply and demand. Growers are quick and anxious to conform to reasonable grade standards when benefits of such grades and standards are demonstrated.

The committee feels, however, that the prune marketing situation is at variance with general marketing conditions as stated above.

The consumer in the east pays about 80 per cent above the price received by the Oregon producer for eggs, apples, turkeys, and most of the other farm products. For prunes, however, the consumer pays from 400 to 600 per cent more than the Oregon grower receives.

The committee is informed that the large packers deliberately undersell growers who ship prunes to the middle-west, regardless of existing market prices. As a consequence, growers who ship one or

two carloads are undersold, lose money, and are discouraged from further marketing operations. Several growers, however, have taken truck loads of dried prunes to the middle west, with destination unknown and have sold their product at a good profit.

The committee recommends that a small group of interested marketing leaders be called together to consider this prune marketing problem, and that individual growers, representatives of cooperative associations, the State Director of Agriculture, the Oregon Agricultural Extension service, and the marketing specialist of Oregon State college be invited to attend. The committee further recommends that a plan be worked out whereby a real cooperative marketing organization be formed that will function as a real merchandising organization and not dump prunes into the lap of the speculators as at present. The committee also recommends that the grade of prunes be changed to a quality basis in place of the present basis of size.

At present shippers of mixed carlots of canned and dried fruits, vegetables and nuts are required to pay the carlot rate of the highest rate commodity included in the shipment. This rate prevents many small cooperatives and individual shippers from reaching markets now dominated by large dealers who support extensive distribution organizations. It is recommended that a committee be appointed by the general chairman of the Clackamas county conference to cooperate with committees from other Willamette valley counties in solving this problem. It is the opinion of the group that this committee will need to gather adequate facts on tonnage, possible sales outlets,

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etc., so that a comprehensive analysis of the situation can accompany the petition for rate change which is sent to the Interstate Commerce commission.

Realizing that efficient marketing is one of the necessities in our present farm program, we believe that the cooperative marketing system already established should be greatly extended.

Existing cooperatives should be encouraged to work in closer contact with one another, helping each other whenever possible in establishing new markets, or giving any information or help feasible. Moreover, all cooperatives should be encouraged to deal preferably with other co-ops in their buying and selling operations.

It is also recommended that the formation of consumers' cooperatives among the city folks as well as among the farmers be encouraged so that the cooperative producers can get in contact with the ultimate consumer and sell directly from producer to consumer at a minimum overhead.

### Farm Credit

The effect of the depression years was felt most heavily by those farmers who carried a heavy debt. For in the past, too liberal use of credit was made, especially mortgage credits, and debts were incurred through speculative land values. When the crash came and values dropped, debts did not shrink accordingly. Markets for farm crops suffered the same shrinkage and debt obligations could not be met. This depressing condition affected every member of the family and the farm morale was decidedly lowered.

The general trend of terms and rates for farm mortgages has shown decided improvement in recent years. Terms have been lengthened and rates lowered, both due largely to the various governmental loan agencies. Interest rates at this date are the lowest in the history of the state. Liquidation of indebtedness as fast as possible is advisable, and no further expansion of farm operations is recommended unless it can be done without fur-

ther incumbering land already owned.

All evidences indicate a decided increase in farm activities during the next five years. Locally there is a decided "back to the farm" movement. In addition, considerable immigration from the middle west is expected—in fact, is already coming.

In purchasing a full time farming unit, the percentage of indebtedness that may be safely assumed is an important question. We recommend first of all that not all ready money be invested in land and that a liberal working capital be retained for necessary operating and living expenses the first year. After the working capital is earmarked, we believe an indebtedness of 50 per cent of the purchase price may be safely assumed provided the purchase price is based on production value of the land and not on a speculative value, and provided also that the purchaser is experienced in growing the kind of crops for which the land and climate are adapted. If the prospective farmer is unable to comply with the above conditions we deem it safer to rent for a term of years until financially able to make a sound investment.

In all farm operations there are times when the farmer feels the need of short term loans for seasonal working capital. One of the most valuable assets in all lines of business, including farming, is a good line of operating credit. Readily available short time loans to pull through emergencies often mean the difference between success and failure. Successful businessmen and farmers readily admit that a good line of credit, if properly managed, is a big factor in any business venture. The following questions then arise:

1. Under what conditions is it safe to borrow money? The committee suggests that borrowing may be desirable for harvesting and marketing crops, for the purchase of livestock if crops can be more profitably fed than marketed otherwise, and in rare cases, for the purchase of concentrated feeds or grains not grown on the farm with which to mature livestock not otherwise fit for market.

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2. What information should the farmer supply his creditor in asking for a loan? The committee believes that farmers should learn how to make out a complete financial statement showing assets and liabilities accurately stated. Nothing should be concealed. In no other way can the confidence of the lender be obtained.

3. What steps should be taken in case the debt can not be met at maturity? The committee believes that credit can not be maintained without frank and candid understanding between creditor and debtor. If obligations can not be met on the due date the debtor must so inform the creditor in advance giving full explanation of the reasons and conditions affecting the non-payment. The sympathy of the creditor can not be obtained nor maintained if vital facts are obscured. Suspicion once aroused becomes deadly and future credits are nil.

The committee is of the opinion that abundant credit facilities are now available. We find no urgent need of additional mortgage credit, production credit or marketing credit.

### Land Utilization

There are 1,195,520 acres of land within the boundaries of Clackamas county, of which 587,765 acres are in private ownership and the county owns 6,502 acres of tax title land. Other public lands belong to the federal government, the state land board, and municipalities. In

the national forest there are 556,410 acres.

The acreage of county owned tax title is likely to increase. This condition is no cause of alarm, however, because of a recent survey that has shown that most of the land so owned is cut-over, or rough and inaccessible, and probably is submarginal for agricultural uses.

Much of this acreage may have been purchased by persons thinking it to be farm land, and after realizing no profit on their investment let it go for taxes.

The committee believes such land should be reforested, and in favorable cases seeded to permanent pasture mixtures of approved perennial grasses and legumes. Most of it is not in condition for immediate sale. Tax collections are improving on good farm land and such land is not reverting to county ownership.

Table I shows the usage of privately owned land and table II shows agricultural development of Clackamas county from 1880 to 1935. The number of farms has increased in a surprising manner. In 1920 there were 3,836 farms in the county, while according to the 1935 census, the number increased to 6,200 farms, an increase of 62 per cent. During the same period, the number of improved acres increased from 118,658 to 141,250, an increase of only 18 per cent. The average improved acres per farm has decreased from 30.9 acres in 1920 to 22.8 acres in 1935, a decrease of 26 per cent.

**Table I, Land Ownership, Clackamas County, Oregon**

Source of data: Forest Statistics and 1935 census of Agriculture

	Acres	Per Cent of County Area
Total County Area*	1,202,413	100
Privately owned land, total	587,765	48.9
Land in farms	336,838	28.0
Other private owned land	250,927	20.9
Public lands, total	614,648	51.1
State lands	.....	.....
County lands	5,695	.5
National forest	541,153	45.0
Other federal lands	67,800	5.6

\*The total area for the county as determined by this survey does not always agree with hitherto accepted total area data.

Tabulated by the Oregon State Agricultural College Extension Service.

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## TABLE II, AGRICULTURAL DEVELOPMENT

Census of	All land in farms Acres	Pct.	Number of Farms	Average Size of Farms	Improved land in Farms		
				Acres	Pct.	A. per Farm	
1880.....	246,280	20.6	1,385	177.8	70,674	28.7	51.0
1890.....	260,990	21.9	1,771	147.3	91,458	35.0	51.6
1900.....	298,491	25.0	2,568	116.2	90,061	30.2	35.0
1910.....	301,009	25.2	3,646	82.6	103,371	34.3	28.3
1920.....	285,910	23.9	3,836	74.5	118,658	41.5	30.9
1925.....	300,084	25.1	5,024	59.7	122,819	40.9	24.4
1930.....	290,573	24.3	4,747	61.2	124,856	43.0	26.3
1935.....	336,838	28.2	6,200	54.3	141,250	41.9	22.8

Note—Total area of county is 1,195,520 acres.

Source—U. S. Census of Agriculture, retabulated by O.S.C. Extension Service from "Statistics of Agricultural Development in Oregon."

It seems unlikely that material progress can be made in increasing the average acreage on Clackamas county farms. A great number of farms are now too small and intensified production is necessary if a living income is to be realized. Some additional subdivision would follow in case of extensive irrigation.

Farms not now operated are in many cases marginal, and cannot be brought into profitable production without great expense. To further subdivide farms, in view of the figures given above, is to invite disaster, unless irrigation water can be obtained on a large scale, and more intensive types of farming are pursued than found on the average farm at present.

Some undeveloped lands are available for settlement. Nearly all are uncleared and are scattered in various parts of the county below 1,000 feet in elevation. Clearing is necessary and the committee believes the average cost of clearing will average \$100 per acre.

The committee considers it desirable for the average farm family to have a gross income of \$4,000 a year so they may enjoy a good American standard of living. A gross income of \$4,000 on a small farm can be had only through highly intensified farming. In case of indebtedness the gross income should be increased in sufficient amount to pay interest on the mortgage plus annual principal payments of 5 per cent of the orig-

inal amount of the mortgage.

Under these conditions the committee believes there is no room for a large number of additional farm families in Clackamas county and believes the formation of organizations to advertise, foster, and encourage the migration of large numbers of settlers to this county from states further east to be a great mistake.

Excepting farmers who are experienced in specialized poultry, vegetable or berry production, the new family coming into Clackamas county should, in the opinion of the committee, obtain at least 50 acres of fertile cultivated land; and even then, it is the opinion of the committee that some intensified farming is desirable. An investment of \$8,000 to \$10,000 in land equipment and operative capital is desirable if the family is to have a comfortable income.

The committee believes there are many farms in Clackamas county that are submarginal. These are located mostly in the Cascade foothills above the 1,000 foot level, and many now are being abandoned, while others under the same conditions are being cleared. The residents on such farms need an investment of \$20 to \$24 per acre for ground limestone and phosphate-bearing fertilizers, and the committee believes families so situated should be re-located or cared for where they are before new settlement is encouraged on a wholesale scale.

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Some betterment in conditions on these farms can come through poultry and berry raising where a small acreage can be highly fertilized, and where possible by growing some of the newly introduced legumes such as hairy vetch and crimson clover. A general upbuilding of such farms on which the soil is shallow is of doubtful value. Farm purchasers may be guided away from such lands by the following methods:

1. Consult the Oregon Agricultural Extension service concerning the location, soil type, land value, and general conditions before purchasing.

2. The newcomer should rent for a time until he has opportunity to study local conditions, crops, and methods of farming.

3. See his prospective farm in summer when pernicious weeds which might be growing are in evidence.

4. The committee believes that no agency can deny a purchaser the right to make a deal, either good or poor, but suggests that each newcomer be given literature explaining farming conditions in the state in a true and unbiased manner at the time he secures his non-resident car permit or a new car license.

The committee feels that the manner of handling logged off lands not in farm ownership is of interest to farmers and to the public as a whole.

The local fuel supply is becoming a problem and logged off lands not reforested help add to this problem. Moreover, such lands when homesteaded make unwholesome competition for the established farmer for frequently such land is marginal farm land.

The committee feels that a land classification program is highly desirable and is favorable toward continuation of the reappraisal program and equalization of the farm tax burden, which has been partly completed by the county assessor.

We have no means at present of controlling settlement on marginal and submarginal lands in private

ownership. The committee recommends that a state law be enacted giving county courts the authority to zone such lands against further settlement. It also suggests that federal or state funds be provided to buy out settlers now located on such areas. The temporary order withdrawing all federal lands from homesteading should be made permanent. Restriction of settlement in isolated cut-over and shoestring valley areas, probably would save unwarranted school and costly road service to such areas with a small population.

From the farmer's standpoint, with possible exception where conditions are especially favorable, a part-time farming is not desirable. The committee feels that in many cases the same equipment is needed for farming a few acres as needed on a larger farm. When the owner is employed off the farm his wife and children have to do the farming, aiding in destruction of the market which the established farmers would enjoy. They also, in many cases, because of little attention to good farming, produce products of low quality that injure the market structure. It is felt further that industry is inclined to favor part-time farming by its employees because such farming lessens the responsibility of industry for furnishing full time employment and of caring for those unemployed. In many cases, also, part time farms are so located that transportation of the employee to and from work is not practical.

The committee is of the opinion that business and professional men who are fully employed should not buy farms which they must operate with hired help. Usually such farms result in financial loss to the owner and they produce products in competition with existing farmers who must depend on the land for a living.

Clackamas county farms contain many variable soil types that cannot be fully utilized unless planted to crops best adapted to these soils. The committee suggests that established farmers and new farmers consult with the county agent or other competent agriculturists

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and work out a cropping program that will increase the proper utilization of their farmed lands.

During recent years there has been an alarming increase in the number of mortgage foreclosed farms in Clackamas county. This committee suggests that lending agencies employ a field force of farm advisers whose duty will be to advise with borrowers and assist them in planning their farm programs so that delinquencies may

be avoided. Some lending organizations are now following this practice.

(Signed)

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It is the opinion of the soils committee that the soil is Clackamas county's most valuable resource. All phases of agriculture are directly dependent on the soil and agriculture can last no longer than the soil upon which it is founded. Any program for a permanent agriculture must include a program that will provide for the fullest utilization and conservation of the soil. That such a program is necessary for the permanent operation of the individual farm should be emphasized.

Since 1880 the area of improved land per farm in Clackamas county has been reduced from 56 to 24 acres. This emphasizes the need of following management practices permitting full utilization of the soil resources in order to maintain large enough per-acre yields to permit farm families to maintain a satisfactory standard of living from the smaller acreage.

