

# Oregon Agricultural College Extension Service

PAUL V. MARIS  
Director.

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## Reports of the MULTNOMAH COUNTY AGRICULTURAL ECONOMIC CONFERENCE.

Gresham, Oregon, January 15, 16, 17, 1925

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## Suggesting an AGRICULTURAL PROGRAM for MULTNOMAH COUNTY

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Prepared and Distributed by  
S. B. Hall, County Agent.

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## SUMMARY OF CONTENTS.

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	Page
Foreword .....	4
Reports of Conference Groups:	
Boys' and Girls' Club Work.....	5
Farm Crops .....	7
Horticulture .....	17
Livestock and Dairying.....	20
Poultry .....	23
Vegetables .....	28
Farm Management .....	30
Development and Status of Multnomah	
County Agriculture .....	32
Present Sources of Agricultural Income.....	35
Climate of Multnomah County.....	37

## FOREWORD.

This bulletin includes the reports considered and adopted by the Multnomah County Agricultural Economic conference. Its publication is the result of a motion passed by the conference that the reports be printed in order to make them available to those interested in the development of agriculture of this county and to provide a record of the work of this conference that might be useful in preparing for a similar event, should one be held in the future.

Taken together these reports suggest an agricultural program for Multnomah county. Singly they represent the best judgment of the conference groups in determining the lines along which our principal sources of agricultural income should develop. Preliminary committees worked for several weeks in preparing for this conference and in gathering local information that might be useful in making recommendations for a more profitable agriculture. Available official government statistics were drawn upon in order to trace the development of agriculture in this county and to provide information as to present trends in production and marketing of crops in other states with which our products are in competition. Specialists provided by the Extension Service of the Oregon Agricultural College brought this information to the conference and assisted the conference groups in arriving at their conclusions.

The conference was a beginning. Its ultimate value depends upon the use of its findings by the communities of the county and by individual producers. It is hoped that farmers of the county, individually and in their organizations, will study the information contained in these reports and the conclusions based on that information, to the end that development of our agriculture may be guided along lines that will bring profit to our farmers and a greater degree of prosperity to the county as a whole.

It is recognized that the recommendations of the conference are not final. They must be revised as new conditions develop and other problems of marketing and production are met.

# Recommendations of Boys' and Girls' Club Committee.

## Girls' Work.

1. That parents be interested and encourage girls to take the first three divisions of sewing without alternating with other projects.
2. That parents become interested enough in sewing projects to have the girls make their garments to exhibit in the open classes at the various fairs and also to have the girls bake cakes and bread for the open classes.
3. Since the prune bread demonstration has been of great help to the girls and has also been good advertising to the county and state, we recommend that all cooking clubs devote some time training a team for competition at the county fair.
4. Realizing the value of the canning project to the girls we would encourage a greater enrollment in the project and training of teams to demonstrate at the county fair.

## Poultry.

1. We recommend that the boys and girls be interested further in the poultry project. This is not an "easy" project. Club members should start with better stock and on a somewhat larger scale so as to insure more interest.

## Calf Clubs.

1. Calf club work should be stressed throughout the county as one of the best projects to give boys and girls education and responsibility in the care and management of livestock.
2. Encouragement from parents and local leaders in livestock work.
3. Encouragement in raising purebred calves to extent possible.
4. Encouragement of breeding club livestock to proven sires.

## Pig Clubs.

1. Encourage raising purebred livestock.
2. That leaders of pig club work emphasize mineral feeding for bone-builder in growing pigs as well as breeders.
3. Stress the growing out of four pigs of a litter for market purposes.

## General.

1. To be recommended to the school boards over the county that part school time be given club work. (Distance to travel and school busses conflict with after school club meetings).
2. That help be given by parents and communities in sending more boys and girls to the club summer school at Oregon Agricultural College.
3. We recommend that those who can take the time to lead clubs offer their services. We appreciate the immense value of local leaders to club work and realize that it is the loyalty and splendid work of these Multnomah county leaders that has given this county its success in club work.

4. That the parents back up these leaders, showing their appreciation of the sacrifice of time and labor they are devoting to the young people.

5. Since Multnomah county is leading the state in the functioning of its local leaders organization we recommend continuing local leaders' meetings and encourage all local leaders to attend all meetings of the organization. Close cooperation will bring better results.

6. Since the Multnomah County Fair board has been leading the state in its support of club work at the county fair and in its value of premium list for club work we extend to the fair board our appreciation for this cooperation and urge that the same cooperation be continued and the club department developed at the county fair in every way possible.

7. That the club department arrange for demonstration by club members to be given during the fair, covering as many of the different projects as is found practical.

8. Since the livestock breeders' organization of Multnomah county has taken a great interest in the furtherance of the livestock work, we extend to them our appreciation of the hearty cooperation, and sincerely hope this good spirit will continue.

9. Realizing the value of the county agricultural program which will be worked out at this conference, we recommend that every community carrying on the club work relate the projects to the agricultural program for that particular district.

Respectfully submitted,

F. N. LASLEY, Chairman.

# Report of Farm Crops Group.

## POTATOES.

### I. GENERAL SITUATION.

#### 1. Importance in County.

Year	Acres	Yield per Acre	Bushels Grown
1889	1305	101.3	131,918
1899	2558	161.4	412,382
1909	3774	125.1	472,654
1919	3630	95.2	345,411
1920	4294	175	751,880
1921	3600	125	450,000
1922	4000	120	480,000
1923	3200	125	400,000

It is seen that the potato acreage increased steadily up to 1920 and has declined slightly since then. The county now produces about 10 per cent of the state's potato crop.

In 1922 the state of Oregon produced 4,987,000 bushels of potatoes, according to F. L. Kent, Federal statistician for this state. Figure 1 shows the counties that figured in that total. Malheur led with 700,000 bushels. Marion, Clackamas, Washington and Multnomah followed in the order named.

#### 2. Average Yields Are High.

	Yield per Acre
Multnomah county .....	136 bushels
Oregon .....	109 bushels
United States .....	97 bushels

Multnomah county has a marked advantage in yield per acre over most potato sections of the United States and over most other sections of Oregon.

Production per acre here is exceeded by that in the Yakima valley of Washington, the irrigated parts of Idaho, and the delta region of California.

#### 3. Net Prices Average High, Comparatively.

The average price for potatoes in Portland is about the same over a period of years as that in the eastern potato consuming centers. Multnomah county growers however have an advantage in low cost of delivery to market as compared with the average growers of the United States. The net price to the farmer therefore is greater here than in most sections.

#### 4. Crop Marketed in Portland and California.

About 100 carloads per year go from this county to California. The balance is used in Portland. Of the potatoes that move off the farm, from 15 to 20 per cent go to California in a normal year. These are mostly moved in the late winter and early spring and a large part of them go as seed to California.

California could use over 1000 carloads of seed if reliable seed could be obtained in the same communities year after year. The big producing section there is in the delta around Stockton where 27,000 acres are grown. This year about 20,000 acres were planted to eastern seed or to seed grown from eastern seed the previous year. The remainder was largely planted to seed from Oregon and Washington.

California is virtually the only outside market existing at present, due to freight charges of over \$1.00 per hundred to middle western and eastern points. It is possible that some day a market will be developed by water with south Atlantic and Gulf coast points.

The big bulk of the crop (80 to 85 per cent) is marketed in Portland, partly to wholesalers and partly to retailers. Growers of this county are favorably situated to take advantage of this market by keeping in touch with it and selling on the bulges.

POTATO PRODUCTION IN WESTERN STATES.

Name of State	1900	1920-22 inc.	Average production in 1920-22, 3 yrs.
	acres	acres	bushels
Oregon .....	15,000	45,000	4,868,000
Idaho .....	5,000	65,000	11,950,000
Washington .....	15,000	59,000	8,580,000
California .....	26,000	75,000	10,140,000
Montana .....	4,000	42,000	4,970,000

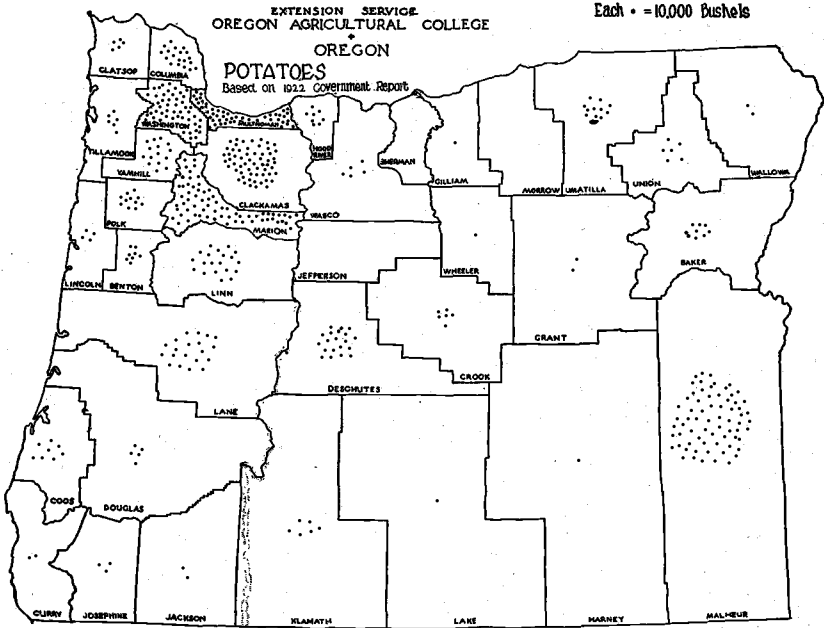


FIG. 1. Distribution of Oregon's Potato Production.

5. Freight Rates Favor This County.

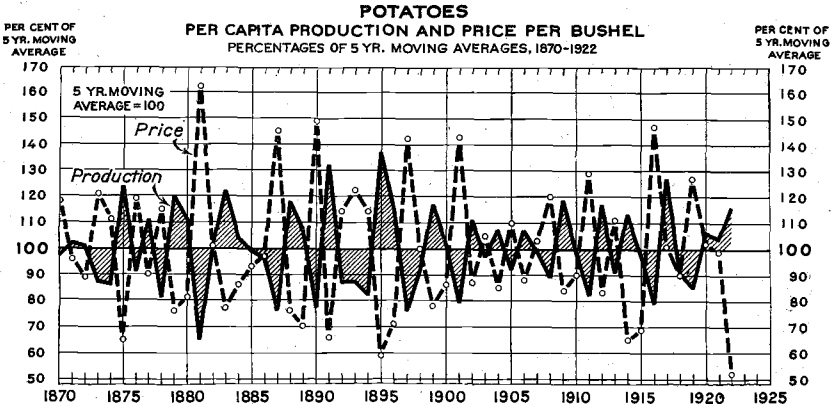
Freight rates by rail from this county to California points are the lowest of any potato shipping point in the state except Klamath Falls. The rate from Portland to San Francisco is 35½ cents a hundred pounds and to Los Angeles is 56½ cents.

Water transportation is not available to any other Oregon shipping point. Water rates are 20 cents per hundred to San Francisco and 30 cents to Los Angeles. Here again Multnomah county is favored as a potato growing region.

### 6. Cost of Production Is High.

This county has the highest production costs of any county in the state except Malheur county, which is not a competing section for the late crop. Costs average about \$105.00 per acre here and on the higher priced lands they run up to \$135.00. Higher costs of production are due to higher land values, higher taxes, smaller farms, and larger average crop yields. Yields of 75 sacks of market table potatoes, or more, per acre are necessary to pay cost of production.

Of the above figure of \$105, about 60 per cent is cash outlay. The balance of 40 per cent represents the time of the farmer and interest on his investment.



### 7. Too Many Varieties Grown.

The varieties grown here include:

Burbank, American Wonder, Pride of Multnomah, Earliest of All, British Queen, Netted Gems, White Rose, Early Rose, Garnet Chili, Scotch Rose, Early Ohio, and other miscellaneous varieties.

This county is the least standardized on its varieties of any commercial potato growing county of the state. This condition complicates marketing materially and is one of the biggest drawbacks to the development of a seed trade.

Burbanks lead in acreage and probably make up about 70 per cent of the total acreage. In spite of temporary market outlets for miscellaneous varieties, all growers would fare better in the long run if not over three varieties were grown in the county.

### 8. Soil and Climate Favor Multnomah County.

The soil and climate of this county are the best suited to potato production of any western Oregon county. There is more free working soil here than in the other counties and the climate is nearly ideal. An examination of the weather records in all of the best potato districts in the world will



show an average summer temperature of 70 degrees or less. The average summer temperatures here are:

June, 62 degrees.

July, 67 degrees.

August, 66 degrees.

September, 61 degrees.

The average date of the last killing frost in the spring is March 19 and the average of the first killing frost in the fall is November 20. Here then, we have a rare combination of a cool, long growing season and comparative freedom from days of high humidity which are almost sure to produce late blight.

## II. POTATO RECOMMENDATIONS.

### 1. Increase of 50 per cent in Acreage is Justified.

We recommend the growing of potatoes as the main cash crop on all farms adapted to their production. The acreage in the county can be safely increased 50 per cent at the expense of grain.

### 2. Minimum of 75 Sacks From an Acre.

Potatoes are recommended only on farms which can average over 75 sacks of marketable potatoes per acre.

### 3. Strengthen Grading Law.

We recommend the immediate strengthening of the potato grading law so as to include enforceable penalties for its violating. We believe that the practice of allowing Washington potatoes to go unlabeled and ungraded while ours must be graded, puts the local crop at an impossible disadvantage, so far as the market in Oregon is concerned. The disadvantage is caused by the ignorance of Oregon retailers as to what constitutes the U. S. No. 1 grade. They thus constantly compare the price of ungraded Washington stock with the price asked for Oregon graded stock and whenever purchases are by any other means than actual inspection, the sale always goes to the lower priced product. This works a tremendous hardship upon growers in their own home markets.

### 4. Grow Only Three Varieties.

We recommend concentrating upon Burbank, American Wonder and Earliest of All.

### 5. Plant and Dig Early for Portland Market.

We believe that people growing potatoes for the Portland market will on the average do better to plant early, dig early, and sell in the fall, as early as possible, rather than to plant late, dig late, and store for the winter market. After the Yakima crop comes on, the price usually drops. In years when a short crop is evident, storing is advisable.

Those intending to sell for seed in California or to other local growers will do better to hold their crops until late winter or early spring. In the fall the big movement of Yakima Gems does not start until the last of September or the first of October. Prices will usually break at this time.

### 6. Good Storage Facilities Needed on Farms.

Proper storage facilities are advised for every farmer intending to remain in the potato business. On many farms losses from poor storage are common. The cost of digging or building a frost proof storage pit or warehouse is very little as compared with the loss of a year's crop by freezing, heating or rotting. The average annual loss on some farms is enough to build a good storage house.

## 7. Use Best Possible Seed.

It is practically impossible to produce good crops with poor seed. We commend the County Potato club and the county agent for their efforts in trying to build up good, dependable local strains of seed. We urge the use of the best seed that it is possible to obtain.

## 8. Fertilizers Pay on High Priced Land.

In order to produce a good crop of potatoes, a large percentage of which will grade No. 1, fertile soil is necessary. Potatoes should be grown in a rotation with clover or vetch, and on high priced land commercial fertilizers will usually pay. Complete fertilizers are usually the most expensive kind to buy. Farmers will save money by experimenting to find the fertilizer that gives the best results and then buy the materials needed and mix them on the farm. Complete fertilizers usually carry a heavy percentage of filler with no real fertilizing value.

# HAY CROPS.

## I. THE SITUATION.

### 1. Acreage Is Large.

More acres are devoted to hay in this county than to all other farm crops combined.

Hay .....	14,000 acres
Grain, corn and potatoes.....	12,025 acres

From the standpoint of acreage, hay is the most important farm crop.

### 2. Varieties.

The 14,000 acres of hay are devoted to vetch, clover, timothy and ryegrass, grain hay, and wild hay. There are about 800 acres of alfalfa.

### 3. Yields Per Acre Are High.

This county has a high hay yield per acre, about 2½ tons. Wild hay gives about 1¼ tons and grain hay 1.9 tons. Alfalfa, clover, vetch, and tame grass yield well over 2 tons.

### 4. Hay Required in County.

It would take most of the land now in grain to grow all of the hay required by the dairy cows here. This puts the county upon a hay importing basis. No accurate figures are available, but the county, outside of Portland, probably imports about \$150,000 worth of hay every year.

### 5. Can Hay Tonnage Be Increased?

The only possibilities of increasing the hay yield lie in either putting grain land into hay or in increasing the yields per acre. Since grain is also imported, the changing from grain to hay would necessitate importing more grain.

Yields per acre might be increased in many cases by growing alfalfa and in other cases by growing vetch and oat hay instead of grain hay.

## II. HAY RECOMMENDATIONS.

1. We recommend a large expansion of the alfalfa acreage on all lands suited for its growth. This includes well drained land with fairly free working soil.

2. Grimm alfalfa only should be used and it should always be inoculated.
3. If a dairy farmer must buy part of his feed, it will usually be cheaper to buy grain than hay. Hay is so bulky that freight rates are much higher in proportion to its feeding value than is the case with grain. Hay is also cheaper to produce per acre than grain, due to the smaller outlay in equipment and the avoidance of threshing costs.
4. A crop of grain hay seldom pays. Vetch and oats or clover will produce more hay of better quality.

## OATS AND BARLEY.

### I. THE SITUATION.

Oats are the leading cereal crop of the county, with 4,500 acres in 1923. The average yield is 40 bushels per acre. Barley averages about 36 bushels per acre with an acreage of only 500. Although oats yield a few more bushels than barley, the latter averages 440 pounds more of grain per acre due to its heavier weight per bushel.

Barley is a superior feed to oats when fed with alfalfa, clover, or vetch hay. Its only drawback is the necessity for grinding it. Its good qualities are better appreciated in California and east of the Cascades where in many counties oats are practically an unknown feed.