### Soils Survey Report

The committee feels that a sound agricultural program must be based on proper soil utilization. Crops should be grown only on soils adapted to their growth. A soil survey report of Clackamas county is available. Every farmer should consult this report in order to determine what crops his soil is adapted to. This is particularly important when planning on growing long-time crops such as orchards. Orchards should never be set out on a soil without first

carefully checking the soil as to drainage, depth, and soil fertility. Newcomers are urged to consult this soil survey report in order to pick out a farm having a soil type adapted to the type of farming which he is particularly anxious to follow.

According to the soil survey report of Clackamas county there are three groups of soils. Group 1 is composed mostly of the so-called Red Hills or Residual soils. Most of these soils are becoming acid and respond well to limestone and fertilizers high in phosphorous content. They grow berries, fruit trees, and nuts where deep enough and high enough in fertility. Vetch and oats, some grass seed, and general farm crops, are grown according to fertility and farm practice. These soils respond well to irrigation where water can be obtained.

Group 2 is composed of the Old Valley filling soils. This is the general farming group and grows a variety of farm products too numerous to mention. Their adaptation varies with depth and drainage requirements and the well-drained types, such as Willamette loam, will grow crops not adapted to Amity Silt loam often adjacent. These soils are somewhat acid but usually grow red clover in the rotation without liming.

Group 3 is composed of Recent soils mostly found adjacent to streams. Soils of the Newberg and Chehalis are related series where

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not subject to flood erosion, are deep, mellow and fertile and grow alfalfa without use of lime.

### Conserving Soil Fertility

In order that farming may be continued on a permanent basis, it is absolutely necessary that every precaution be taken to conserve the fertility in the soil. The committee feels that from the farming standpoint, the best possible way of conserving the soil is to follow farming practices that keep up the organic matter supply in the soil. On the general farm, the best means of keeping up the organic matter supply is to follow a crop rotation including some legume crop. This legume crop not only builds up the supply of organic matter, but also adds a valuable supply of nitrogen to the soil.

Where there is any amount of livestock on a farm, the use of a permanent pasture in a regular rotation is recommended as being an economical method of rebuilding the organic matter supply of the soil. A rotation should be worked out so that every field in the farm would be in a permanent pasture once every 10 to 20 years.

Where legumes are no longer successful the soils of Clackamas county, particularly of group 1 respond to use of Calcium purchased mostly as ground limestone or hydrated lime. High grade ground limestone is the more economical form to purchase and because there are no known extensive local deposits, the limestone supply is one of the growing agricultural problems to be reckoned with. If and when the Columbia river and its tributaries are canalized it is hoped that low river barge service may bring cheap limestone from east of the Cascades.

It is apparent that the use of chemical fertilizers is here to stay on some soils or they must be abandoned for farming. Where chemical or so-called commercial fertilizers are needed, it has been frequently demonstrated in field trials the past ten years that phosphorus is the limiting factor and should be given first consideration in purchasing mixed fertilizers.

Little phosphorous is added with barnyard manure and cover crops and must be purchased in the bag.

Nitrogen is next in importance and some crops respond remarkably well to the use of potash, but it is believed by the committee that the use of this element has been overemphasized by some.

Blind use of fertilizers is not recommended by your committee. The use of high analysis fertilizers up to date is recommended as the most economical, but growers not well-acquainted with fertilizer purchase and application should consult the extension service or neighbors well acquainted with their use.

### Cover Crops

With orchards or other permanently cultivated crops, the best method of maintaining the organic matter supply in the soil is to follow the practice of growing cover crops every winter. The variety of crop to grow for a cover crop will largely be determined by the individual's soil type, preferably a legume should be included with the crop sown, although if the soil is not adapted to the growth of legume crops, some other crop may be more desirable. This cover crop is absolutely essential in order to avoid unnecessary loss of plant food by leaching and the actual loss of soil by washing or erosion.

The proper conservation of soil fertility requires that all crop residue be returned to the soil. In this connection, the practice of burning straw stacks, combine rows, and stubble is a wasteful practice because of the fact that large quantities of plant food are destroyed that might otherwise be returned in the soil. Not only is plant food wasted but also a valuable source of organic matter is lost. In this connection further study is needed regarding methods of spreading straw and concerning adaptable tillage implements that will permit straw being plowed under without too much additional labor.

Further investigation is also needed on the possibility of adding nitrogenous fertilizer to straw in order to hasten its decomposition

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and make better use of the organic matter in the straw. Present knowledge indicates that the addition of 20 pounds of nitrogen (100 pounds of 20 per cent nitrogen fertilizer) will greatly increase the value of straw added to the soil.

On farms with livestock, a loafing shed is recommended as a means of making the best possible use of this straw. An adequate supply of straw is placed in this shed at harvest time and during the winter months the livestock are permitted to spend most of their time in this shed. The result is that in combination with the manure from the livestock, the straw makes a very valuable fertilizer.

### Conservation of Farm Fertilizers

The use of lime and commercial fertilizers is recommended only in conjunction with the use of barnyard fertilizers, cover crops, and crop residue.

The soils committee believes there has been a tremendous waste in the value of barnyard manures in Clackamas county because of poor farm storage. The liquid waste from farm animals contains one-half the total nitrogen and 70 per cent of the total potash produced. Too often this valuable part of the fertilizer is allowed to escape and run off as waste to get rid of it.

Where manure is left outside or in dry pits it loses one-half its fertility value in from two to five months. It can readily be seen, therefore, that in ordinary farm storage practice from sixty to seventy per cent of the fertility in the manure produced never reaches the soil.

The committee recommends the use of liquid manure pits, made cheaply of wood from plans which may be obtained from the county agent, as the best method of avoiding this waste.

Storage equipment and a home-made tank spreader may be made for about \$20 per cow. There is practically no loss of fertility in pits when its contents are kept

covered with water, and the fly nuisance is greatly lessened.

Where straw is cut in four-inch lengths or less it may be used in the pit and will run through the pump or by gravity into the tank spreader. This method is further recommended as a great labor saver.

Of almost equal value in conservation of fertility are loafing sheds for use of livestock in winter or at any time when confined to barn lots. Loafing sheds are dry. Frequent application of straw keeps it clean and manure which is tramped does not heat and lose its fertilizing elements.

The committee recommends use of superphosphate in the gutter behind dairy cows. Superphosphate lessens bacterial action in the manure produced while lime liberates the nitrogen in manure and is one of the worst materials which can be used for this purpose.

Twenty pounds of superphosphate per ton of manure in the pit lessens bacterial action and balances the other fertilizers contained.

Best use may be made of manure by applying it to the soil at a time when growing crops will utilize the available plant food. This means that ordinarily the proper time is early in the spring previous to seeding crops. On most farms greater benefit could be secured from manure by spreading it on the land in comparatively small amounts, if possible not over eight to ten tons per acre. More increase yield per ton of manure will be secured in this manner than where heavier applications are used.

### Erosion

Soil erosion is a greater problem from the farmer's standpoint than most people realize. Losses by erosion that occur in this area are so gradual that they are not generally noticed. Nevertheless, there are many farms in Clackamas county where the loss of soil from erosion has been so serious that these farms can no longer be farmed profitably. It is extremely important that losses from erosion be prevented as much as possible since soils once washed away can

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never be replaced. Under average conditions ordinary good farming practices which maintain a good organic matter supply in the soil and provide a good cover for the soil during the winter months will largely prevent erosion losses. On any sloping soil, farming practices should be followed that will not leave the soil unprotected during the winter months. If at all possible some other system of farming should be worked out that will make it unnecessary to plow the land in the fall or winter leaving it exposed to washing during the winter previous to spring seeding.

From the standpoint of long time return from the land, and for the prevention of losses by erosion, many of our steeper hill soils could better be seeded down to permanent pasture rather than farmed continuously.

The loss of soil by erosion is particularly serious in orchards or other cultivated crops and in order to prevent this loss it is absolutely necessary that the soil be protected with a cover crop during the rainy winter months.

### Drainage

The actual method of tiling will depend greatly on conditions encountered on the individual farm. Anyone installing tile should secure the services of some experienced person in determining the depth to place the tile, the distance between the laterals, and the different sizes of tile to use. The proper depth and distance will vary greatly with the local soil type. It is well to have a drainage plan for the entire farm worked out before laying any tiling. This will permit the installation of a small amount of tile at a time knowing that this tiling will become part of the future complete system and that it will not be necessary to dig up and relay the tile at a future date.

The committee feels that it is not economical to use any tile smaller than four inches in diameter, and, that unless exceptional conditions are encountered, the tile should be placed at a depth of 24 inches or greater.

The committee realizes that there are conditions where it is impossible to install tile drainage. Either because there is a lack of finances on the part of the individual farmer, an outlet that will not permit the tile to be placed at an adequate depth, or a soil type in which drain tile will not work. Where such conditions are encountered, open ditches should be used to carry off the surface water.

In some sections of the county, community organizations will be necessary in order to provide adequate drainage outlets for individual farms. The committee feels that these organizations should be completed in order to construct and maintain these outlet ditches.

### Irrigation

The committee feels that because of the lack of summer rainfall in Clackamas county, that where economically possible, irrigation is a sound practice. Weather records at Portland dating back 65 years indicate that there never has been an adequate supply of moisture to maintain crops expected to grow throughout the summer months. Contrary to popular opinion, these records do not indicate that the summers are drier at the present time than they were twenty or thirty years ago, indicating that one may start irrigation with the idea that it will be a permanent enterprise.

The committee feels that the application of irrigation water should be of benefit to any crops expected to grow throughout the summer months, but that the actual expense that one could afford for irrigation can only be told after a careful consideration of the cost of irrigation as compared to the increased returns from irrigation. Experience has shown that under proper management yields of many crops may be doubled under irrigation.

According to the soil survey report of Clackamas county there is an area of 168,000 acres to be irrigated, 75 per cent of which is improved.

At the present time water is available for only a small percentage of this area, being limited to

## REPORT OF SOILS COMMITTEE

the natural flow in the streams and in a very limited area to that by pumping from wells. The committee feels that the irrigation of a much larger area of land than permitted by present water supply is a sound development, therefore we commend the program of the United States army engineers in studying storage sights to provide a more adequate supply of water during the summer months, and to reduce the annual loss from floods. We urge that their findings on ground water be made available to the public as soon as possible, in order to assist persons who are contemplating irrigation from wells.

Because of the fact that any large number of new settlers brought into Clackamas county would mean further subdivisions of already established farms, the committee feels that a development of irrigation is especially important since it will permit an adequate income to provide a satisfactory standard of living from a much smaller acreage than where the land is not irrigated.

Crops grown successfully under irrigation have included Ladino clover pasture, red clover for both hay and seed, alfalfa, potatoes, berries, and a wide variety of vegetable crops.

For the general farmer, irrigated ladino clover is recommended as being a very profitable crop wherever livestock is produced. Experiences in this county have shown that this irrigated pasture will have a capacity of two to four cows per acre for six months out of the year and other stock are carried in this proportion. This means that this number of cows will receive most all of the feed from this pasture during this period of time. Probably no other feed crop can be grown that will produce a greater return per acre.

Because of the fact that the irrigation problems will vary greatly on individual farms, it is recommended that each individual planning on installing an irrigation project have the irrigation plant designed carefully to fit their individual conditions. Such assistance

is available through the County Agent's office. The committee feels that because of the increased interest in irrigation that the extension service at the Oregon State college make available more technical assistance on irrigation in order that individuals may avoid costly mistakes.

The committee recommends that any person starting an irrigation project file an application for a water right with the state engineer's office at Salem, and complete the work necessary to secure this right as soon as possible. This water right is for the individual's own protection. If the individual does not file, he may have the water taken away from him, losing the money he has invested in the irrigation system.

Some type of surface irrigation is generally recommended, although there are many places where rough land, soil type, water supply, or nature of the crop might mean some form of sprinkler system would be more desirable. Where flood irrigation is contemplated, the importance of properly levelling the land before seeding cannot be too strongly emphasized. Where it can be used, the strip-border method of irrigation is recommended. Experience has shown that the expense of properly levelling the land is repaid in the resultant saving in water and labor of application.

If Ladino clover is to be sown, the land should be prepared for irrigation in the fall or early in the spring. While successful plantings have been secured by seeding at many different times of the year, probably most of the successful seedings have been made in April. Seedings are made at the rate of three to five pounds of seed per acre on a well-prepared, firm seedbed. Better returns may be secured from this clover if it can be handled in such a manner that the stock may be kept off of the land immediately after irrigation. Best results have been secured by dividing the pasture into at least three fields and rotating the stock.

Where it is necessary to irrigate by pumping, the pumping plant

## ORCHARD SOIL MAINTENANCE

should be carefully picked out to fit the individual requirements. In most cases, the centrifugal type of pump seems to be the most economical type of pump to purchase. Every centrifugal pump is constructed to fill a certain requirement and if placed under conditions other than those for which it was designed it will not be an efficient piece of machinery. For this reason, the pump should be purchased on the basis of the water required, the total pumping head against which the pump must operate, the water available, and the type of power available. The beginner in irrigation is urged to determine these conditions, turn the information over to a reliable pump dealer, and let the dealer select the pump best suited to the job. Pumps offered by dealers may be compared on the basis of the amount of water delivered with a given horse power. Pump purchasers are entitled to a guarantee of performance from the dealer. After every pump is installed it should be checked to determine whether it lives up to its guarantee. Because of the variation in construction of centrifugal pumps and because to outward appearances they may all look the same yet have entirely different performance, second-hand pumps should be avoided, unless one has absolute assurance that the pump is fitted to his individual requirements.

In order to achieve the best results from irrigation, crops should be irrigated as soon as they show signs of needing water. Past experience has shown that many

people do not get full value out of irrigation because of the fact that too long a time elapses between irrigations, allowing the crops to stop their growth from lack of moisture. Another mistake that is often made is that the first irrigation is delayed too long. It is good insurance to have the irrigation equipment ready for use by May 1 to 15, since in many years it is necessary to start irrigation by May 15. Best results will be received from irrigation if the crops are never allowed to slow down their growth because of lack of moisture.