It is usually necessary to grow some grain in crop rotations, but under conditions here it will usually be impossible to figure any profit from it. On oats for example, the cost of production will exceed \$50 per acre and the average price will be only about 45 cents per bushel. This will make it necessary to grow over 100 bushels per acre to get cost of production, which is an impossible situation.

### II. OATS AND BARLEY RECOMMENDATIONS.

1. Ten acres of barley can be expected to yield as many pounds of grain on an acre as will be harvested from 13 acres of oats.
2. When the crop is to be fed at home it will pay better to grow barley in most cases.
3. The oat acreage could be profitably reduced on many farms, substituting for it either barley or a legume hay, or pasture.
4. Hannchen barley is the best variety for spring planting; O. A. C. No. 7 for fall planting on ground where the east wind does not hit. Victory and Shadeland Climax oats are best for spring planting and Gray Winter for fall planting on protected areas.
5. Trying to grow a few acres of grain on a small farm is bound to be a losing game because of the excessive cost of threshing small lots and the heavy machinery overhead involved. The land can be more profitably used for potatoes, hay or pasture.

## WHEAT.

### I. THE SITUATION.

The wheat acreage has been rapidly declining since 1919. Previous to that time it ranged from 300 to 1500 acres per year. Under the stimulus of the war it rose to 3,234 acres.

Year	Acres of Wheat	Bushels per Acre
1919	3,234	26
1920	2,410	29
1921	1,900	23
1922	1,800	22
1923	1,700	25
	12	

The cost of production of cereal crops runs from \$50 to \$75 per acre. Under these conditions there is little possibility of getting cost of production out of a wheat crop in this county.

The world wide situation is such that we may expect rather low priced wheat for many years except for occasional years of crop shortage like the present.

The yields of the various grain crops for the five year period 1919 to 1923 follow:

Crop	Acres*	Bu. per Acre	Lbs. per Acre	Acres. Value**
Winter Wheat	1446	26.8	1608	\$21.44
Spring	763	22.8	1368	\$18.24
Oats	4230	39.8	1274	\$17.51
Barley	429	35.8	1718	\$20.76

\*Five year average, 1919-1923 (U. S. Bureau of Agricultural Economics.)

\*\*Ten year average farm price 1905-1914 (U. S. Department of Agriculture 1914 year book).

The price paid farmers locally for grain is sometimes more and sometimes less than the Portland price, depending upon whether grain is moving out or coming in.

Imports of grain into the county are large, particularly corn, wheat and mixed dairy feeds.

## II. WHEAT RECOMMENDATIONS.

1. Wheat growing on high priced land is a fairly good recipe for going broke. The competing wheat growing sections are nearly all in regions of cheap land, many of which get just as good yields as do growers in this county.

2. Wheat should be grown only in rotations as a crop to start clover seed.

3. If wheat is grown it should be a winter variety.

4. Spring planted barley will outyield spring planted wheat in pounds of grain from an acre.

5. The wheat acreage can be cut in half with resulting profit to growers. The land can be more profitably used for potatoes, or even for vetch or clover hay.

## FLAX.

### I. THE SITUATION.

The fiber flax industry has received much publicity lately. Flax growing for fiber is a proven venture and growers near Salem are supplying the plant at the state penitentiary with flax of a satisfactory quality. In view of the widened interest in this subject, it appears likely that one or more linen mills will be constructed in western Oregon.

It is not difficult to grow fiber flax, but farmers should acquaint themselves with the possibilities of this crop before growing any large acreage.

Fiber and seed flax are different varieties. There is an oil mill in Portland which usually imports many carloads of flax for the extraction of the oil. A home market therefore already exists for seed flax.

Seed flax is handled with the same machinery as other grains and a grain drill, binder and threshing machine. The weather is more favorable here for its production than in the middle west, due to the spring moisture and dry summers.

Seed flax can ordinarily be expected to return more net profit per acre than wheat or oats when these crops are grown to sell.

Flax for seed is an ideal crop for use as a nurse crop for clover or grass seed, as it uses less moisture than other grains and does not shade the ground so much.

## II. FLAX RECOMMENDATIONS.

1. In preparing for the time when linen mills will be available we urge a number of growers to try out fiber flax on small areas. In this way it can be demonstrated just where the crop will do well and growers can get their experience with it without any possible loss of money such as might follow a mistake on a large acreage.

2. Since this is experimental work we believe that the seed for the small plots should be furnished free, either by the state flax plant or by the Oregon experiment station.

3. We call attention of farmers growing grain for threshing, to the possibilities of growing seed flax for sale to the Portland mill and for supplying a rich concentrate for dairy cows. We believe that flax will usually be a better paying crop than wheat because wheat must be exported and flax is at present imported.

## SUGAR BEETS.

### I. THE SITUATION.

Tests made last year and in previous years indicate that western Oregon produces sugar beets of a satisfactory sugar content and yield.

The Utah-Idaho Sugar company has been very much interested in this territory. Last year they had some experimental plantings in western Washington and as a result they have completed arrangements to build a factory at Bellingham.

The western representative of this company, Mr. Timpson of Toppenish, Washington, has stated that upon an expression of interest from a number of farmers in the Willamette valley, he would request his company to absorb the freight from here to Bellingham up to \$1.75 per ton, and thus give Oregon farmers an opportunity to test out beets here in an experimental way to see if the company would be justified in building a factory in western Oregon. The growers of these experimental plots would receive the same price for their product as do growers of Bellingham.

### II. SUGAR BEET RECOMMENDATIONS.

1. We ask all farmers who can spare an acre or two for this purpose to write to Mr. J. W. Timpson, Toppenish, Washington, stating that they are interested in trying out beets in a small way. There is no possibility of securing a sugar factory under any other plan. If these letters are to be written they must go forward at once.

There appears to be no chance to lose anything on this proposition of an experimental acreage because even though the beets may not yield well they make good feed.

## SUCCULENT FEEDS—SILAGE AND ROOTS.

### I. THE SITUATION.

#### 1. Acreage.

Most of the dairy farms of this county grow either silage or root crops. A succulent feed is necessary for the most economical production of milk. There are about 2000 acres of corn, mostly grown for silage, some vetch silage and perhaps 300 acres of root crops.

#### 2. Source of Seed.

Part of the corn is grown from locally produced seed, part is bought from seed companies or farmers in other counties, and part is grown from ordinary eastern feed corn.

Eastern corn is of unknown origin and although good results are some-

times received from it, its use often leads to disappointment. Thin stands often result and the corn produced is usually very watery and has a low feeding value.

### 3. Mature Versus Immature Silage.

Late maturing varieties of corn give a heavy tonnage per acre of a poor quality silage. Early maturing varieties give lower yields of better quality. In deciding whether it pays better to grow a large tonnage of immature corn or a moderate tonnage of mature corn, several things must be considered. More of the immature corn must be fed to keep up the flow of milk and more grain must be fed with it in order to keep up the flesh of the dairy cow. The best practice therefore depends upon the price of grain, the labor cost, the price of land, etc. Figured in pounds of milk obtained per acre; the high yielding silage is the best, but many more tons of feed must be handled and more grain must be fed.

### 4. Value of Root Crops.

Small dairy farms can ill afford to have a silo because of the cost of the silo and its equipment and the expense of filling it. Root crops will be found of value in such cases. Root crops produce more tons per acre than silage, no hired help is necessary to harvest them, and they require no expensive equipment. Harvesting can be spread over a long period of time. They can readily be pitted like potatoes.

## II. SUCCULENT FEED RECOMMENDATIONS.

1. Owners of small dairy farms considering building silos will do well to give root crops a thorough trial before going to the expense that silos entail.

2. The practice of going to a store and buying corn at random for seed is an expensive practice. It is far safer to spend a little more money and buy corn seed of known origin. Many poor stands and poor crops are brought about by using seed of which nothing is known.

3. Every dairy farm should have succulent feed, either silage or root crops.

4. Minnesota 13 and Golden Glow are standard silage varieties. Growers wanting seed of later maturing corn can find very reliable seed in southern Oregon or Malheur county. This seed will give better results than can be obtained by buying eastern seed at random.

5. Dairymen with a small amount of high priced land can make better use of that land by using later maturing, higher yielding varieties than Minnesota 13. Farmers with plenty of land but short of labor will do better to grow Minnesota 13 of a strain which will mature.

6. For a summer green feed or soiling crop, there is nothing better than alfalfa. Owners of small farms or others who lack sufficient pasture will do well to investigate the possibility of growing Grimm alfalfa, cutting and feeding it green throughout the summer and fall.

## PASTURES.

### RECOMMENDATIONS.

1. Pastures are necessary for cheap milk production. They are not possible in all cases, but could be used to a greater extent than is the case now.

2. On many dairy farms the net return per acre could be larger by using as pasture part of the land now in grain. The overhead expense of a pasture crop is very small, whereas the overhead of a grain crop is large.

3. All pastures should be cross fenced so as to allow for rotation. They should be grazed close to keep weeds down but overgrazing kills the grass.

4. It is better to buy grass seed of the kinds desired and mix them on the farm than to buy commercial pasture mixtures. These are often made up of poor quality seed.