The committee recommends that further work be done by the Oregon State College Experiment station as to the actual amount of water to apply on different soil types and for different crops. Further experimental work is also needed as to the best methods of applying water in order to achieve the most economical use. Further investigational work is also needed to find additional crops and best varieties of crops to be grown under irrigation.

(Signed)

Chairman

H. C. COMPTON, Rt. 3, Boring.  
GEO. SCHAEFFER, Boring, Ore.  
CARTER SMITH, Colton, Ore.  
W. H. ZIVNEY, Rt. 1, Oswego, Ore.  
WALTER STONE, Beavercreek.  
HOWARD BERTSCH, Oregon City.  
MAURICE BUXTON, Molalla, Ore.  
CARL FEYRER, Molalla, Ore.  
HAROLD JOHNSON, Colton, Ore.  
BRUNO STRUVE, Rt. 2, Sherwood.  
BYRON RANDOLPH, Estacada.  
J. R. GRAHAM, Estacada.

## ORCHARD SOIL MAINTENANCE

The humus supply in the orchard needs annual attention. This is necessary to supply soil fertility and assist in preventing erosion. Orchard soils become more depleted of soil fertility year by year and trees are larger and demand more plant food.

Suggestions for soil maintenance are as follows:

Ten tons of cover crop per acre annually. The decaying cover crop

and action of the root systems are beneficial to orchard soils in a way not attained by other methods of fertilizing orchard soils. These cover crops assist in preventing soil erosion and leaching.

Other suggestions for orchard soil maintenance when available are:

Stable manure, 10 or 12 tons spread over the orchard annually.  
Clover straw,  $2\frac{1}{2}$  to 3 tons per

## REPORT OF FARM CROPS GROUP

acre, annually, or alfalfa hay refuse.

Straw, 2½ to 3 tons annually supplemented by addition of 100 to 150 nitrogen fertilizer per acre applied in the fall and disked in, and a cover crop seeded.

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

Winter barley and vetch are leading orchard cover crops. Amounts of seeding vary, 30 to 60 pounds of vetch and 60 to 100 pounds of barley being advised. Seed early in fall, plowing under early in the spring.

Other cover crops are vetch alone 60 to 80 pounds per acre; winter grain, 100 to 150 pounds per acre; turnips, three pounds per acre; rye for thin soils, 75 to 100 pounds per acre; winter barley 60 to 80 pounds; crimson clover, 10 to 15 pounds per acre shows promise as a cover crop on some upland soils. Mixed grains and vetches

may be used but avoid noxious weeds.

### Soils for Trees, Fruits and Nuts

The soil for trees, fruits and nuts should be six to 10 feet deep, well drained and of such texture that roots will penetrate it easily.

Shallow soils, those underlaid with rock, hard pan and soils with high water tables are totally unsuited for good tree health and high production. On such soils growers are faced with production problems early in the life of the orchard. These difficulties are more pronounced during dry seasons.

Hundreds of orchard products and hundreds of thousands of dollars have been lost to investors in the Northwest because orchards have been placed on the wrong kind of soils. Soils that produce profitable annual surface crops may not be at all suitable for orchard plantings.

Signed:

O. T. McWHORTER,  
Secretary.

## REPORT OF THE FARM CROPS GROUP

The acreage of potatoes in Clackamas county has remained about the same for the last 25 years, except for small yearly variations. The United States census and official estimates show the production in the past as follows:

	Source	Acres
1889	Census.....	2,330
1899	Census.....	4,865
1909	Census.....	7,468
1919	Census.....	6,658
1924	Census.....	5,378
1929	Census.....	5,127
1930	Estimate.....	7,000
1931	Estimate.....	5,127
1932	Estimate.....	6,500
1933	Estimate.....	5,000
1934	Census.....	6,442
1935	Estimate.....	6,000

While the total acreage has remained about the same the growing of seed potatoes has increased materially in the last few years in line with the recommendation of the Clackamas County conference held in 1925. This has developed as follows:

1930.....	160 acres
1931.....	400 acres

1932.....	500 acres
1933.....	500 acres
1934.....	No report
1935.....	2,000 acres

Source: County Agent's sample census.

Eleven years ago Clackamas county was the largest producer of potatoes in Oregon producing about 15 per cent of the state's total crop. Tendency toward increases in other crops and increases in other sections have materially changed this.

Yields of commercial producers are undoubtedly higher than shown by the United States census as such figures are cut down by small lots of poorly cared for crops produced largely for home consumption. Conservative estimates place yields of commercial producers at 60 to 75 sacks per acre of marketable potatoes.

Cost of producing potatoes during the last 10 or 12 years, has increased. Studies indicate that costs per acre vary from \$65 to \$80.

Markets for Clackamas county

## REPORT OF FARM CROPS GROUP

potatoes have become sharply defined in recent years, particularly for table stock, which finds a market now largely in the county and Portland markets. Serious inroads on the Portland market have been made by potatoes from the irrigated sections.

The markets for Clackamas county potatoes are as follows:

1. Table market in county and Portland.

2. Seed market for certified and high grade uncertified Garnet Chile in California. (Market for uncertified decreasing rapidly.)

3. Seed market for certified White Rose in California.

4. Seed of certified Burbanks for local and state markets.

5. Early market supplies of Burbanks grown under irrigation.

### Recommendations for Clackamas Potato Growers

In view of the factors already mentioned and many other considerations it is recommended that future developments with potatoes take into consideration:

1. That average yields are too low for profitable production and that steps should be taken to increase the yield to an average of 80 sacks per acre marketable, or the land be devoted to other crops.

2. That the trend of planting in California markets is away from Burbanks and toward White Rose, and has this influence on seed markets.

3. That further work be done by growers in cooperation with the state college in cleaning up seed stocks of White Rose by tuber indexing and field selection.

4. That trials of White Rose in the various sections of the county be conducted by the county agent in cooperation with growers.

5. That, since grading of potatoes has been beneficial in the past, continued strict grading is essential for the future development of a desirable potato industry.

6. That a few growers make an effort to improve Bliss Triumph seed because it offers splendid market opportunity for seed stocks for early potatoes. Most seed stocks at present are badly diseased.

7. That growers of commercial table stock continue to use certified seed to improve quality of planting stock and that best results are had with seed not over one year removed from certified seed.

8. That growers of potatoes specialize in producing high quality seed potatoes, unless they have irrigation available to increase yields and decrease costs to a competitive basis with irrigated sections.

9. That much of the possibility of regaining Clackamas county's former position of leadership in potato production in the state will depend upon the development of this industry under irrigation. Proximity to major consuming markets and good yields of high quality potatoes under irrigation locally make this appear favorable.

### Hay Crops

The agricultural economic conference held in 1925 reported a total hay acreage of 27,500 acres with grain hays predominating and no alfalfa reported. It is shown by the

**1934 ACREAGE OF VARIOUS HAY CROPS IN CLACKAMAS COUNTY**  
United States Census

	Total Acres	Wild Grass Acres	Tame Grass Acres	Timothy and Clover Acres	Clover Acres	Alfalfa Acres	Vetch Acres	Grain hay Acres
1909	28,434	329	811	7,258	9,483	57	613	9,974
1919	30,385	794	2,113	5,407	5,943	85	.....	11,646
1924	40,223	366	2,935	3,179	18,003	121	.....	15,617
1929	32,515	603	2,058	1,589	7,053	281	2,760	18,171
1934	43,367	.....	.....	.....	13,761	757	9,683	16,219

## REPORT OF FARM CROPS GROUP

figures of the 1934 census that this hay acreage has increased to 43,367, with a very decided increase in alfalfa, vetch, and clovers.

These figures, however, hardly represent the present situation as seen by the members of the farm crops committee who feel there is a decided decrease in clover acreage, that stands of clover are increasingly hard to get, and that the clover seed crop is a practical failure.

Decreasing soil fertility and increasing soil acidity are rapidly becoming serious factors in the growing of many profitable and necessary crops on much of the farm land of the county. This is particularly true on the red hill soils classified in the county soil survey as Olympic, Aiken, Cascade, Viola, and Powell series, which make up almost half of the crop land of the county.

Vetch increases have, in many instances, consisted of plantings of hairy vetch on red hill soils of low fertility where production of other legume crops is limited.

Alfalfa acreage has increased over 600 per cent from 1924 to 1934, going from 121 acres in 1924 to 757 acres in 1934. Alfalfa hay is produced on lands adapted at a much lower cost per ton than any other hay crop. Material increases in livestock population, particularly dairy cattle, make available home markets for an increasing acreage. Soil types proven to be

adapted to alfalfa growing include the following, with an estimate of the number of acres of each:

Newberg .....	9,664 acres
Chehalis .....	8,704 acres
Willamette .....	48,448 acres

Total .....66,816 acres

### Recommendations for Hay Crops

1. It is recommended that farmers cooperate with the county agent in making further trials and demonstrations of the use of lime and phosphorus on soils failing to grow good crops of clover and other legumes.

2. It is recommended that all farmers give careful study to the report of the soils committee of this conference, as a proper understanding of the fertility problem is becoming increasingly important.

3. It is recommended that further trials of new legumes be made by farmers in cooperation with the county agent, giving particular attention to the use of crimson clover as a cover crop to build up soil fertility.

4. It is recommended that the general chairman of the conference appoint a committee to cooperate with the county agent to try and locate cheaper sources of lime, cheaper freight rates, and in general, a supply of good lime that will be economically feasible for farm use in this county.

5. It is recommended that the alfalfa acreage be increased on soils of the Willamette, Newberg,

### ACREAGES OF THE PRINCIPAL CROPS AND TRENDS FOR CLACKAMAS COUNTY ARE INDICATED AS FOLLOWS United States Census Figures

	1909	1919	1924	1929	1934
Total small grains.....	34,418	54,028	40,298	41,215	40,375
Wheat for grain.....	9,273	24,099	16,298	16,239	11,270
Rye for grain.....	62	729	132	101	408
Oats for grain .....	24,533	26,732	23,228	20,964	24,165
Barley for grain.....	536	660	664	1,513	3,094
Mixed cereals .....		1,808		2,309	1,322
Flax for seed.....				84	115
Corn—total acres .....			4,893	7,123	5,777
Corn for grain.....	835	2,042	1,065	2,311	2,466
Corn for ensilage.....			2,175	2,559	
Corn for fodder.....		1,008	1,263	1,749	

## REPORT OF FARM CROPS GROUP

and Chehalis series, and that soil tests be made before planting by the county agent to determine whether or not lime is needed. Seed of the Grimm variety only should be used, and the seed should be inoculated. Planting should be made without a nurse crop, preferably in May, on a well-prepared, thoroughly packed seedbed. Manure applied in the fall before planting is feasible. Land plaster at the rate of 75 to 100 pounds per acre at the time of planting should be used.

6. It is recommended that the acreage of grain hay should be reduced, and only where other hay crops are not doing well, that smooth "hairy" vetch with gray winter oats be used for hay.

7. Although spring planted grains for hay are not recommended, when necessary gray winter oats or hardy varieties of spring oats should be used for spring planting on red hill soils. They should be planted early.

### Cereal Crops

Grain crops occupy greater acreage than any other type of crop in Clackamas county, present figures indicating that nearly one-third of all cultivated land in farms is planted to cereal crops.

These figures indicate a decrease in acreage devoted to wheat and somewhat of an increase in grains for farm consumption. This decrease in the wheat acreage probably is justified as other grains seem more profitable than wheat in many instances.

Corn acreage has remained about stationary, with approximately 2,500 acres produced for grain. Many carloads of corn are imported into the county for poultry and other livestock feeds. The price averages approximately \$30 per ton and production is more per acre than most other grains. Corn also is an outstanding crop for use in crop rotation and might easily replace some of the lower yielding potato crops. Corn is also adapted to production with the minimum of equipment and hired labor.

### Recommendations for Cereal Crops

1. It is recommended that wheat

be grown for local consumption and feeding only, and that the following varieties for fall be used: White Holland, Jenkins Club, White Winter, and Kinney. Spring wheats: Huston, Marquis, Jenkins Club, and Kinney. Selection of the individual variety may depend on local experience.

2. Oats. For fall planting the gray winter variety is recommended. For spring planting Victory, Kanota and Three Grain are advised.

3. Barley. Very little fall barley is grown, and it is recommended that a trial be made of O.A.C. No. 1 winter barley. Hannchen barley grown for spring planting. Hannchen is the only malting barley advised.

4. Seed treatment. Ceresan for treating oats, wheat and barley. Its cost is practically the same as older methods and it is not as objectionable to use.

5. Corn. It is recommended that the county agent conduct a number of corn trials in the county on various soil types. It was pointed out that there was a splendid possibility for a limited number of farms in production of selected seed corn and also the possibility of improving the production by a crossed in-breeding. Farmers should make a thorough study of the possibilities of artificial drying of seed corn as carried out in some nearby counties, and plans for corn driers and corn cribs should be made available for farms of the county. For grain purposes, Minnesota 13 corn is recommended until some other variety proves superior. For silage purposes the committee recommends trials of McKay, Yellow Dent, Pride of the North and Golden Glow.

### Flax

Fibre flax production is well suited to the southern part of the county and has been grown a number of years on the well fertilized better type of lands, particularly following clover in the rotation. The crop is well suited to rotations used in the county and fits well into the smaller farming systems. It provides a cash crop possibility on better soils. It is planned to

## REPORT OF FARM CROPS GROUP

plant more than 1000 acres of fibre flax in 1936. Tests of flax fibre produced in various sections of the Willamette valley indicate the fibre to be of exceptionally high quality. The United States imports flax fibre and linens in large quantities and there seems to be little danger of overproduction in this crop.

### Recommendations for Flax

1. Permanance of the fibre flax business in the county depends upon the development of proper local processing facilities. The only processing facilities at the present time are at the state penitentiary and many states boycott products produced by prison labor. The committee recommends support of farmers and business men in the present effort to establish a local processing plant.

### Seed Crops

Specialized seed crop production fits very well into the agriculture of Clackamas county and has expanded rapidly during the last 10 years. Seeds of this type sell at a much higher price per pound and are able to stand the freight charges for hauling to distant markets much better than grain and similar crops. Certain of the crops have reached the stage where they are on a commercial production basis and others are on a more or less trial basis.

Production of grass seed is being started on an experimental basis and the possibilities of growing this seed on some of the grain land are good.

Austrian winter peas. This crop is produced annually on approximately 3000 to 4000 acres and fits exceptionally well into the farm rotation. The principal problem in connection with this crop is the control of pea weevil, and future markets depend upon the control of this pest. It is urged that growers continue their past cooperation and efficient handling to maintain high standards. It is recommended that the acreage of this crop be kept about stationary unless new markets develop for the crop, or other sections are crowded out by weevil. The crop makes fair feed

as hay, if cut early, when the seed market is not good. Further developments of the proposed agricultural adjustment plan by use of soil conserving crops may materially increase the possibilities of this crop.

Hairy vetch. (Smooth vetch). This crop was produced on approximately 3000 acres of land in the county and has proven to be well adapted to the red hill soils that will not grow other legumes. On these lands the crop probably will increase to the point of reducing acreage on other soil types. In many instances farmers are planting gray winter oats with hairy vetch on poor soils, and are getting better yields than when the oats are planted alone and the hairy vetch in addition. There are special harvesting problems connected with the growing of this crop. The development of the soil conservation program mentioned above may make additional markets.

Tall meadow oat grass. Approximately 35 acres of this crop are planted in the county, yields thus far being quite satisfactory. This grass is well known throughout the United States and is used to a large extent in the pasture mixture.

Chewing fescue. This crop has been imported on the basis of almost a million pounds a year during the past 10 years. It is rather high in price and seems well adapted. Trial plantings have been made under the direction of the county agent and should be carefully observed.

Upland Reed canary grass. Upland Reed canary grass is one of the newer selections that has been planted in a trial way and should be carefully watched. They may prove to be well adapted to the more acid hill land of the county.

Meadow foxtail. Meadow foxtail is a grass with possibilities and probably handicapped more by its name than anything else. The committee recommends that efforts be made to have this grass re-named. A few plantings have been made successfully. This grass seems to be well adapted to use under irriga-

## REPORT OF FARM CROPS GROUP

tion and on some of the wetter lands. It is extremely palatable and probably a better pasture crop than a hay crop. While seed remains high in price farmers might profitably make plans for seeding a small area on their own farms for seed production purposes.

Meadow oat grass, chewing fescue, Upland Reed canary grass and meadow foxtail are perennials.

Crimson clover. Crimson clover is recommended on soils too acid for red clover and for soil improvement purposes. Plantings should be made only with the anthracnose resistant seed, and seed should be inoculated. Harvesting for seed yields have been favorable, and further expansion of this market depends upon tariffs and the soil conservation plan.

### Pastures

Pastures in the county are of two types, first, those of the lower yielding type of land that can be better pastured than cropped in any other way; and second, the highly developed and intensively handled, and sometimes irrigated pasture. The first type includes a rather large volume of woodland pasture that provides feed principally for beef cattle and sheep. The plowable pasture includes some of the better type soils and also some of the wetter and heavier soils. Sufficient trials of irrigation have been made on pasture to show the possibilities of returns from this source.

### Recommendations for Pasture

1. Pasture crops, if properly handled, for dairy cattle are one of the most profitable that farmers can grow.

2. Irrigation is advised and should be used wherever water is available, either by gravity or with pumping lifts of not over 50 feet in height. Most pastures are irrigated six to eight times during the year. On this basis a carrying

capacity of two cows per acre for seven months is possible.

3. It is recommended that soils for irrigation be properly prepared by leveling under the strip border method of irrigation.

4. Pasture mixtures for use under irrigation are advised as follows: Ladino clover, 4 pounds; English rye grass, 5 pounds; Meadow foxtail, 2 pounds.

5. For use on soils without irrigation mixtures are advised as follows: Tall oat grass, 3 pounds; orchard grass, 3 pounds; chewing fescue, 3 pounds (when seed is less than 30c per pound); highland bent, 1 pound (on waste land only); (When chewing fescue and bent can not be used, substitute English rye grass, 4 pounds; hop clover, 1 pound; Alsike, 3 pounds.)

6. For wet soils it is suggested to consult the county agent before planting.

7. On soils of the Willamette, Newberg and Chehalis series, without irrigation, Willamette stem-rot resistant sweet clover is recommended.

8. It is recommended that the county agent conduct a series of fertilizer demonstrations on both irrigated and unirrigated pastures.

9. It is recommended that pasture be divided into three or four fields and that rotation grass be practiced, that weeds and uneaten grasses be clipped with a mower once or twice a year to distribute manure.

(Signed)

Chairman

GEORGE D. BERG  
ALBERT EYMAN  
HAROLD RIDINGS  
ELMER KRUSE  
W. H. ZIVNEY  
JOHN HELLBURG  
A. L. HEACOCK  
ARTHUR BREMER  
C. H. SMITH  
WILL BELL

## REPORT OF DAIRY COMMITTEE

### Clackamas County Economic Outlook Conference

The number of dairy cows of milking age in Clackamas county as shown in the following table increased from 6,527 in 1890 to an estimated 16,000 in January, 1936. This table also gives the cow population by census periods of the United States, the eleven western states, and Oregon from 1890 to 1936.

16 years between the price of manufactured dairy products and the index of industrial payrolls.

The 1936 United States Department of Agricultural Outlook report indicates that dairymen are planning to increase their herds but at the present time have fewer heifers under two years of age on farms than will be needed for re-

#### NUMBER OF MILK COWS ON HAND

	United States		Eleven Western States		Oregon		Clackamas
1890.....	16,512,000 (1)		721,000 (1)		114,000 (1)		6,527
1900.....	17,136,000 (1)		867,000 (1)		109,000 (1)		7,124
1910.....	20,625,000 (2)		1,341,000 (2)		152,000 (2)		11,378
1920.....	19,675,000 (3)		1,541,000 (3)		200,000 (3)		11,237
1925.....	17,645,000 (3)		1,623,000 (3)		217,000 (3)		14,063
1930.....	20,499,000 (2)		1,814,000 (2)		222,000 (3)		13,269
1935.....	25,100,000 (3)		2,177,000 (3)		270,000 (3)		16,000

- (1) June 1
- (2) April 15
- (3) January 1
- (4) Estimates by B.A.E.

Source: U. S. 11 Western  
U. S. Census Reports  
Oregon, 1920-1930, Livestock, Meat  
and Wool Market Statistics.

The number of dairy cows of milking age in the United States increased from 1928 to 1934 at about 3 per cent per year reaching a peak estimated at 26,185,000 in the spring of 1934. During that same period pastures were very poor in some of the major dairying sections of the United States every year so that production increased only 1 per cent per year. The great drouth of 1934 accelerated a decrease in numbers and the natural decline in the cycle of cattle numbers has resulted in a decrease to an estimated 24,500,00 on January 1, 1936. During the past year prices of dairy products have been relatively low compared to feed grains, beef, veal and hog prices they are still low compared to the three latter items but have improved somewhat in relation to feed grains this winter. There has been a very close relationship during the past placement, so that there is no ap-

parent prospect of an increase in dairy cow numbers during the next two years. Attention is called, however, to the fact that the present numbers of cows on farms is not greatly different from the number on farms in 1933 when there was 100,000,000 pounds of butter placed in storage over normal storage figures.

It is probable that should consumers buying power decline, particularly as shown by industrial payrolls, that the demand for dairy products would probably fall off and by the same reasoning if consumers buying power increases the demand should increase and prices for dairy products will make further improvement.

#### The Situation in Clackamas County

The Clackamas County Economic Outlook Conference committee representing the dairy industry, be-

## REPORT OF DAIRY COMMITTEE

lieves the most outstanding developments recorded by the industry in the past decade to be; first, the improvement of the quality of milk and cream produced; and second, the establishment of cooperative marketing organizations for the handling of their products.

The committee further believes that the future of dairying in Clackamas county depends upon the production of a greater percentage of good quality feeds on the dairy farm and upon the ability of dairy men to reduce the cost of production of milk and butterfat.

### Recommendations for Clackamas County Dairying

Quality of production: It is believed that the success of the dairy industry depends to a considerable extent upon the production of high quality milk and butter. That production of such butter depends primarily upon the quality of cream produced, and that an educational campaign among the cream producers would be the most desirable method of improving the quality of cream. Clackamas county creamerymen report that following such a campaign in 1934 the average butter score was increased by two points. As this improvement was made when butterfat was low in price the committee feels that the dairymen of this county should be highly commended and encouraged to continue such improvement.

We recommend that manufacturers grade all cream purchased and pay for it according to grade so that there will be additional incentive for producers to take proper care of their cream.

Feeds to be produced: Dairymen should raise all roughage and succulence and where practical some part or all of the concentrates necessary to maintain their dairy herds. The tonnage and quality of legume hay is decreasing constantly, resulting in an already serious situation. The committee believes that mass irrigation and use of lime and phosphorous fertilizers is essential if the dairy industry on upland soils is to continue on a prosperous basis.

Dairymen who have access to large tracts of rough cut-over land should grow adequate grass seed to seed such land unless they can make an investment of approximately three dollars per acre for this purpose. It is believed that a smaller amount of a good pasture mixture is more economical than larger seedings of cheap mixtures. Average up-land pastures require from 5 to 10 acres per cow, while the average Ladino clover pasture when irrigated will carry three cows per acre. It is the belief of this committee that the cost of production can be materially reduced through the use of irrigated pasture or good pasture mixtures on up-lands.

The committee believes that every dairymen should if possible provide a minimum of 25 pounds of succulent feed per day for each cow in milk either in the form of pasture, soiling crops, root crops, or silage.

Kale is the most valuable dairy succulent feed grown in the county and yields as a soiling crop more tonnage than other succulent feed. Dairymen should plant sufficient acreage of this crop each year to last them until about January 1. Occasional losses by freezing should not discourage the consistent use of this crop.

Size of units: The size of dairy herds in the county is believed to be too small for economical operation on farms where dairying can be considered a major enterprise. Where dairying is a major enterprise it is the opinion of the committee that a herd of ten cows is the minimum economical unit under average conditions. The smaller herds have a higher cost of production and it would seem that by increasing the size of herds in the county dairymen could decrease their costs of production.

Production per cow: The average production per cow in the county is believed to be too low to return a profit. The use of better feeds, such as legume hay and irrigated pastures, the continued testing for production, the culling of herds and the use of better sires are considered the most important

## REPORT OF DAIRY COMMITTEE

factors in increasing the production per cow.

We recommend that the possibility of organizing a dairy herd improvement association be investigated and if possible such an organization formed in the county.

**Quality of sires:** This committee has made an investigation as to the number of sires in use in the county in an effort to determine whether or not the quality of sires used has deteriorated during the past five years. Questionnaires were sent to leading dairymen in representative communities in the county. It was the opinion of 50 per cent of these dairymen that in their communities during the past five years there had been a marked decrease in the quality of herd sires used. This committee believes that some organized movement should be employed to improve the quality of bulls in Clackamas county dairy herds.

**Disease control:** It is the belief of this committee that disease control is being adequately cared for under the present programs of the federal government. It is suggested, however, that dairymen of the county take immediate advantage of the government Bangs disease control program while federal indemnities are available.

**The growing of stock for replacement and sale:** The committee recommends that dairy heifers be grown for sale only where a large amount of cheap pasture is available and then only from purebred sires from high producing families. Where feed is available the dairymen should grow their own replacements in order to get better quality heifers and to minimize the possibilities of introducing disease. Replacements grown should be by pure bred sires and from only the best cows in the herd.

**Type of production recommended:** All the Grade "A" and Grade "B" milk that can be absorbed by present markets is now being produced. Until further markets are developed production of

fluid milk should be maintained at its present level. Any expansion in dairying in Clackamas county should be made with a view of selling churning cream or manufacturing milk.

**Marketing dairy products:** Since the report of the 1925 Economic Conference the Dairy Cooperative Association has been organized and is taking most of the dairy products from the north part of the county. The Mt. Angel cooperative takes the majority of the dairy products from the south part of the county. This cooperative movement has been largely responsible for maintaining quality and prices during the existence of these organizations. These and independent creameries and distributors provide facilities adequate to insure a good market outlet for the counties' dairy products.

The operation of the Oregon milk control act has been of great service to the fluid milk producers in Clackamas county in stabilizing the marketing and distribution of fluid milk and we recommend continued support for this type of regulation.

We recommend that the present movement to put a national excise tax of five cents per pound on butter substitutes be supported. At the present time these substitutes do not pay as high a tax as those paid by butter and this excise tax will tend to correct this situation as well as be a national revenue producing measure.

The committee endorses the 4-H dairy club work and dairy projects being carried on by Smith-Hughes students. We recommend that where ever possible club members and Smith-Hughes students use pure bred heifers and that dairymen see that approved pure bred sires are made available to mate with these heifers.

A. MALAR  
VERNON HEPLER  
HOWARD BERTSCH  
R. E. SHICK  
JOHN I. GALE

## THE PRODUCTION OUTLOOK FOR SHEEP AND LAMBS

The general tendency at this time is towards increased numbers of sheep in the United States. This upward tendency however, may be somewhat restrained and may actually be stopped temporarily, at least, by the grazing policies that are being inaugurated by the Grazing Administration of the Department of Interior under the Taylor Grazing Act, and with the grazing policies on the national forests. At the present time there are enough sheep in the United States care for present needs.