5. In England where land is high priced and scarce 50 per cent of the entire tillable land area is kept in pasture; the pastures are rotated across the farm and help to build up the soil fertility. This would be a paying practice on many Multnomah county dairy farms.

6. Land in pastures keeps down the general farm overhead by reducing labor costs of all kinds and by cutting down feed bills.

(Signed) H. W. LYNCH. Chairman.

TOTAL AREA IN UNITED STATES DEVOTED TO  
CROPS GROWN IN OREGON.

Crop	1919 Acres	1909 Acres
Corn .....	87,770,000	98,380,000
Wheat .....	73,100,000	44,260,000
Oats .....	37,991,000	35,160,000
Hay and Forage.....	81,620,000	72,400,000
Potatoes .....	3,250,000	3,670,000
Apples* .....	2,500,000	3,500,000
Peaches* .....	800,000	1,300,000
Pears* .....	300,000	350,000
Plums and Prunes*.....	300,000	300,000
Small Fruit .....	250,000	270,000

\*Estimated.

For Tables showing Relation between  
Production and Consumption of Principal  
Agricultural Products for Oregon and the  
Pacific coast see page 39.

# Horticulture Report

Amount of fruit handled by Cooperative Berry Growers at Gresham (showing in pounds the increase of berry production).

	1921	1922	1923	1924
Raspberries .....	463,660	912,553	1,862,216	212,581
Strawberries .....	194,399	337,031	307,486	280,634
Loganberries .....	94,481	297,507	212,546	638,691
Blackberries .....	69,311	112,286	168,861	189,622
Blackcaps .....	3,448	30,992	18,465	23,575
Gooseberries .....	710	1,353	6,006	5,770
Currants .....	596	1,355	4,252	1,962
Cherries .....	13,547	124,808	58,446	318,511
Plums .....	234	985	.....	.....
Pears .....	.....	.....	.....	420,695
Total tons.....	420	909	1,319	2,002

## I. THE SITUATION.

In our study and survey of the horticulture industry of Multnomah county, both present and future, we conclude and recommend that plantings should be developed to fit supply and demand, as far as possible. By following this as our principal premise and guide we feel we are proceeding on an economic basis that is sound and one that is fundamentally essential to our progress and success.

### 1. County Small Fruit Acreage Not Well Balanced.

In the past, county plantings have been made irrespective of a balanced horticulture program, since the red raspberry acreage occupies 50 per cent of the total berry acreage, while strawberries follow with 25 per cent. Logans occupy the greater percentage of the balance with blackberries, blackcaps, gooseberries and currants following in order mentioned. In addition, 750,000 pounds of cherries are produced annually together with apples, pears, prunes, peaches, walnuts and filberts.

### 2. Fruit Production in United States Has Increased.

Fruit production in the United States has increased considerably during recent years. Commercial production of fruits marketed in the fresh state has increased approximately 75 per cent since 1917. Consumption of canned goods, according to the manager of the Northwest Cannery association, is increasing about 50 per cent per year. In many cases increased production has outdistanced the increased consumption.

### 3. National Fruit Requirement Almost Reached.

Leading dietitians estimate the fruit requirement for an adequate diet for the American people at 340,750,000 bushels. Our present total production just about equals this, showing little room for expansion in the fruit industry as a whole. Those fruits underproduced such as the sweet cherry and blackcap raspberry for the fresh fruit market and the sweet cherry, strawberry and red raspberry for the cannery, may be increased to advantage. Other fruits which are overproduced must be reduced to fit the demand.

### 4. Balanced Production Needed.

The Portland market provides a good demand for fresh fruit of many kinds. Our local cannery is a sure market for large quantities of locally



grown fruits. At the present time this demand is supplied only as far as red raspberries and loganberries are concerned.

The capacity of this cannery is about one thousand cases per day. Red raspberries and loganberries keep the plant busy for less than one month. Canning crops of earlier and later harvesting seasons would extend the use of this plant, materially cutting down the overhead cost on our pack.

Gooseberries, strawberries, blackcaps, blackberries, etc., are crops admirably adapted to our soils and climatic conditions and could be used for this purpose.

The demand for barreled fruits is also good. Strawberries, raspberries, both red and black, and loganberries may be marketed in this form.

Our local plant handled quantities of strawberries, red raspberries and loganberries in this way the past season. The canning and barreling plant offers real insurance against low prices on the fresh fruit markets and should be given serious consideration in the horticultural development of our county. Independent growers within the district are urged to ally themselves with our local cooperative association.

## 5. National Berry Acreage Has Decreased.

In view of the fact that the small fruit acreage of the United States has gradually decreased since 1899 from 309,778 acres to 272,468 acres in 1909 and to 249,084 acres in 1919, there is evidence of a self adjusting economic condition, in that concentration of berry acreage is now limited to areas well adapted to berry culture. Multnomah county is especially well adapted to berry culture. We rank second to none in raspberry production, both in quality and quantity.

Our acreage of small fruit has increased from less than 1000 acres of small fruits in 1919 to approximately 2000 at the present time.

## II. HORTICULTURE RECOMMENDATIONS.

### Red Raspberries.

1. The acreage of the red raspberry should be maintained and an additional increased planting of ten per cent made annually.
2. The Cuthbert is the only variety recommended for planting.
3. Average yields of at least two tons are necessary to meet costs of production. Increasing our yields per acre is the most effective way for decreasing our cost of production per pound.

### Strawberries.

1. The acreage of strawberries should be maintained with an additional ten per cent annually.
2. New Oregons and Marshalls are the two most favored varieties. Etterburg 80 should occupy about twenty-five per cent of our acreage. Etterburg 121 and Johnson should be tried out in an experimental way as possible canning berries for this district.
3. Weevil free plants and weevil free land, only, should be used.
4. Two tons per acre average yields are necessary to meet the costs of production.

### Loganberries.

1. Locally produced loganberries are preferred for canning purpose to those of less favored portions of the Willamette Valley and western Washington. Our acreage of this fruit should be rejuvenated and maintained wherever a yield of at least two and one-half tons per acre can be averaged.
2. Additional plantings equal to ten per cent of the present acreage should be added yearly to meet the market demands.
3. The high iodine content of the loganberry should be advertised to

increase the consumption of this berry. It surpasses all other fruits and vegetables as well as the sea foods in iodine content.

#### **Blackberries.**

1. Maintenance of the present acreage with annual ten per cent increases are recommended.
2. Evergreens and Himalayas are the varieties suitable for local planting.
3. Two and one-half tons per acre are necessary to meet the cost of production.

#### **Blackcap Raspberries.**

1. Plum Farmers, Mungers and Cumberlands are the varieties recommended for local planting.
2. The present acreage should be increased fifty per cent this year to meet the present demand.
3. Average yields of one ton per acre are required to meet production costs.
4. Great care is urged in securing plants free of bramble-streak, blue stem and other virus diseases.

#### **Grapes.**

1. The acreage of grapes in our county can be safely increased twenty-five per cent.
2. Campbell's Early is the leading commercial variety. Wordens and Concord are two other blue varieties locally grown. Niagara as a white grape and the Delaware as a red one are recommended for home use.

#### **Cherries.**

1. Black Republicans or other varieties of proven worth as pollinizers should be top-worked in our present Royal Ann, Bing and Lambert plantings.
2. Cultivation and fertilization are recommended to facilitate pollination. This will also materially increase yields.
3. An increased acreage of Royal Ann interplanted with about eleven per cent Black Republicans as pollinizers is recommended.
4. Other varieties should not be increased beyond the fresh fruit market demand.

#### **Nuts.**

1. Barcelona filberts with eleven per cent of Daviana, White Aveline and Du Chilly as pollinizers, may be planted in a small way in the county.
2. Franquette walnuts on soils well drained may prove profitable if planted in frost free and silver thaw free locations.

#### **Other Fruits.**

Apples, pears, plums, currants, etc., should be planted only where local markets exist.

(Signed) D. E. TOWLE, Chairman.

# Report of Livestock and Dairy Group.

## I. THE SITUATION.

The dairy group of the Multnomah County Economic conference, in studying the dairy statistics of the county finds that there are approximately 8,500 dairy cows, 2 years old or over, whose average annual production is 213 pounds of butterfat each and that there are 200 dairy bulls, 52 per cent of which are purebred. Dairy cattle are found on about 1500 farms, making the average number per farm less than six. Census reports show that 5500 tons of legume hays are produced in the county. Observations of dairymen indicate 75 per cent of the dairy farms have silos, 10 per cent grow root crops while only 5 per cent raise no succulent roughage. Large amounts of feeds are bought by dairymen. In one section of the county, during the past year, over 400 cars of hay and 400 tons of mixed feed were bought.

### **Dairying Is on Decline.**

A further study of statistics shows that dairying of the county is on the decline. This is particularly noticeable since 1920. Dairy feeds produced in the county, with the possible exception of succulent roughage, have decreased to even a greater extent. This may be due to rising land values, which in turn raise production costs, with the result that more intensified crops are being grown that may give a higher acre. return. Rising costs are also affecting size of the dairy unit that can be made profitable. Units of six cows and less are only a side line and can only be continued by working longer hours or using family labor at less than regular wages. Costs are materially lessened where the maximum number of cows per person are kept, and in the larger herds labor saving machinery effects further cost reduction.