The Oregon situation: The number of sheep in Oregon has varied somewhat since 1920, the heaviest production being between the years of 1929 and 1933. There has been a slight decline in numbers during the last two years in the state.

Clackamas county situation: It is of interest to note that the numbers of sheep in Clackamas county, has not varied greatly in numbers since 1920 to the present time. There have been years when there was a slight increase due to increased prices, however, the numbers at present are about on an even keel with past years. It is felt by the livestock committee that this is the logical balance for Clackamas county farmers to follow.

### Recommendations

It was the opinion of the committee that sheep raising on the farm flock basis in Clackamas county at this time is good business, and that over a period of years, a few sheep on every farm will return a very satisfactory profit and they will utilize feeds that might otherwise be wasted. It was felt, however, that under no circumstances should Clackamas county farmers overstock their farms with sheep to the point where there would not be sufficient feed to take care of them properly.

In considering the problems that confront the Clackamas county farm flock owners, it was the opinion that sheep-killing dogs were a serious menace. In view

of the fact that frequently dogs that are unwanted by owners in the city of Portland are hauled out on the highways and released and left to shift for themselves, these dogs frequently become killers and are a menace to the farm flock owners. It was pointed out that police dogs are as a rule the worst offenders. The Oregon state law provides that farmers are permitted to destroy dogs caught in or near their sheep at any time. The committee felt that the present law, so far as sheep were concerned, was entirely satisfactory, and they wished to commend the present dog control board of Clackamas county, and the various justices of the peace for their good work in helping to control this difficult problem. It is recommended, however, that all sheep men report immediately any losses that occur from dogs, to the dog control board in order that immediate action may be taken. In this way it is possible to render much more efficient service.

It was recognized by the committee that coyotes are on the increase in Clackamas county and that they are gradually moving down from the higher ranges into the lower country. It is recommended that the County Court be asked to re-establish the bounty system on coyotes and bob cats, as it was felt that when this bounty was in effect, it helped to control the number of these pests.

It was recommended that pure bred bucks be used on the flocks owned by Clackamas county farmers. It was pointed out that registered or pure bred bucks, properly selected, bring a larger return to the sheep owner than scrub bucks. It is also recognized by pure bred breeders that this point is not considered sufficiently by the raisers of market lambs. The pure bred breeder is confronted with a great deal of additional expense in raising good type bucks for the trade, and in order to continue in business it is necessary for him to receive a satisfac-

## PRODUCTION OUTLOOK FOR LIVESTOCK

tory price for his breeding stock. Such price should be materially higher than the market price of meat animals.

It is recommended that a market lamb show be considered as a means of teaching farmers the proper method of selecting lambs for market.

The feed conditions in Clackamas county make it desirable as a rule to lamb in January or February. A critical time in the lamb production is from the time the ewe is bred until the grass starts following lambing. It is recommended by the livestock committee that sheep raisers in the county should provide suitable feeds for the ewe during the time she is carrying the lamb and feeds to maintain the milk flow after the lamb is dropped, until the grass starts in early spring. Such a practice will insure a continued growth and development of the lamb so that he will bring more profit to the owner. The committee believes that grain feeding, the feeding of such grains as oats and oil meal are desirable to maintain the milk flow in the ewe. It is quite possible that certain fall sown grain crops such as rye will provide feed under certain conditions for this period.

It is recommended by the committee further that pasture crops should be provided to supplement native grass pastures where the lambs are not marketed by June 1. Such crops as rye, crimson clover, or any other suitable crops are recommended for this period.

The committee wishes to caution Clackamas county growers against placing their ewes on dry feed prior to lambing without some succulent feeds such as potatoes, a good quality ensilage, in the limited amount, or the use of linseed oil meal. Where silage is used it should be of the very best quality, free from mold. This procedure will tend to ward off such disease as ewe paralysis.

It is recognized by the livestock committee that the logged off lands in Clackamas county offer a possibility for pasturing with sheep. It is recommended that good pasture

mixtures be used, preferably good seed purchased and mixed by the farmer rather than the purchase of so-called logged off land pasture mixture. It was recommended by members of the committee that farmers be encouraged to plant their own grasses in small plots and harvest their own seed in order to reduce the expense of seeding this type of land. It was recognized by the committee, however, that different types of soil require different mixtures.

It was recommended that special consideration be given to the control of parasites under farm flock conditions. In view of the fact that veterinarians and the State college are in position to analyze droppings from sheep, it is recommended that everyone take advantage of this service in order to determine whether or not their animals are infested with the parasites. It is recommended that immediate control be practiced in order to increase the return from farm sheep. In this connection it is recognized that over-stocking of the pastures naturally increase the parasitic problem among sheep.

It is recommended that the sheep and goats be dipped for ticks as another means of increasing the profits from these animals.

### Hogs

National situation: The present situation regarding hogs is that the production is the smallest that it has been in fifty years, due to the drouth and the production control program. With the removal of the production program and while prices for pork are high, it is logical to expect that there will be a rather rapid increase in numbers. This is especially true in the corn belt.

The Oregon situation: The number of hogs in Oregon have decreased nearly 100,000 head during the last few years. At the present time Oregon is importing more than half of the pork consumed in the state. This will probably always be true unless there is an increase in the production of feed grains suitable for hog feeding.

The livestock committee feels

## PRODUCTION OUTLOOK FOR LIVESTOCK

that there is an important place for hogs on farms of Clackamas county. It is recommended that they be used in sufficient numbers to consume the farm by-products and wastes not utilized by other classes of farm animals. Such by-products as skim milk, cull fruits and vegetables and otherwise waste grain crops should provide the basis for production in the county.

The livestock committee recognizes that there is a shortage of production of hogs in the county. There is a tendency at the present time for farmers to be influenced by the present satisfactory hog price on the market to increase their production. The committee wishes to call attention to past history in hog production and the fact that it takes a very short time to increase the numbers. The committee feels that farmers should be cautious at this time and not go too far in increasing numbers in the county. At the present time a large number of sows are being bred for farrowing. As a guide to production on Clackamas county farms it is recommended that it be limited to home grown feeds.

As a means of lowering the costs of production of hogs in the county it is recommended that careful attention be given to the sanitation in the hog lot. It is therefore recommended that the McLean system of worm control be followed, which briefly is as follows: Old hog houses where sows are to farrow should be thoroughly cleaned and scrubbed with hot water and lye prior to farrowing. The farrowing pens should be bedded with clean straw and the sow disinfected before being placed in the farrowing pen. Within four or five days after farrowing the pigs should be hauled to clean ground where they are kept away from the old infested lots until they are at least four months old.

The further details in regard to the McLean system of sanitation can be obtained from the county agent's office.

Suitable mineral mixtures should be provided the hogs at all times.

For a satisfactory mineral mixture consult the county agent.

It is recommended that good types of breeding stock be used, and such stock as has shown good feeding quality. Where purchased grains are used, it is recommended that some sort of pasture crop be utilized in order to reduce the grain consumption. It is also recommended that the feed should be balanced by the addition of a protein supplement such as fish meal or tankage.

### Beef Cattle

National situation. It is a very doubtful whether cattle numbers in the next several years will be kept as small as they were at the beginning of 1935. In some of the states in the great plains area, numbers at the beginning of 1935 were less than in 1926 and in some areas in the states cattle numbers were reduced to two-thirds. The drouth of 1934 was responsible for some reduction throughout the drouth areas. As conditions improve it is quite likely that numbers will be increased again up to the normal supply.

In the south, cattle numbers were reduced very little, if any, during 1934. Where numbers are now unusually large there would be little reason to expect any increase under normal conditions but if the acreage of land devoted to cotton and other cash crops is kept at a permanent low level and the land retired from production should go into grass, there would be a possibility of a further increase in cattle numbers in this area. Likewise, if corn acreage in the eastern corn belt should be maintained below the average of recent years the acreage of hay and pasture crops are correspondingly increased cattle production may be further stimulated.

In the North Atlantic states and in other states where cattle are almost exclusively of dairy types the trend of cattle numbers will be influenced largely by conditions in the dairy industry.

It is recognized by the livestock committee that there is some range that is satisfactory for beef cattle

## PRODUCTION OUTLOOK FOR LIVESTOCK

in Clackamas county. It is recommended that grasses be planted on such range to afford pasture for this type of animal. It is recommended that wherever there is good feed available for this type of livestock, that they be encouraged. Experience of the beef cattle men present indicated that it requires five months winter feeding for best results under Clackamas county conditions. One ton of hay per head for the season is needed for wintering.

It is recommended that only the best pure bred or registered bulls be used.

The livestock committee feels that on some farms in Clackamas county there may be sufficient grain and hay produced to justify consideration of cattle fattening. Over a period of years the average spread between feeder cattle prices and the price on fattened cattle has been in the neighborhood of 2 cents per pound. This spread on the average is therefore encouraged to farmers who are in a position to consider this enterprise.

Farmers fattening cattle should exercise the very best judgment in the purchase of feeders as it is realized that careful buying is an important part of the success in

cattle fattening. In addition to the possible spread that one can expect in normal years, the accumulation of manure is an important consideration from the standpoint of maintaining the productivity of a farm.

The committee wishes to recommend that where cattle fattening is carried on in the county during the winter months the feeding should be done under shed.

### HORSES

National situation: Horses have decreased throughout the country since 1920 from 20,000,000 to 12,000,000 head. This has been responsible in a large measure for the surpluses of feed in the United States. The number of horses in Oregon decreased during that period 110,000 head.

The committeemen estimate the average age of horses in Clackamas county as 15 to 18 years. There are 10 stations in the county standing for public service.

Recommendations: It is recommended that under Clackamas county conditions, it is desirable to feed potassium iodide to mares carrying colts as well as to all work animals. Directions for feeding may be obtained from the county agent's office.

### TREND IN LIVESTOCK NUMBERS For Oregon and the United States

<b>Sheep</b>				
	1920	1925	1930	1935
Oregon .....	2,002,378	1,775,093	2,533,000	2,209,898
United States .....	39,025,000	39,134,000	49,913,000	49,766,000
Clackamas .....	16,780	13,522	22,577	17,653
<b>Hogs</b>				
	1920	1925	1930	1935
Oregon .....	266,778	216,065	193,000	168,580
United States .....	59,244,000	54,234,000	52,600,000	37,007,000
Clackamas .....	20,291	15,942	17,324	10,310
<b>Beef Cattle</b>				
	1920	1925	1930	1935
Oregon .....	570,697	483,313	412,000	
United States .....	43,398,000	39,609,000	31,091,000	
Clackamas .....	3,178	2,768	1,375	1,400
<b>Horses</b>				
	1920	1925	1930	1935
Oregon .....	271,559	223,848	179,750	161,279
United States .....	19,766,000	16,489,000	13,440,000	11,827,000
Clackamas .....	8,409	7,846	6,463	6,504

## REPORT OF POULTRY GROUP

In view of the prevalence of bots under Clackamas county conditions it was recommended that this parasite be controlled. Control measures and recommended treatments can be secured from the county agent's office or from the county veterinarian.

It is recognized by the livestock committee that the Willamette valley is especially adapted for raising horses. Climatic conditions are especially desirable for this purpose. Only the best registered sires should be patronized when breeding mares, as this will insure a higher percentage of good colts.

### GOATS

In view of the many brushy areas to be found in the county, it is recommended that goats be used for land clearing purposes. It is recognized by the committee that goats offer the most economical means of improving pasture for other

classes of livestock by reducing the underbrush that are commonly found on the farms. Farmers are cautioned not to overstock with goats. Present indications are that there is some improvement in the price of mohair. It is felt by the committee that goats offer their main advantage for land clearing purposes.

Recommendation on 4-H Clubs: We recommended 4-H livestock club work on farms where livestock production fits into the farm setup. We recognize that this is a sound procedure in aiding the young people to become familiar with livestock production and its importance to agriculture.

Committeemen Signatures,  
EDWIN C. RIDDER,  
Chairman.  
ROY HARMS  
LYLE CRAFTON  
W. B. COOK  
E. C. DOPPLEB.

## REPORT OF CLACKAMAS COUNTY POULTRY GROUP

Oregon produces a surplus of eggs above the needs of state consumption, this surplus being exported to distant markets, principally on the Atlantic seaboard and California. The major part of the commercial egg industry lies in the counties west of the Cascades. The surplus eggs of Oregon must be of high quality in order to meet competition from other districts and to justify transportation costs.

Western Oregon is well adapted to commercial egg farming, the extent to which the industry will increase, depending upon the progress Oregon farmers make in directing their production toward the requirements of outside markets.

The industry has weathered the storm of depression in a most creditable manner. The industry is expanding in Oregon and elsewhere as well. Oregon eggs are meeting keen competition from sections near its eastern market centers and the state preserves its present market outlets or develops a real

industry for which Western Oregon is particularly well adapted, poultry keepers must change many small farm flocks into better business units.

The poultry industry of Clackamas county can not be considered a unit in itself. It must be considered in relation to the status of the entire industry. Clackamas county produces a surplus of eggs which, as a contribution to a state surplus, must be marketed outside the county and state.

The 1930 census figures show 4747 farms; 3836 or 81 per cent of these farms keeping poultry. There were 59 per cent or 2261 farms with home table flocks of less than 50 hens; 31 percent or 1174 farms had flocks that varied from 50 hens to 200, these units being too large for home needs and too small for commercial management, or best income per labor hour; 401 farms or 10 per cent of the total farms had poultry plants designed for production to meet market demands. There exists a need for farm adjustment

## REPORT OF POULTRY GROUP

of poultry units. The 1930 census credits Clackamas county with producing \$1,579,066 worth of poultry and eggs. The 1935 census shows an increase of 1553 farms or a total of 6200. Poultry will form a part of many of these new farm programs, particularly on farms of small acreages where an intensive crop is necessary, 17.3 per cent of the farm income of the county coming from the sales of poultry and eggs.

Producers of eggs in Clackamas county have the choice of selling either through established independent dealers or cooperatives. The cooperatives of Oregon and other coast states maintain jointly their own sales headquarters in eastern cities. The grower's choice of market outlets has been brought almost to his door. Growers also have the choice of purchasing their feeds and supplies from independent dealers or cooperatively.

The export demand is for white shelled eggs. This demand naturally results in the Leghorns and other white egg breeds dominating the situation. This does not mean the exclusion of the heavy breeds such as Rhode Island Reds, Barred Rocks and other brown-shelled egg breeds from Clackamas county farms.

The demand for eggs from well-managed flocks of both breeds to supply hatcheries, both within and out of the state, and for dressed poultry should be considered by many farmers as additional market outlets. The premium paid for hatching eggs above top market quotations should be higher than now prevails generally throughout the valley.

Oregon produces only 1 per cent of the nation's poultry products and with this volume has little voice in setting prices. Producers here operate on a margin between New York prices minus the overhead of delivering eggs of certain grade to outside markets.

The industry here and throughout the nation will expand in all phases throughout 1936 as a result of favorable prices in 1935. The Pacific coast states in 1936 (as in

1935) will show the highest per cent of hatching increase. The increased number of pullets next fall will likely have a depressing price effect but may be partially offset by an increased consumer demand.

Egg consumption has declined since 1932 but higher meat prices will tend to place eggs in a more favorable position.

As a result of better egg prices in the United States and a favorable foreign rate of exchange, the imports of dried, frozen and shell eggs increased rapidly during 1935. The tariff on foreign eggs was sufficient during the years of low prices and normal exchange conditions. Efforts to remedy the foreign egg import situation by trying to get through congress an excise tax law failed because of lack of support by the industry. The imports for 1935 were in excess of 15,000,000 dozen shell eggs equivalents.

Poultry keeping as a planned farm enterprise is sound business. Several of the 1553 new farms—rehabilitation, resettlement, and subsistence—will keep poultry. If Oregon's expansion is toward barnyard flocks rather than toward flocks large enough to justify commercial care, it cannot economically long meet export market requirements. Approximately 90 per cent of the farmers who keep chickens in Clackamas county have less than 200 hens. These flocks are too small to justify frequent gathering, proper farm storage facilities, frequent deliveries in case lots and other factors necessary to an industry on an export basis.

The outlook of the industry depends largely upon a basic breeding program for the industry and whether or not the farmers who keep poultry make a reasonable effort to adjust their poultry units in relation to the demands which prevail from established markets and established market agencies. No dealer or cooperative agency can put quality in an egg after it reaches his candlers.

### Recommendations for Clackamas County Poultry

1. For Clackamas county farms

## REPORT OF POULTRY GROUP

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

2. For the farm that plans a side-line cash income from poultry, from which eggs will go into trade channels, it is recommended that a flock of not less than 400 to 500 hens be the ultimate objective.

3. A farm that expects to derive its major source of income from poultry should develop a business unit of approximately 2000 hens.

4. For a well-rounded specialized poultry farm program operated under natural conditions of ranging young stock, an acreage of 10 to 20 acres is recommended. Where artificial confinement throughout is practiced, less acreage is needed. Rearing under artificial confinement is successful for the few but is not given general endorsement.

5. It is recommended that from 50 to 60 per cent of the laying flocks be replaced each year with pullets.

6. In purchasing day-old chicks caution should be observed. They should be from pullorum-free parent stock when possible, or from accurately blood tested parent stock with all reactors removed.

7. Chicks under average conditions and equipment should all be purchased early and at one time, February, March, and April being the three months in which the big majority of Willamette valley chicks are purchased.

8. There are two types of brooder houses in general use by those in the industry, each designed to overcome losses from soil contamination.

The permanent brooder house, equipped with artificial yards such as wire, concrete or board floor. (See county agent for Extension Bulletin 451.)

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

brooder house is in general use throughout commercial regions because of less labor overhead.

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

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

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

12. Extremes of temperature have shown that laying fowls do better in partially insulated houses. (Plans for heating the floor to prevent wet litter are included.) Plans for this type of house and others as well will be found in Extension Bulletin 480.

13. More capital is required to develop a safe poultry enterprise than the amateur anticipates. Exclusive of land and the home, it will require, where the laying house is used for brooding, a first year investment of approximately \$2.50 to \$3.00 per pullet before she starts production. This expenditure when pro-rated will include cost of brooder, fuel, feed, litter, cost of chicks, mortality losses, houses and equipment. A well-defined plan should be followed in order to give the best protection to the investment involved.

(Signed)

Chairman,

LLOYD B. SMYTH  
R. E. SCHEDUN  
LESTER SCHWARTZ  
FRED H. COCKELL  
AMBROSE BROWNELL  
OLIVER BUXTON

## REPORT OF CLACKAMAS COUNTY TURKEY GROUP

Oregon produces approximately 700,000 turkeys, of which more than half must be exported to markets outside the state. The turkey industry in Oregon brings in a gross return in excess of two and a quarter million dollars.

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

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

Disease factors drove the turkey industry westward in search of new and clean range land, Oregon, under natural methods of rearing holding for years a distinct advantage. As other states also have adopted artificial methods of mass production, Oregon's turkey industry must prepare to face increased competition from these areas closer to the terminal markets.

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

The turkey crop of 1935 had a more favorable ratio between feed cost and turkey meat prices than often exists. As a result of this

favorable year, the general trend toward expansion indicates a strong possibility that the number raised may soon exceed that which the per capita rate of consumption will absorb at fair prices. The United States turkey crop increased from 14,800,000 birds in 1927 to 18,740,000 in 1934. A decided trend toward greater expansion exists for 1936.

The existence of both methods of marketing and purchasing of supplies is a great factor in stabilizing the industry in the county and protecting the investments of all growers.

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

In addition to a thorough study of economic conditions affecting the turkey industry, the successful grower is one who builds 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. Breeding stock should be selected early in the fall and kept separated from the market flock during the fattening periods. The breeding stock should be given a breeders mash from early January throughout the breeding season.

2. Turkeys should not be reared or ranged with chickens or on ground recently used as a chicken range, as a safeguard against blackhead losses.

3. The cost of producing turkeys can be materially reduced by providing succulent green feed during the growing period. Turkeys are great consumers of roughage in this form. In addition to rape, alfalfa, clover, sudan grass, etc., row crops such as corn or sun flowers

## REPORT OF TURKEY GROUP

should be provided for both green feed and shade on farms where natural shade is not available.

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

5. Ample credit is necessary to properly grow out a band of quality turkeys. Beginners too often think in terms of profit rather than costs. Growers should, roughly, provide finances or credit to the extent of the cost of one sack of feed for each market turkey.

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

During the past few years the turkey industry of Clackamas county has expanded. In addition to the production of market turkeys, it has established hatcheries and breeding farms which supply poults, hatching eggs, and breeding stock to many parts of the nation. It produces a surplus of approximately 40,000 market turkeys which must be marketed outside of the county and state as a part of the export crop of the state as a whole.

The depression aided by the great drouth in the midwest reduced the numbers of chickens and turkeys and the same cause, aided by agricultural adjustment, resulted in reduced supplies of pork and other meats.

Turkey growers who plan great expansion for 1936 must recognize the fact that their product will have to compete against an increased supply of chickens, turkeys and other meats. Only an improved consumers' demand can prevent a depressing effect on prices in 1936-1937.

Turkey production is an agri-

cultural crop for which Clackamas county is well adapted and in keeping with general economic conditions should be encouraged, but not exploited.

Growers have a choice of marketing their turkeys through established produce firms or through an established cooperative marketing association. Producers also may purchase feeds and supplies either from commercial feed companies or cooperative channels.

6. 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. It is urged that a general credit policy be established of extending credit only to growers who can finance their turkeys to eight weeks of age or older.

7. There are disease hazards that growers must consider, the most common being fowl-pox, roup, pulorum, mycosis and coccidiosis. Each of these hazards can be controlled with a minimum of loss to the grower. Growers are urged to protect their investments by having an authentic diagnosis made of disease out-breaks immediately.

SPECIALIST: H. E. COSBY.  
CHAIRMAN: HENRY KYLLO.

### COMMITTEEMEN:

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BLISS, GEO.  
BORKENHAGEN, FRANK.  
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FAURIE, MRS. PETER.  
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LINDBECK, O.  
OLSEN, MRS. A.  
SCHRUM, MRS. LENORE M.  
SPANGLER, A. A.  
WAGNER, MRS. F. W.  
WINDHAM, MRS. J. C.  
INSKEEP, J. J.

## JOINT TURKEY AND CHICKEN COMMITTEE RECOMMENDATIONS

1. Poultry stealing is a growing hazard against which producers must protect themselves. A movement is now under way by the growers to do the following.

Make turkey stealing a felony.

Require all dealers to display a record of brands registered in the state. The present law requires dealers to record the number of each brand of turkeys purchased. This is an aid in tracing and claiming stolen fowls.

Publish each year a booklet of all registered brands and distribute to every peace officer in the state.

Growers purchasing branded birds for breeders would get from that breeder a bill of sale in order that he could later present it when selling turkeys having a different brand number than his own.

2. We recommend that the present law relating to the disposition

of dog tax license money be amended to include the paying of indemnity for poultry killed by dogs.

3. The Breeder and Hatchers code was discontinued when the NRA was declared unconstitutional. The provisions of the code relating to false advertising and unfair trade practices were reprinted from a previously made trade agreement with the Federal Trade Commission and are still in effect. Any one damaged by violation of above poultry trade practices is asked to submit his complaint to the Oregon Branch of the International Baby Chick Association who will act as agent in forwarding complaints to The Federal Trade Commission.

(Signed)

Chairman

HENRY KYLLO  
LLOYD B. SMYTH  
AMBROSE BROWNELL  
OLIVER BUCTAN

## SMALL FRUIT REPORT OF CLACKAMAS COUNTY Commodity Committee

Intensified farming including production of small fruits and operation of commercial poultry farms increases in importance as the number of farms increase and the average tillable areas of Clackamas county farm lands decrease.

The sale of small fruits, nursery, and green house products, forms 18 per cent of the agricultural income of Clackamas county. Sale of poultry and eggs adds another 17.8 per cent. Thus these two intensified farm projects, which fit in so well together, form more than  $\frac{1}{2}$  of the total annual farm income, averaging \$5,922,000.

A special Northwest berry survey in 1935 credited Clackamas county

with approximately 2600 acres of berries of all kinds.

### Strawberries

Clackamas county acreage is approximately 1,000 acres.

The Oregon strawberry acreage was 10,500 in 1935 compared with 5,930 acres in 1925. The Northwest strawberry acreage (Washington and Oregon) in 1935 was 19,000 acres, an increase of 7,640 acres since 1925.

The high point in acreage in the Northwest was in 1932 when Oregon and Washington had 21,000 acres.

1932 was a disastrously low price year for strawberry growers.

## SMALL FRUIT REPORT

### TREND OF STRAWBERRY ACREAGE

In the Northwest, 1925 to 1935

	Wash.	Ore.	Total Nor'west Acreage
	Acres	Acres	Acres
1925	5,430	5,930	11,360
1926	6,090	7,320	13,410
1927	7,679	8,400	16,070
1928	8,900	10,000	18,980
1929	7,900	10,500	18,400
1930	7,500	9,450	16,950
1931	7,880	9,930	17,810
1932	8,980	12,120	21,100
1933	7,200	6,189	13,380
1934	7,500	8,500	16,000
1935	*8,500	*10,500	19,000

\*Estimate from "Facts in the Food Market."

Disposition of the Northwest strawberry crop:

Canned. The west cans approximately 72,118 cases of strawberries annually which is 76 per cent of the United States pack according to the figures for 1933. Oregon canned 3,409 cases of strawberries in 1909 and 27,142 cases in 1933, or 36 per cent of the United States canned pack for that year. The total United States canned pack for 1933 was 75,252 cases. Oregon's largest canned pack of strawberries was 110,574 cases in 1925.

Frozen. Washington and Oregon froze 25,788 pounds of strawberries in 1934. In 1935 the cold pack was estimated at 48,000 barrels by "Facts in the Food Market." The total frozen fruit production (all fruits) for the United States in 1934 was 68,040,000 pounds, the West packing 45,090,000 pounds.

Fresh fruit. 1934 reports of strawberries shipped to 66 important United States cities show 12,029 cars, 11 cars being from Oregon. In 1932 Oregon shipped 112 cars and the United States total was 12,931.

Oregon's chief outlet for strawberries is the cold pack marketed in 50 gallon barrels. This pack was 32,332 barrels in 1926, 73,544 barrels in 1928, 65,559 barrels in 1932, and 46,487 barrels in 1934.

Cold pack strawberries are put in 20 gallon, 10, 5 gallon barrels, 30, 15, and 10 pound cans, number

10 cans, and down to 1 pound cartons.

There is no shortage of strawberries in the United States in full crop years although there may be lack of distribution facilities. On full crop years growers who do not have dependable outlets for their crop are forced to sell at buyers' prices and often below the cost of production.

Oregon strawberry growers now sell through cooperative associations, to packers on time contracts, or outright at harvest time. Generally the marketing situation for the Oregon strawberry grower is not dependable or stable.

Clackamas county has additional acreage well suited for strawberry production when satisfactory market outlets can be established for increased acreage.