### **Local Market Is Among the Lowest.**

Necessity for close attention to costs is increased from the fact that prices of product have not kept pace with those cost factors which cannot be controlled. In fact the local market for whole milk is reported to be among the lowest in the United States, and with the state producing a surplus of dairy products the market for cream to be used in butter manufacture is frequently lower than that for other coast cities. Transportation facilities are making competitive conditions even more keen, as milk may now be shipped satisfactorily from sections where land values are less than half those of this county.

### **Vegetable Oil Competition Disastrous.**

Conditions are in no wise improved by the sale in the county of huge amounts of tropical vegetable oil products as dairy product substitutes. The low standards of living common to sections producing these vegetable oils make this competition disastrous to dairymen of this county.

### **Production Per Cow Relatively High.**

The average production per cow is much above the average for the state and is above that for most of the counties. The high production costs, however, make even this high average too low to insure a profit.

Figure 3 shows the counties of the state that lead in average milk production per cow, according to the 1920 U. S. census.

The percentage of purebred sires in use in the county is higher than that for the state, and with a little effort could be made 100 per cent.

## Average Milk Production Per Cow —

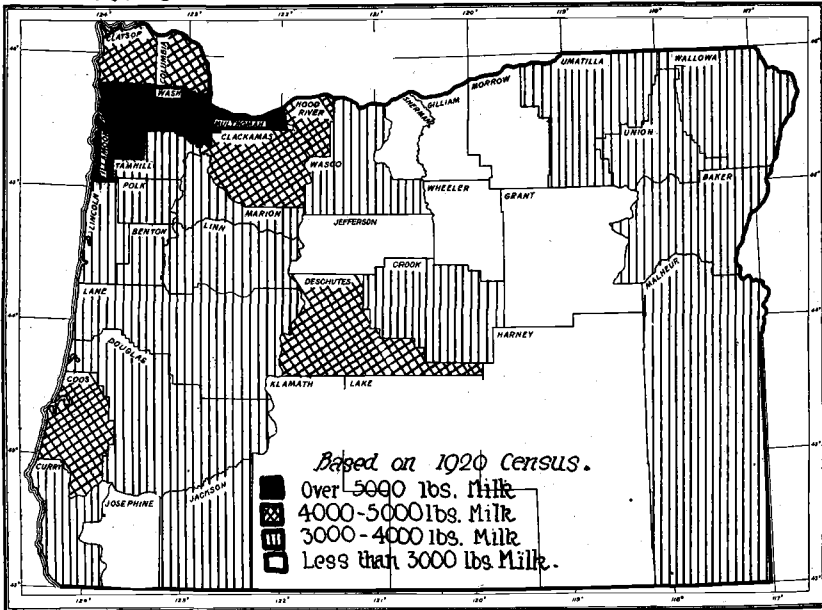


FIG. 3.

### II. DAIRY RECOMMENDATIONS.

1. That for economical production, commercial herds should consist of not less than 10 cows.
2. That production of 275 pounds of butterfat or 7000 pounds milk annually per cow be recognized as the minimum on which profits can be obtained.
3. That approved purebred dairy sires be used exclusively as a means of building up herds to the above production standard, and that a campaign be held to rid the county of all scrub sires.
4. As a further means of attaining the production standard set above, that all dairymen keep systematic records of production on their individual cows, and that the conference chairman appoint a committee to investigate the feasibility of forming a cow testing association.
5. That a compulsory county tuberculosis law be enacted and that any efforts made to place the whole of western Oregon on the compulsory basis be supported.
6. That every dairyman endeavor to raise adequate amounts of succulent feeds such as silage, kale and roots. Root crops are especially recommended for farms where herds are too small to make silos practical.
7. That the attention of our representatives in congress be called to the disastrous competition caused by tropical vegetable oils and that they be requested to impose such additional duties or taxes on these products as may be applicable.

8. That the purebred dairy cattle breeders of the county support the boys' and girls' calf clubs in their work and especially in assisting them in getting the use of approved purebred dairy sires to mate with their animals.

9. That a committee be appointed for the investigation of dairy marketing conditions in Portland, a representative of the Oregon Agricultural College and Portland Chamber of Commerce to assist the committee in an advisory capacity. It will be the function of this committee to determine reasons for the relatively low price of dairy products on the Portland market, and to determine whether or not any improvement can be made.

### III. SHEEP AND HOG RECOMMENDATIONS.

This group also considered the advisability of keeping sheep and hogs on farms of the county, and makes the following recommendations.

1. Year in and year out farm sheep are profitable on the larger farms and where the cropping system makes available an ample feed supply. In starting this enterprise at this time some caution should be exercised because prices of breeding stock are now quite high.

2. Raise one pig for every cow on farms selling cream. Raise one pig for every five to twenty acres of grain. Raise one pig to consume garbage. Do not expand pig industry faster than feed production.

(Signed) THEODORE BRUGGER, Chairman.

# Poultry Group Report.

## INTRODUCTION.

Multnomah county ranks seventh in the state in value of poultry and eggs produced. According to the census of 1919, the value of poultry and eggs produced was \$388,022. Five per cent of the total farm cash income of the county was derived from the sale of poultry products.

The poultry industry has had a normal increase in size of flocks and in the number of new flocks since 1919. There has been a rapid increase in new hatcheries established and in the number of day old chicks produced for sale. The above valuation figures are not comparable to the present day status, and are given only to show the general magnitude and trend of the industry.

### Many Have Failed at Poultry Keeping.

Poultry keeping, when intelligently managed, has proved a profitable crop during each of the post-war years of deflation. This fact caused many to rush into the poultry business, as a relief measure, without due knowledge of the detailed problems involved. As might be expected, many of this number failed.

While Multnomah county has a large number of specialized poultry farms and many well balanced farm flocks of 400 or 500 hens, a large part of the total volume is produced on farms where poultry is not considered important and gets only haphazard care. Multnomah county faces the problem of stabilizing its poultry industry and adjusting the size of its flocks to the interest, available labor, land and capabilities of its individual farmers.

Poultry keeping, whether a specialized business or farm sideline of 400 or 500 hens, is a technical business. It requires more detailed management than the average person is willing to give. It is not a business for which everyone is adapted. Hence, there is no reason to assume that any higher percentage of persons will succeed in the poultry business than in any other line of endeavor.

### Market Outlook for Multnomah County Poultry Products.

The poultry industry of Multnomah county cannot be considered as an independent unit. It must be considered in relation to the poultry industry of the state and the nation.

Oregon produces a surplus of eggs above the needs of home consumption. The county makes a liberal contribution to this surplus. This condition has existed for several years and each producer must realize that his flock is producing eggs for a market already overproduced, in so far as the county and state are concerned. However, the national poultry situation would not be affected much if any, if Multnomah county discontinued the poultry industry entirely or doubled its present volume. Oregon must find a market outside of the state for its surplus eggs. It exported last year approximately 200 carloads of eggs.

The fact of vital interest is that a strong outside buying demand exists for the surplus eggs of GOOD QUALITY which Oregon produces.

The present cooperative marketing agency known as "The Pacific Co-operative Poultry Producers Association," is a vital factor in marketing Oregon's surplus eggs. This association is of benefit to both members and non-members. Its expansion should be encouraged.

A survey of the national poultry situation does not show any cause for alarm. No difficulty is foreseen at this time in marketing the surplus eggs

of quality or a reasonable increase in volume. The rapid turn over in the poultry personnel, the numerous failures, losses from disease, wrong management, lack of capital, a general stabilization of other farm crops, increased population and an increasing consumption of poultry, meat and eggs, are all factors which have an important bearing in preventing a national overproduction.

## RECOMMENDATIONS.

### 1. Minimum of 400 for Farm Flocks, 1500 for Commercial Units.

Many farm flocks are too small to be considered an important phase of farm work. Such flocks usually suffer from neglect and poor management. Yet, during the flush season, a great volume of inferior eggs are "dumped" on the overproduced markets. Poor quality undermines the entire poultry industry to the extent that such eggs are permitted to reach the consumer.

On Multnomah county farms where some labor is available each day, where green feed can be produced throughout the year, where capital is available to provide proper housing and management, the poultrymen hereby recommend the gradual establishing of a flock of not less than 400 hens and pullets as an economical side line issue.

On farms not interested in poultry, where other farm work does not permit daily surplus labor, it is recommended that such flocks as are now being carried be reduced to the number necessary to supply only the home table.

As a major farm activity or specialized business, where one man expects to derive his income from poultry, it is recommended that, as soon as experience warrants, a minimum unit of 1500 hens and pullets be established. The percentage of pullets each year should not fall below 50 per cent of above number.

### 2. Purchase Chicks Early.

Poultry producers must have the benefit of the fall and winter prices for eggs in order to secure a better average price per dozen for the year. They must have fall and winter production in order to get the most months of production from the pullets before the natural molting season.