Of the small fruits, strawberries account for more than half the income for the following reasons:

1. It is easy and relatively inexpensive to establish strawberry plantings as compared to tree fruit.
2. Growers can and do go into or out of production quickly.
3. The strawberry is a low priced berry and is in demand even in periods of depression, when the purchasing power of the public is low.
4. There are three methods of marketing strawberries, fresh marketing, canning and barreling, most of the crop being sold in barrels. The berries are packed fresh with varying amounts of sugar, in new, clean barrels, and immediately placed in cold storage, where they will keep fresh indefinitely. Shipment is made under refrigeration.

Recommendations. The committee believes that a price of four cents with a yield of three tons of berries per acre is necessary to secure the bare cost of production.

Disease, insect pests, and soil fertility are major factors affecting strawberry yield.

Strawberry virus or crinkle is the worst disease, this infection alone

## SMALL FRUIT REPORT

runining many otherwise fine plantings.

When the grower has suitable land apart from his commercial field the committee recommends that he purchase certified strawberry plants and produce his own planting stock. When this plan is not feasible the grower should purchase certified plants that are free from virus disease.

It is highly desirable that Oregon growers develop a steady supply of certified plants at reasonable prices and that commercial growers give them patronage.

Berry plants should be baited for root weevil each year. It also is important to control spittle bugs that infest the plants each spring. Moles that make runways under all berry rows are believed to be a major factor in berry production. Directions for controlling these pests may be secured from the county agent's office.

New plantings of strawberries. Your committee recommends new plantings of commercial varieties of strawberries only to replace old depleted fields and to maintain the present acreages. The market might absorb a slightly increased planting but growers are urged to assure themselves of outlets for additional plantings before they are made.

Growers are cautioned against the practice of entering and leaving production, forcing prices up or down. Each grower should decide how many acres of berries are suited to his ranch under a good long time management program and plant accordingly.

Strawberry varieties for fresh fruit markets. The Narcissa strawberry is recommended for early fresh fruit markets. Where a succession of crops is wanted the Narcissa may be followed by the Marshall (Oregon), the Red Heart, and the Corvallis. The Dorsett, a new variety, offers some promise as a market berry. It ripens along with the Marshall and has a somewhat longer season.

Barreling or preserving varieties include the Marshall (Oregon), or Improved Oregon) as the leading

commercial barreling or preserving berry.

Canning varieties. The Red Heart is gaining in popularity, commercially and for home use. It should be planted on rich soils, especially in the uplands.

The Corvallis is another popular, new variety for canning in some localities and is suitable to rather heavy moist soils and for irrigation.

Ettersburg 121 on heavy soils and when the market exists for that variety is recommended.

Everbearing strawberries. The Rockhill leads for a good quality and dependable production. The Mastadon variety is second.

### Red Raspberries

The acreage of red raspberries in Clackamas county is approximately 400 acres.

The red raspeberry acreage in Oregon according to the United States census was 1,460 acres in 1909, 1,176 acres in 1919, 4,167 acres in 1929, and 5,392 acres in 1933.

Red raspberries are produced in abundance in Multnomah and Clackamas counties where they are marketed mostly through cooperative agencies.

Those making new plantings of red raspberries should, in the opinion of the committee, have a dependable outlet established for the crops they will produce.

Red raspberries are subject to mosaic and other degenerate diseases and only planting stock free from disease should be used.

The red raspberry is a relatively high priced fruit usually bringing from 6 to 8 cents per pound at the cannery. It is not a depression fruit when the purchasing power of the consumer is low.

1. Your committee recommends that the present red raspberry plantings in the county that have been winter injured, or are past their prime due to age or disease, should be removed and replaced to maintain the acreage in Clackamas county. At least 25 per cent of the present Clackamas county acreage should be removed and an equal acreage replanted with vig-

## SMALL FRUIT REPORT

orous, disease-free stock. Increased plantings may be made as market outlets develop.

Notwithstanding the disadvantage, this berry is important to this area because it is adapted to local soil and climatic conditions and fits in with the highly intensified methods made necessary because of the small farm acreages in this area. The fruit ripens after strawberries have gone and the same pickers and much of the same equipment can be used for both crops.

2. Your committee commends the State Board of Agriculture on its stand to keep in effect the quarantine on importation of raspberry plants from other states.

3. The Cuthbert is the leading berry for flavor and market demand. The Lloyd George has a place for fresh market and the advantage of having plants free from rust and winter-hardy.

The committee recommends continued research on the part of the Oregon experiment station and others who are trying to create a new variety of raspberry with fruit like the Cuthbert and hardier plants resistant to yellow rust, virus disease and winter injury.

New plantings should be made only with young plants from hills selected for vigor, freedom from disease and insect injury, and bearing berries of desired type. There is evidence to show that crumbly berries can be eliminated by rogueing.

The committee believes that many plantings have been made with rows too close for convenient cultivation and air circulation, and in many cases there are too many plants per acre for the summer moisture available. Rows eight feet apart should be the minimum and in many cases, nine and ten foot rows would be better. It takes at least three years after an old planting is removed before the soil can be built up sufficiently to justify a new planting on the same ground.

A minimum of five tons of organic fertilizer with good barnyard manure as a standard should be

plowed under annually between the rows. The average cover crop should supply two or two and one-half tons. Where cover crops fail to grow vigorously two or three tons of ground limestone per acre is recommended. In addition to bulky organic fertilizers, the committee recommends commercial fertilizers containing about 24 pounds nitrogen, 80 pounds phosphoric acid, and 70 pounds of potash per acre annually.

### Loganberries

Acreage in Clackamas county is about 300.

The state had 2,755 acres of loganberries in 1919 according to the United States census. There were 3,013 acres in 1929 and 2,117 acres in 1933. Returns have been low to the grower in recent years.

It does not appear to the committee that loganberry planting is to be encouraged except when the grower can arrange a reliable and dependable outlet in advance of planting.

### Youngberries

This is a new berry in the Northwest that has been increasing in popularity to a limited degree. Wholesale planting of the youngberry is not recommended. Growers are justified, however, in making plantings of this berry when market outlets are assured.

### Boysenberry

The boysenberry is a new highly advertised variety on trial in Oregon and it may have considerable promise providing markets can be developed.

### Black Cap Raspberries

The black cap raspberry acreage in Clackamas county is approximately 100 (1935 spring survey.) Black cap raspberry plantings at present are justified to a limited extent provided the grower establishes an outlet with some well organized marketing agency. The berries require deep, well-drained, fertile soils for best production and long life plantings. Avoid planting black caps on fields that have grown potatoes in recent years be-

## SMALL FRUIT REPORT

cause of verticillium wilt, a soil-borne disease common to potatoes, black cap raspberries, and water-mellons.

Varieties of black caps. Plum Farmer is the recommended variety for Clackamas county. The Munger is a very fine quality berry but is subject to mildew. Cumberland is another variety in favor in some locations.

### Blackberries

Present acreage in Clackamas county is about 100. The Oregon acreage cultivated in 1933 was 1,598 acres. Should the red mite continue its destruction of the wild evergreen blackberry, production to supply existing markets may require cultivated areas where this pest can be controlled by sprays. Growers should determine market outlets before making additional plantings of this crop.

### Grapes

Oregon now produces more grapes than are marketed to the advantage of the grower. Until marketing arrangements are improved additional commercial plantings of grapes do not appear justified. For individual or home use American varieties such as Concord, Worden, Campbell's Early or Niagara, (a white grape) are recommended. New varieties that appear to do well are Golden Muskat, a light green, large grape of pleasing quality; and Keuka, a rich red grape which ripens about the same time as the Concord.

Satisfactory returns to the grower cannot be expected from moderate or average yields of small fruits under present conditions. Large per acre yields must be secured. This means that small fruits must be grown on fertile soils, well cared for, and disease and insect pests which lower quality must be controlled.

### Small Fruit Diseases

"Crinkle" is a serious degenerate disease of strawberry plants which show normal vigorous conditions characteristic of the variety being planted, or growers may buy selected or certified strawberry plants from growers who special-

ize in controlling this strawberry disease.

A pest known as the strawberry fruit worm has caused losses in certain Clackamas county localities. More attention by authorities concerning control of this pest is recommended.

The committee recommends demonstration work for the control of the spittle bug on strawberries, and if possible easier methods of control should be determined.

Growers producing youngberries may find it profitable to spray with bordeaux mixture for control of the leaf spot disease on these varieties. Growers who have tried these sprays recommend their use.

### Soil Maintenance is Necessary For Cane Fruits

A narrow band of cover crop planted between rows of cane fruits will assist in preventing erosion and will supply humus and plant food for crop and plant maintenance. Nitrogen fertilizers should be added to the cover crop in late February to "boost" cover crop growth.

When available barnyard or poultry house manure may be used between the rows.

Soils for high production of small fruits should be deep, well-drained, and fertile and have moisture holding capacity. There is no satisfactory method of building up a depleted or worn out soil after small fruits have been planted.

A good cover crop contains three to five tons of bulky organic fertilizer. Red clover, crimson clover, and vetches are recommended as cover crops. Where cover crops will not grow, an application of two or three tons of ground limestone per acre is needed. Commercial fertilizers and barnyard manure frequently can be used advantageously in growing a heavy cover crop.

A good method of fertilization is to build up the humus content of the soil before the plants are set out. Five to seven tons of good barnyard manure, or its equivalent, is recommended as a minimum. The committee points out the folly of the practice of berry growers

## TREE FRUITS AND NUTS

who sell legume hay and purchase barnyard manure and commercial fertilizers. A ton of good vetch or clover hay is equivalent to three to four tons of barnyard manure as a nitrogen-bearing fertilizer. Clean legume hays do not contain as many weeds as barnyard manure.

To supplement organic fertilizers commercial fertilizers are recommended. These should be placed under the ground and around or near the plant roots. Burning may result if the fertilizer actually touches the roots.

The committee suggests for berries an annual application per

acre of commercial fertilizer at the rate of 30 pounds of nitrogen, 100 pounds of phosphoric acid, and 70 pounds of potash.

For fresh market, hill planting of berries three feet apart in rows that are separated 36 to 40 inches is desirable. For barreling berries, the committee recommends the matted row 12 inches wide kept for production two years.

Signed:

GEORGE SCHAEFFER  
R. E. SCHEDEEN  
HENRY SCHOENBORN  
R. E. SEARS  
W. F. WILANT

## TREE FRUITS AND NUTS

Census figures and estimates show that the apple acreage in Clackamas county decreased from 1500 acres in 1930 to 1200 acres in 1935. Apple production in Oregon has steadily decreased in recent years. Apple production in the Northwest has reached high figures and with curtailed foreign markets and severe competition in eastern domestic markets, it does not appear to your committee that additional apple planting should be made at this time. The exception is the case where a grower has a roadside market or other established outlets, and then only when such a grower is so situated that high production can be secured and necessary cultural practices given.

### Pears

The Clackamas county pear acreage is listed as 300 acres in 1935. Pear marketing conditions do not justify extensive plantings of pears at the present time. An exception to this statement is where a grower has a roadside market or other dependable outlets and then only under favorable soil conditions and ability to give proper care necessary for the production of quality fruit. Bartlett is the popular variety. Bosc and Anjou are in limited demand.

### Cherries

It is estimated that in 1930 Oregon had 5000 acres of bearing cherries, 40 per cent of which were yet to come in to bearing. At that time, California had 13,260 acres and 5600 acres were yet to come into bearing. Washington had approximately 5000 acres with 2000 acres not yet bearing. In view of the present heavy production of cherries in comparison with developed market outlets, your committee recommends no more plantings of cherries of any kind except for home use and for local roadside or other markets.

### Peaches

Clackamas county in 1935 had approximately 200 acres of peaches. These are sold at roadside markets and through stores or other local channels. Clackamas county peaches must compete with that product shipped in from the state of Washington and occasionally from California. Heavy competition is experienced in certain years.

Growers are advised to proceed very cautiously with new plantings of peaches. It is the belief of the committee that acreages of peaches now planted are sufficient to supply local demands when outside competition and importations are considered.

## TREE FRUITS AND NUTS

The committee suggests that more attention be paid to delivering to the buying public a standard but dependable grade of peaches. Peaches should not be mislabeled as to variety.

Two Bordeaux sprays are necessary to control peach diseases. The first should be applied before the fall rains, and the tree should be thoroughly covered with a high quality Bordeaux mixture 4-4-50 formula to control peach twig blight. The second spray which is for peach leaf curl should be applied in November, using Bordeaux 6-6-50.

### Walnuts

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

Trends of the Oregon-California walnut production are:

1916-1920, 20,100 average tons.  
1921-1925, 27,200 average tons.  
1926-1930, 33,000 average tons.  
1931-1935, 41,800 average tons.  
1935-1939, 45,000 average tons.  
(estimated)

The acreage of English walnuts is practically confined to the Pacific coast. In 1922 the acreage of English walnuts in California and Oregon was given as follows:

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

In 1922 the annual world production of commercial walnuts was placed at 140,000 tons and the United States production at 25,000 tons. Walnuts are produced in the Mediterranean countries Asia Minor, China, Chile, and the United States.

In 1922 the annual walnut production of the United States was 50,000,000 pounds, and we produced 26 per cent of the walnuts consumed.

Imports of all nuts fell from 174,-

780,000 pounds in 1926-1927 to 52,148,000 pounds in 1933-1934.

Shelled walnut imports dropped from 20,979,000 pounds in 1926-1927 to 5,547,000 in 1933-1934. Imports of walnuts not shelled were 25,706,000 pounds in 1926-1927, and 321,000 pounds in 1933-1934. The reduction in imports are credited largely to the tariff on nuts imported into the United States.

The tariff act of 1930 placed the tariff on shelled walnut imports at 15 cents per pound and unshelled at 5 cents per pound.

Cashew nut consumption increased rapidly from 1929 to 1934-1935 and was exceeded only by the consumption of walnuts and pecans. Cashew importations increased from 3,534,000 pounds in 1926-1927 to 14,069,000 pounds in 1933-1934, and consumption is still increasing.

Pecan production in the United States shows a growth as follows:

1909, 4,764 tons; 1919, 15,390 tons; 1930-34, 28,400 tons.

Estimated for 1940, 33,500 to 35,000 tons.

On the basis of a 1929 survey of the pecan tree numbers it is estimated that there will be 20 to 25 per cent more trees of bearing age in 1940 than in 1929, with an estimated crop of 33,500 tons to 35,000 tons.

Prospective walnut growers are warned of the failure of small walnut tracts to produce an adequate income without other sources of livelihood.

Establishing a walnut orchard is the work of a lifetime. Ordinarily 12 years or more must elapse before any worth while profit can be expected. In the meantime the grower must have some other means of paying his living expenses and the expense of caring for his orchard.

## TREE FRUITS AND NUTS

The pioneers of walnut growing are the ones who made large profits. They had a ready market for all they could produce, and prices were high. Prospects were so alluring that thousands of acres in California, Oregon and Washington were planted, and this has resulted in overproduction. In 1935 90,000,000 pounds of walnuts were grown in the Pacific coast states while the normal demand of the American market was about 63,000,000 pounds, or only 70 per cent of the crop.

In an effort to prevent prices on the domestic market from falling to a level that would mean disaster to the industry the federal government has considered it necessary to establish what is known as the Walnut Control Board. For several years this board has taken over 30 per cent of the crop, part of which it sells in foreign markets for whatever it will bring and part of which it shells and markets to confectioners, bakers and others who do not buy walnuts in the shell.

In addition to this we must face the fact that each succeeding year brings many young orchards into bearing, thus increasing the surplus.

Oregon growers must compete with California which produced more than 90 per cent of all walnuts grown in the United States and can put them on the market earlier in the season on account of the difference in climate. Most walnuts are sold before the Thanksgiving and Christmas holiday season, and California can have the cream skimmed off the market before our walnuts are ready. Also, the pecan, grown extensively in the southern states, is a formidable rival of the walnut.

There probably is no place in the world where finer walnuts can be grown than in some parts of Clackamas county, Oregon. And the growing of walnuts is, all things considered, one of the most pleasant of rural occupations. However, the city man who wishes to retire and raise walnuts, the "part time farmer" who wants to do so, and all others, should proceed very

cautiously or they are likely to be disappointed. As existing market conditions do not call for an increased production of walnuts it is obvious that further planting on a commercial scale should not be encouraged at this time.

All persons who are still not convinced are advised to talk, before investing their money, to some of the outstanding walnut growers of the Willamette valley. Real estate speculators with "ready made" orchards should be avoided. They have captured too many victims already.

### FILBERTS

The successful filbert acreage in the United States is practically limited to the Willamette valley in Oregon with adjacent territory in the state of Washington that probably does not total 1500 acres. Very little is in bearing with not more than 20,000 to 25,000 pounds production annually.

United States census figures and estimates by Oregon State college place the filbert acreage in Oregon and Washington as follows:

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

In February 1935, the North Pacific Nut Growers cooperative placed the Oregon and Washington acreage of filberts at 9,950 acres.

	Oregon	Wash.
	Acres	Acres
Bearing trees.....	4,000	400
Non-bearing .....	3,500	800
New plantings .....	1,000	250
Total .....	8,500	1,450

In 1929 the census reports 1,000 filbert trees in the East, 600 of which were reported in nurseries in Illinois. There are a few on trial in New York.

There was nothing further in the reports to indicate that the filbert acreage is being increased in the East and southern United States.

The Clackamas county filbert acreage was placed at 500 acres in 1930 and 800 in 1935.

The investment in 4,400 acres of bearing trees represents a cost of

## TREE FRUITS AND NUTS

\$666 per acre and is figured as follows to show total investment:

Bearing trees .....	\$2,930,400
Estimated non-bearing 4,300 acres @ \$500.....	2,150,000
Estimated newly planted 1,250 acres @ \$400 .....	500,000
Estimated total filbert investment .....	\$5,580,400
This is the estimate made by the Pacific Nut Growers cooperative.	

### The Cost of Producing Filberts In Oregon

The 1932 cost of producing filberts from 436 acres of 36 orchards, producing 17,254 pounds of filberts was \$54.25 per acre or \$0.137 per pound. The average number of trees was 104 per acre, and the average age 9 years; 1932 also being a light crop year.

Your committee points out that the United States production of nuts of all kinds together with importations has saturated markets. Filbert growers must realize that rapid increases of planting of filberts may force that product to the same position as walnut production today—namely, over production.

Your committee recommends that where filberts are planted at all that they be part of a regular enterprise and not as a separate unit.

The buyer is warned against the small, ready made orchard. These orchards seldom pay the investor and the income is insufficient as a sole means of support. The yields are usually 100 pounds per acre for the best production. On the small tracts the overhead costs are too large in proportion to the income.

Varieties of filberts. The Barcelona continues to be the leading commercial variety. The Duchilla and Davianna are used mostly as pollenizers. For further information consult established growers and the county agent.

Worms in filberts are apparently becoming more numerous in recent years. This committee recommends that the Oregon experiment station continue to investigate to determine a method of control of this pest. The committee recommends that growers avoid "dumping" filberts on the markets indiscriminately at harvest time. An organized system of marketing is desired. This means affiliation by the grower with some organized marketing group.

### PRUNES

The prune acreage in Clackamas county according to estimates was placed at 1400 acres in 1935. Prunes and plums for the State of Oregon are listed as 43,311 acres in 1919 and 54,825 acres in 1933. (Census figures).

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

European trade barriers have closed the outlet for about 50 per cent of the Northwest output of dried prunes. The surplus resulting has been found increased this year by a heavy dried prune crop in California.

### Growth of World Dried Prune Production Since 1899\*

	California Tons	Northwest Tons	Total United States Tons	Total World Tons
1899.....	57,114	1,500	58,614	113,614
1909.....	75,000	22,250	97,250	158,950
1919.....	135,000	16,600	151,600	.....
1920.....	97,500	16,950	114,450	181,350
1925.....	146,000	11,900	157,900	207,900
1930.....	261,000	21,250	282,250	310,714
1934.....	170,000	32,200	202,200	238,699
1935.....	.....	37,090	280,090	.....

\*Giannini foundations.

## TREE FRUITS AND NUTS

Although the peak of production apparently has been passed in the Northwest, there is little indication of material improvement in the prices of dried prunes under existing conditions.

Your committee points out that the trees of the older prune orchards are planted too close together, and that where trees are closer than 25 feet apart the growers remove one half of the trees, taking out every other tree in every other row. This recommendation is made because Clackamas county growers have found through actual practice that the general health of trees, yields, and quality of crop are improved by this practice.

These over crowded orchards should have the trees removed while the orchards are still in a vigorous condition. Do not wait until the trees are completely devalitized to remove them.

Removing trees in over-crowded orchards will make it possible to grow better cover crops.

Dried prune exports from the United States have been:

United States average 1928-32.....116,797 tons

United States exports for 1934..... 85,626 tons

Dried prune exports for 1934 were 31,171 tons less than the average for the five-year period 1928-32.

Trend of the western canned prune pack:

1927.....	459,591 cases
1928.....	715,749 cases
1929.....	960,392 cases
1930.....	719,960 cases
1931.....	759,271 cases
1932.....	506,880 cases
1933.....	794,024 cases
1934.....	846,000 cases
1935.....	1,200,000 cases

(estimated)

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

### Clackamas County Prune Recommendations

Cultivation and care of prune orchards that are not capable of producing an average yield of about 2000 pounds of dried prunes per acre or sizes larger than 50 to the pound is questionable, and the owners of such orchards may well consider their removal.

Growers who wish to plant prunes under present conditions must realize that the most severe competition is in marketing on an over-supplied market.

Clackamas county growers are advised to give special attention to cultural methods that size and quality of prunes for both drying and canning be improved. The public cannot be expected to repeat orders for low quality prunes regardless of price. Pruning out the underhanging small wood of prune trees is recommended in lieu of cutting out large limbs.

Greater care must be exercised in harvesting prunes. The prunes should be picked at the proper stage of maturity and every effort made to keep out rotten, ill-shaped or damaged prunes.

Proper handling in the drier is a necessity. Adoption of a reasonable standard of perfection that will be recognized and adhered to by growers and drier operators is imperative before there can be any hope of expansion of domestic markets against competitive commodities which have been rigidly standardized.

Careful grading by growers of prunes for canning is equally essential. Continued indifference to these points is largely responsible for the relatively poor position of Oregon prunes in the domestic markets today. Growers must take the initiative in correcting the situation.

At present Oregon dried prunes are placed in 11 or more classifications dependent upon size alone and valued accordingly without reference to quality, but with a wide range in prices. Your committee recommends that dried prunes be classified for size in not to exceed four grades, such as small, medium, large, and extra large, and that

## REPORT OF FISH AND GAME COMMITTEE

differences in value be governed by quality rather than size; and further, that satisfactory standards of quality be set up and measures taken to insure proper identification of quality by the ultimate consumer.

The committee recommends that the state department of agriculture be requested to hold a series of hearings to set up grades and standards based on quality for Oregon prunes.

The committee recommends the adoption of a uniform Oregon brand for all prunes meeting specified high quality standards.

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

The present plight of the prune industry in Oregon in a large measure can be charged to failure on the part of existing sales agencies to maintain merchandising methods on a par with those of com-

peting commodities, and in part to the abuses which have become entrenched in the industry due to lack of organization among growers.

Members of existing cooperatives have an opportunity to take the initiative in the effort to bring the marketing of Oregon prunes up to date through standardization, careful development and expansion of canning and other new outlets, and in promotion work among consumers.

Price cutting, open-end contracts, the consignment and warehousing evils, unfair dockage, and kindred abuses can and should be curbed through affiliation of a substantial majority of the independent growers into a statewide collective bargaining association operating with an optional pooling arrangement under Oregon cooperative laws.

Signed:

W. F. WILANT  
HENRY SCHOENBORN  
R. M. SEARS  
G. EILERS  
O. T. McWHORTER  
Secretary for small  
fruits, tree fruits, wal-  
nuts and filberts.

## REPORT OF THE FISH AND GAME COMMITTEE

The fish and game committee of the Clackamas County Economic Conference believes that wild life onomic and recreational resource of importance. It is the belief of this committee that wild life can be increased in Clackamas county by the application of fish and game management practices and that the agricultural lands can be made to produce a larger game bird crop, providing farmers practice simple game management. Further, an increase in other wild life, such as fish, and big game will enhance the values of this county.

The following resolutions pertaining to fish and game are made for Clackamas county:

1. That a small number of game bird demonstration areas be established in this county, the objects

of these demonstration areas being to increase game birds through game management. It is recommended that these demonstration areas be supervised by the Oregon Wild Life Research Unit (Oregon State Game Commission, United States Biological Survey, and Oregon State Agricultural Experiment Station). Further, it is recommended that each of these areas be at least 2,000 acres in extent; and that land owners in such units might take advantage of the Oregon Game Bird Script Law, in which farmers are compensated in part for their efforts in producing more birds, the option of which rests with the land owner.

It was recommended by members present that demonstration units be located at Wilsonville,

## REPORT OF RODENT CONTROL

Molalla, and Macksburg to test whether sportsman-farmer cooperatives would be successful undertakings in this county.

2. It was recommended that 4H Club boys be enlisted into practicing game management upon their lands and encouraged to produce game birds both by hen incubation and by controlling conditions under a natural system. Some of the suggestions made of controlling natural conditions would be the destruction of predators, such as stray cats and rodents known to be detrimental to bird life.

3. It was suggested that inasmuch as game fisheries constitute a decided resource to this county that measures be taken to increase fish life. As a suggestion, it was recommended that thorough biological survey be made of the principal fishing water-ways of Clackamas county to determine a scientific policy for hatcheries planting program, based upon the productivity of the streams and lakes. In other counties it is hoped that such a work will lay the founda-

tion for a game fish management program for Clackamas County.

It was further recommended that the Oregon State Game Commission, United States National Forest Service, the United States Bureau of Fisheries, and the Oregon State Experiment Station be interested in conducting such investigation.

4. The committee recommended that the Oregon Wild Life Research Unit make a thorough study of all wild life conditions in Clackamas County, with the object of formulating a wild life conservation program for the county.

5. Some of the members of the committee felt that predatory animal control should be regulated by a county bounty system, and that the bounty system be established upon the basis of a uniform bounty in all counties and surrounding Northwestern states.

(Signed)

S. A. CORDILL, Chairman  
R. E. DIMICK,  
ROBT. WIEDEMANN,  
STANLEY R. RAY.

## REPORT OF THE RODENT CONTROL COMMITTEE

The rodent control group of the Clackamas County Economic Conference, recognizing the importance of rodent control in the agriculture of the county, wishes to call attention to the following facts relative to control of rodents:

Grey diggers and gophers. The use of poisons is the most satisfactory control. Poison barley is effective for grey diggers. It can be obtained at cost from the county agent's office; or if the granges wish to furnish the barley for the poison a considerable reduction in cost can be obtained. If the subordinate granges wish to mix the poisons locally a further saving can be effected by securing the necessary formula and ingredients for the product through the Oregon agriculture extension office.

Strychnine for use in poisoning gophers can be obtained through

the extension office by farmers at a reduced rate by obtaining a requisition from the county agent. Poisoned vegetables or clover leaves are still the most effective means of control.

Rabbits can be controlled effectively by use of poison baits.

Rats and mice can be controlled with poison baits and traps. Good cats have been very effective for controlling these rodents.

Skunks and mountain beavers are most effectively controlled by trapping and shooting.

Blue-jays, crows and hawks can be controlled by shooting and some by trapping. There is no outstanding and effective control known at present.

English sparrows, no effective control at present. Control of brooding localities is advised. (See Government Bulletin number 61)

ELMER McCURE,  
Chairman.