It is strongly recommended that producers secure the chicks early enough in the spring to be old enough to come into flock production by October. Late February, March, and April is recommended as the most suitable time.

### 3. Chicks Should Be of Uniform Age.

It is false economy to attempt to brood and range together chicks of different ages. It is better business to secure, for example, 500 day-old chicks at one time, to get 200 pullets, than to attempt two or three hatches from an incubator of small capacity. A uniform lot of chicks simplifies the brooding, feeding, growing, housing, labor and production.

It is recommended that producers secure all chicks at one time where only one brooder and one common range are available.

### 4. At Least 15 Acres Needed for Every 1500 Hens.

Many poultry enterprises, successful for a time, have been compelled to quit business because of soil contamination. This is caused by using the same area over and over for brooding and ranging the stock. One and two acres devoted to poultry keeping on a large scale is hazardous, where young stock is reared annually. Real estate agencies should not exploit such small tracts for intensified poultry raising.

It is recommended that commercial poultry keeping should not be at-

tempted on less than 15 acres of tillable land, for a unit of 1500 hens, where chicks are to be reared each year. A system of field alternations must be worked out on this minimum area to make poultry keeping a success over a period of years. Additional range territory may be needed at times for growing stock, such as orchards, groves or fields in order to provide disease free soil.

The overhead investment necessary in operating a poultry enterprise is large. There is no use in jeopardizing the investment by trying to economize on land. A lack of sufficient acreage has been the chief factor in the downfall of poultry farms.

#### **5. Movable Brooder House Is Best.**

Poultry producers of the county will succeed according to their foresight and ability to raise pullets to maturity that are vigorous and free of intestinal inflammation and parasites. This can be done more safely through careful effort to brood chicks and range them on clean soil each year.

The movable brooder house is recommended as the safest system of brooding chicks. Producers may guide their construction plans by Experiment Station circular 52. For this system of brooding the coal burning brooders were given first endorsement by those expressing opinions. Small sized hard coal or gas briquettes were highly recommended as the desirable fuel. The use of oil brooder stoves with inside reservoirs was generally discouraged on account of fire hazard and insufficient temperature during cold weather. Opinions varied relative to the use of electric brooders as many felt that they were still in the stages of experimentation.

On farms where a permanent brooder house is desired or because of hill land it must be used, it is recommended that it be located in the center of a given area in such a way that two or more yards may be provided. Under this system it is understood that only one yard is to be used each year in its logical turn.

The opinion relative to types of brooders for the larger permanent brooder houses varied between the use of coal oil brooders with outside tanks, the coal stove, and electrical types.

The actual cash outlay for brooding and bringing the pullets into production is slightly above one dollar at present feed prices. This does not include labor, interest on investment, taxes and depreciation of equipment.

The approximate cost of feeding the pullet from six months of age for one year at present prices is \$3.00.

The necessity of protecting the investment and future of the business demands careful study and arrangement of brooding equipment.

#### **6. Use Range House Recommended By College.**

In any system of brooding the brooder house and brooder yard are to be used only until the pullets are old enough to do without artificial heat and are old enough to be moved out on free range.

It is therefore recommended that producers use a range house like or similar to the one recommended by Oregon Agricultural College in Station Circular 54.

#### **7. Proven Type of Laying House Should Be Used.**

Proper poultry houses are necessary for the permanent home of the pullets when they are ready to move in off the range. Too many laying houses are constructed according to some untried hobby rather than to use as a pattern some type of house that has proven satisfactory. It is recommended that producers desiring to build laying houses be guided by the building plans set forth in Station Circular No. 51.



### 8. Green Feed Throughout the Year.

Green feed is one of the four major classes of poultry feeds necessary to growth or egg production. The four classes are as follows: mineral, animal, grain (ground, cracked and whole) and green feed. Green feed is the most important item in the ration of growing chicks. It increases the efficiency of all other feeds fed, supplies vitamins, adds bulk to the ration in the cheapest form and should be fed in abundance.

Kale does not always live through the winter in the county, hence, root crops, alfalfa hay, cabbage, etc., should be provided each year as an emergency feed.

The hen must produce fifteen dozen, or 180 eggs, per year in order to return the owner a dollar for his labor. Green feed safeguards the health and vigor of the flock and as such is a vital factor in getting the desired egg yield.

It is recommended that poultry keeping be discouraged on farms where green feed in some form cannot be economically supplied throughout the year.

### 9. Expansion of Industry Here Is Justified.

Climatic conditions and availability of green feed are factors quite favorable to poultry production in the county. The marketing of surplus quality eggs is now done efficiently through the state cooperative marketing agency. Rail and highway conditions are favorable for transportation of produce to market and of feed and supplies back to the farm.

Soils not used for poultry would be enriched by the fertilization value of poultry manure. The smaller farms of the county frequently have surplus labor to invest, which may be used economically with a balanced poultry enterprise.

Inasmuch as a market exists for good eggs, it is therefore recommended that poultry keeping be increased in the county, provided such increase be guided by the principles of management outlined in the foregoing articles of this report.

### 10. Considerable Capital Necessary.

Poultry propaganda is misleading and too little has been said relative to the capital necessary. It has been exploited as an easy business, one that requires but little capital and little experience.

The poultry group assembled desires to present the following facts for the benefit of those desiring to engage in the business. Costs will vary with different individuals according to plans, ideals and ideas.

Where the farm and home are owned, it will require an outlay of cash of approximately \$2.90 to raise the average pullet to an age where she starts to produce eggs. This cost is pro-rated as follows:

Brooder house, brooder and brooding.....	\$ .40
Feed plus mortality losses to six months of age.....	1.00
Permanent laying house, material and labor.....	1.50

Where the land is to be purchased, dwelling, fences and new buildings erected, chicks, equipment, feed, etc., purchased, the overhead per bird will vary from \$8.00 to \$10.00.

### 11. Disease Investigation Needed.

One of the serious, limiting factors of poultry production in the county or state is the increase of poultry diseases. The poultry industry in Oregon was valued in excess of \$10,000,000 for the year 1924. The rapid development of commercial poultry keeping, high rates of egg yields, intensified systems, concentrated rations and other factors, are constantly producing troubles

which result in heavy losses to the individual owners and to the state as a whole. A growing industry of this magnitude and an industry which has returned a profit to the grower during the period of deflation, should warrant, at least, one man's study of its disease and nutrition problems.

It is recommended that the Multnomah County Agricultural Economic conference endorse the bill sponsored by the Oregon Poultrymen's association, and Pacific Cooperative Poultry Producers association, to secure a small appropriation from the state legislature to carry on this work.

## **12. Repeal Cold Storage Law.**

The poultrymen believe that the consumption of eggs is materially reduced by the present cold storage egg law. Cold storage of eggs is necessary in order to prevent a demoralized price during the season of flush production.

Fruits, vegetables, meats, dairy products, etc., that are held in cold storage are not required to be offered for sale under a cold storage sign.

There are only two classes of eggs: namely, "fresh" and "cold storage." The present law is not enforced and admittedly cannot be enforced under present conditions.

The poultry commodity group hereby endorses the efforts of the Pacific Cooperative Poultry Producers association to have the legislature repeal the present cold storage egg law and pass instead a law requiring that eggs be sold according to size and quality.

(Signed) A. H. DOWSETT, Chairman.

## Report of Vegetable Crops Group

The past few years, the acreage of celery, cauliflower, cabbage, lettuce and some of the other vegetable crops has been increasing and an outside market is being developed. Many broker lots and mixed cars of vegetables are shipped from Portland to outside markets.

The accompanying table will indicate the straight cars of vegetables that have been shipped from Fairview and Troutdale the past five years. This will indicate a growing demand for the local grown products; especially celery from the Troutdale district, which has won the national championship for the past three years, and produces cauliflower which is of a very high quality.

### I. THE SITUATION.

The vegetable group of the Multnomah County Agricultural Economic conference in studying the requirements of the local market finds that 2966 carloads of vegetables were unloaded in Portland in 1924, of which Oregon supplied only 276 cars aside from what is hauled in by truck. California supplied 1332 cars, Washington 894 cars, Mexico 111, Texas 104 and other states 249.

#### SHIPMENT OF VEGETABLES FROM TROUTDALE AND FAIRVIEW.

Number of Cars as per O. W. R. & N. Figures.

Kind	FAIRVIEW					TROUTDALE				
	1920	1921	1922	1923	1924	1920	1921	1922	1923	1924
Celery	..	..	..	..	3	..	1	18	72	93
Cabbage	..	..	..	..	18	3	14	1	1	28
Cauliflower	..	..	..	..	..	..	..	..	2	9
Lettuce	..	..	..	..	1	..	..	6	..	11
Squash	..	..	..	..	1	..	..	..	..	2

The possibilities of expansion from the standpoint of land adapted to vegetable growing are great. Several thousand acres of dyked land adapted to celery, cabbage, cauliflower, lettuce and other vegetables are available. At present some of the best cauliflower and lettuce is grown on the upland, of which many thousand acres are available and now used by general farm crops.

The local market is supplied mostly in season by the local diversified vegetable growers so the committee is confining its recommendation to those products which are largely wholesaled and are shipped out of the state.

### II. VEGETABLE RECOMMENDATIONS.

The vegetable group wishes to recommend to the general conference as follows:

#### 1. Cooperative Marketing Organization Needed.

Inasmuch as it seems that the future success of the vegetable industry depends on successful marketing we strongly recommend the organization of a cooperative marketing organization and request the chairman of the conference to appoint a committee to investigate the possibilities of such an organization and bring the growers together for consideration of the same.

## **2. Cold Storage Will Extend Marketing Season.**

Greater use should be made of available cold storage facilities so as to reach the local market with a larger amount of vegetables at seasons when they are being supplied by other states. We also urge the use of varieties that will lengthen the local marketing period.

## **3. Precautions for Beginners.**

Gradual expansion of the industry as the markets are developed is feasible but we wish to call attention of those going into the industry to these facts:

(a) Vegetable growing is a specialized industry and the beginner without experience should start on a small scale, and with care.

(b) The market outlet is only for vegetables of the best quality. Returns are satisfactory on high yields of good quality, but the grower of low yields of poor quality is sure of financial losses.

(c) Growing of vegetables in general, and especially such crops as celery, lettuce, and cauliflower is expensive and requires a large initial capital. On these crops it will require from \$300 to \$500 per acre before any returns are received.

As a general rule vegetable gardening does not combine with other agricultural industries to advantage.

(Signed) W. C. SPENCE, Chairman.

## Report of Farm Management Committee.

The various commodity groups of this conference have considered the problems affecting a particular commodity as a single farm enterprise. This committee, representing each commodity group, considers the whole farm as a business unit. This committee defines a successful farm business to be one which pays the operator good interest on his investment and pay for his labor. The farmer is, therefore, concerned with all profitable enterprises or combinations of enterprises which adapt themselves to his individual farm. He is concerned in the development of a farm plan which will create a well balanced business and utilize to the best advantage his available land, labor and capital.

### ENTERPRISE COMBINATIONS OR PROFITABLE SIDE LINES.

This committee believes there is an opportunity for the adoption or re-organization of profitable side lines or combination of profitable enterprises and recommends the following:

1. On farms where dairying is the major source of income the farm plan might include the following enterprise combinations.

- (a) Dairying, hogs or poultry (400 hens unit).
- (b) Dairying, hogs or poultry, vetch, seed and potatoes.
- (c) Dairying, hogs or poultry, farm sheep, and a cash crop such as potatoes.
- (d) Dairying and small fruits.
- (e) Dairying, poultry and small fruits.

2. On farms where small fruits contribute the major income the following side line enterprises may be included:

- (a) Small fruits and poultry.
- (b) Small fruits and potatoes.
- (c) Small fruits and cucumbers.

3. On farms where poultry is the major enterprise, adapted combinations would be:

- (a). Poultry and berries.
- (b). Poultry and vegetables.

4. For the general diversified farm the following enterprise combination or portions of it adapted to the size of farm, is desirable:

- (a). Dairying, hogs or poultry, farm sheep, vetch seed, potatoes or other minor cash crops.

This committee further recommends that the following definite steps be taken to increase interest and secure the practical application and adoption of these enterprise combinations on farms of the county.

1. That organized tours of farmers be conducted for the purpose of studying side lines and combinations where they are now successfully practiced.

2. That the county agent present the subject at farmers meetings in the county.

### SIZE OF FARMS.

This committee believes many farms are too small or the income enterprises too limited to make them a paying business, and it recommends that every farm business should be large enough to produce a gross annual in-

come of at least \$2000, and employ to capacity available labor, equipment and capital.

### GOOD STANDARDS FOR MULTNOMAH COUNTY.

After analyzing the major factors which influence profits in farming in Multnomah county this committee has set up a series of "standards" which it believes will be helpful in enabling farmers to measure and compare the efficiency of their farm business. These "standards" have already been reached and passed by some of our best farmers and are within the reach of all farmers.

#### 1. Receipts from Livestock:

- (a). Milk receipts per cow, \$125.00. (County average now approximately \$100).
- (b). Pounds milk per cow per year, 7,000. County average now approximately 5300 pounds.
- (c). Pounds butterfat per cow, 275. (County average now 215 pounds).
- (d). Live pigs per sow, 6.
- (e). Pounds wool per sheep, 8.
- (f). Per cent lambs per ewe, 150.
- (g). Eggs per hen per year, 180 or better. (County average now 110).

#### 2. Yield of Crops:

At least 30 per cent above the average acre yield for the county.

#### 3. Use of Labor:

Sufficient acreage of crops; sufficient livestock and diversity to keep all man and horse labor productively employed the year around.

### THE KEEPING OF FARM ACCOUNTS.

This committee believes the first step in the successful management of a farm is the keeping of simple farm accounts and strongly recommends that every farmer secure a suitable farm account book and keep a financial record of the farm business. (Account books may be obtained from bankers, from the county agent or from the Extension Service of Oregon Agricultural College).

In order to increase interest and secure a better understanding in simple farm accounting the committee further recommends:

1. The conducting of farm account meetings in the county.
2. The teaching of simple farm accounts in the eighth grade of rural schools, as a small part of the arithmetic course.
3. The organization of boys' and girls' farm account clubs, each boy to keep the record of his father's farm. (Three years previous club experience being required of the boy).

### PURCHASE OF FEED.

Multnomah county farmers spend approximately \$1,000,000 per year for purchased feed. This committee recommends that with the exception of specialized poultry, fruit and vegetable farms, all feeds should be home grown where possible.

### MARKETING.

This committee recommends cooperative marketing where possible.

(Signed) H. W. Lynch, D. E. Towle, J. J. Hearren, F. N. Lasley.

# Development and Status of Multnomah County Agriculture.

Multnomah county was organized in 1864 and its agricultural development and settlement has been determined almost entirely by the growth of the city of Portland. It is the smallest county in the state but is by far the most densely populated. The 1920 U. S. census credits the county with a population of 275,989 of which number 93.6 per cent is urban and 6.4 is rural. Table number 1 indicates the growth of population in this county since 1860.

**TABLE NO 1.**

## POPULATION STATISTICS OF MULTNOMAH COUNTY

Compiled by O. A. C. Extension Service from U. S. Census Records.

Census Year	TOTAL			DISTRIBUTION					
	Per Sq. Mile	No.	Percent Increase	Rural	Total Percent	Increase	Urban	Total Percent	Increase
1860	....	4,150	....	....	...	....	....	...	....
1870	....	11,510	177.5	....	...	....	....	...	....
1880	....	25,203	119.0	....	...	....	....	...	....
1890	....	74,884	197.4	....	...	....	....	...	....
1900	240.5	103,167	37.8	12,741	12.3	....	90,426	87.7	....
1910	501.7	226,261	119.3	14,175	6.3	11.3	212,086	93.7	134.5
1920	635.7	275,898	21.9	17,610	6.4	24.2	258,288	93.6	21.8
State	8.2	.....	....						

Population per square mile: Total, 635.7; Rural, 40.6.

Changes in boundaries: Part annexed to Hood River, and parts of Hood River and Clackamas annexed, since 1910.

Multnomah county has a total land area of 277,760 acres according to the 1920 United States census. Over one-eighth of the county is occupied by the city of Portland. About one-tenth of the area in the eastern part of the county is in the Mt. Hood national forest. Of the 100,496 acres in farms 46,148 acres, or 16.8 per cent of the total land area, are improved.

### Average Size of Farm Has Decreased.

Table number 2 indicates the growth of agriculture in the county since 1860. Study of this table will bring out the steady increase in the number of farms and a corresponding increase in percentage of improved acres per farm. It is noted that the size of the average farm has steadily grown smaller since 1860 until in 1920 it reached 55 acres. Sixty-eight per cent of the farms of the county range in size from 2 to 49 acres. The majority of the remainder contain from 50 to 174 acres.

As the size of the average farm decreased an increase in percentage of improved acres per farm is noted. In 1860 only 10.1 per cent of the farm area was improved, while in 1920 the percentage is given as 45.9, indicating the trend toward more intensive types of agriculture.

(See Table No. 2 on page 34)

### Large Investment in Agriculture.

Because of its small area and the fact that the city of Portland is includ-

ed within its boundaries Multnomah county agriculture is not ordinarily thought of as an industry of any considerable proportion. However, the 1920 census credits this county with having almost 29 million dollars invested in farms, including land, equipment, livestock and buildings. That is an average of over 15 thousand dollars per farm. Only eight counties in the state exceed Multnomah in total value of farm property.

Growth of farm property values since 1860 is shown in table number 3.

Proximity to Portland has resulted in high land values. The average value of land per acre is given as \$220.40, a figure exceeded by only one county in the state (Hood River). Improved land in this county has sold all the way from \$100 to \$1000 an acre. High land values have a direct bearing on types of agriculture that can be profitably followed.

(See Table No. 3 on page 34)

### AGRICULTURAL DEVELOPMENT TRACED.

(From Bulletin on Soil Survey of Multnomah County, by C. V. Ruzek, Oregon Experiment Station, and E. J. Carpenter, U. S. Bureau of Soils).

Early activity of settlers in this county was confined largely to lumbering and the marketing of wood products drawn from the forests that covered the entire county. With the growth of the city of Portland demand for agricultural products stimulated the clearing of land for farm use.

The census of 1880 showed 5,523 acres in hay, yielding 9,491 tons. The chief cereal crop was oats, with 882 acres. Wheat was second with 622 acres and barley, buckwheat and corn occupied a combined area of 84 acres. Potatoes, with a production of 210,475 bushels held an important rank as a cash crop. Total market-garden produce was valued at \$43,990 and orchard fruits at \$26,551. Forest products sold for \$61,535.

During the next decade (1880 to 1890) there was a marked increase in the production and acreage of all crops except potatoes. According to the 1890 census there were 1,305 acres in potatoes, yielding 131,918 bushels, or 78,557 bushels less than in 1880. The hay and oat crops showed pronounced increases, hay, with an acreage of 11,943 acres, yielding 24,694 tons, and oats, on 1,289 acres, yielding 44,430 bushels. Market-garden products, including small fruits, with a value of \$89,899, showed an increase of more than double over the previous decade. There was a material falling off in the marketing of forest products.

By 1900 the agriculture of the county was fairly well developed along the lines of meeting the special needs of the market at Portland. Both the dairy and poultry industries showed marked increases. According to the 1900 census the value of all dairy products was \$346,781, poultry \$25,909, and animals sold and slaughtered \$73,535. With the development of the livestock industry there was a marked increase in the production of hay and forage crops. Potatoes, small fruits, and truck crops became the cash crops of the county. There were 2,558 acres in potatoes, yielding 412,382 bushels; 2,687 acres of oats, yielding 110,230 bushels; 1,490 acres of wheat, yielding 37,490 bushels; and 450 acres in barley, corn, and rye combined. The value of the orchard products, grapes, and small fruit was \$157,769. The value of the small fruits alone was \$109,953. The acreage of small fruits was as follows: Strawberries, 400 acres; blackberries and dewberries, 190 acres; raspberries and loganberries, 118 acres.

### Intensive Agriculture Develops.

Further development along the line of specialized and intensive farming took place during the next 10 years. Dairying, market gardening, the production of small fruits, and poultry raising became the dominant agricultural industries of the county. According to the 1910 census, dairy products, exclusive of home use of milk and cream, were valued at \$732,242. Vegetables



**TABLE NO. 2.**

**NUMBER OF FARMS, LAND AREA, ETC., IN MULTNOMAH COUNTY.**

Compiled by the O. A. C. Extension Service from U. S. Census Records.

Census Year	Number Farms	ACRES IN FARMS			Percent land area in farms	Percent farm area improved	Average acreage per farm	Average improved acres per farm	Total land area in county	Percent total area improved
		Improved	Unimproved	Total						
1860	246	5,887	52,049	58,536	...	10.1	238.0	23.9	.....	....
1870	304	19,672	48,683	68,355	...	28.8	224.9	64.7	.....	....
1880	505	26,594	46,042	72,636	...	36.7	143.8	52.7	.....	....
1890	620	37,095	40,959	78,054	...	47.5	113.1	53.8	.....	....
1900	1,276	34,196	68,730	102,926	37.5	33.2	80.7	26.8	274,660	12.5
1910	1,478	36,011	50,251	86,262	29.9	41.7	58.4	24.4	288,640	12.5
1920	1,828	46,148	54,367	100,496	36.2	45.9	55.0	25.2	277,760	16.8

34

**TABLE NO. 3**

**FARM PROPERTY VALUES IN MULTNOMAH COUNTY.**

Compiled by O. A. C. Extension Service from U. S. Census Records.

Census Year	Number Farms	All Farm Property	Percent Increase	TOTAL FARM VALUES		AVERAGE VALUES PER FARM		
				Land	Buildings	All Property	Land Buildings	Land alone
1860	246	\$ 766,440	...		587,350	\$ 3,116	\$ 2,388	.....
1870	304	1,188,950	55.2		991,177	3,911	3,261	.....
1880	505	2,532,298	113.2		2,282,880	5,015	4,521	.....
1890	690	10,588,840	318.7		10,114,810	15,346	14,659	.....
1900	1,276	8,422,825	-24.5	6,642,490	1,022,720	6,601	6,007	64.54
1910	1,478	23,227,688	175.8	19,720,164	2,240,514	15,716	14,858	228.61
1920	1,828	28,908,385	24.5	22,149,525	3,934,317	15,814	14,269	220.40

were valued at \$413,582; orchard products and nuts, \$222,411; and poultry and eggs produced, \$139,189. With the development of the dairy industry, there was an increase in acreage of hay and forage crops, although not sufficient to meet the needs of the county. Oats were the principal grain crop, with an acreage of 3,119 acres yielding 143,390 bushels. Wheat occupied 355 acres, and small acreages of emmer, barley, and rye were grown. Corn grown principally for silage had a small but increased acreage.

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### PRESENT SOURCES OF AGRICULTURAL INCOME.

At the present time the agriculture of Multnomah county consists chiefly of dairying, market gardening, the growing of small fruits, and the raising of poultry. This development has taken place in order to meet the demands of the Portland market. Near the city, intensified, specialized farming is highly developed, and exclusive market gardening and the growing of small fruits is practiced on small acreages. On the larger acreages in this vicinity the dairy industry is highly specialized. Farther away from the city a combination of these branches with general farming is practiced. In the eastern and more remote sections of the county more attention is given to field crops, with potatoes as the cash crop.

The livestock industry, of which dairying is the most important, produces more wealth than any other branch of agriculture. Dairying is more general along the Columbia river, where the overflow lands in their present state are suitable only for pasture and wild hay. Well-kept herds are also found where general farming is practiced. Animals of Holstein-Friesian or Jersey breed are most numerous. Practically all of the milk and cream is marketed in Portland by truck. According to the 1920 census the value of all dairy products, exclusive of home use, was \$1,686,185.

The raising of poultry and the production of eggs, in addition to being carried on to a limited extent on almost every farm, is a specialized industry in certain sections of the county. Within the last few years this industry has developed very rapidly, and the county now ranks as one of the leading poultry-producing counties of the state. According to the 1920 census poultry and eggs reached a value of \$388,022.

A few hogs are kept on every farm. The surplus above those needed to supply meat and lard for home use is marketed. Flocks of sheep and a few herds of goats are found in the hilly section of the county.

Truck and small-fruit crops rank next to dairying as a source of income in the county. These are grown intensively on small acreages around Portland. The farms range in size from 2 to 10 acres and are farmed both by owners and by tenants, the latter chiefly Japanese and Italians. Very intensive methods are used, and the land is kept continually in cultivation. The soils in this section are fairly well adapted to this kind of farming, but the demand of the market has had a greater determining influence in growing these crops than the factor of soil adaptation. Away from the city where truck and small fruits are grown the sandier and lighter soil types are used. Practically all of the produce grown is sold to the Portland market. A great deal is disposed of directly to the consumer through the public market. Vegetables with an acreage of 5,449, of which 3,630 acres were potatoes, reached a value of \$1,094,411, according to the 1920 census. Fruits and nuts were valued at \$670,840.

Potatoes are grown on practically every farm, and over a large part of the county they are the main cash crop. This crop occupied 3,630 acres in 1919, yielding 345,411 bushels.

Hay and forage crops in 1919 occupied 14,736 acres, yielding 38,731 tons. This production is not sufficient to meet the needs within the county, and considerable hay and feed is shipped in. Clover now occupies an important place in the agriculture of the county, where dairying and general farming is practiced.

Corn has shown a greater increase in acreage during the last decade than any other crop. This is due primarily to the development of the dairy industry, the introduction of silos, and the introduction of early maturing varieties.

Cereals are of minor importance in the county.

Table number 4 indicates the relative importance of the various sources of agricultural income as given by the 1920 United States census. Despite its small area only 10 counties in the state yielded a greater income from agricultural products in 1919 than did Multnomah county.

**TABLE NO 4.**

**INCOME FROM SALES OF FARM PRODUCTS, MULTNOMAH COUNTY.**

Compiled by the O. A. C. Service from U. S. Census Records.

Product	Income	% of Total Income
Dairy Products .....	\$1,639,467	38.0
Vegetables (potatoes incl.).....	875,000	20.3
Livestock and Meats.....	540,000	12.5
Fruits and Nuts.....	510,000	11.8
Cereals .....	282,000	6.5
Poultry Products .....	211,351	4.9
Hay and Forage.....	55,000	1.3
Wool and Mohair.....	3,000	.07
Other Crops .....	200,000	4.6
Totals .....	\$4,315,818	99.97

## Climate of Multnomah County.

Warm and dry summers and wet and mild winters characterize the climate of this county. Snow falls practically every winter but does not form a cover for the soil for periods of more than a few weeks, except in the mountains in the eastern part of the county. In the greater part of the county the soil is rarely frozen.

The average rainfall around Portland is around 44 inches; of which 19 inches fall in the winter, 10 inches in the spring, 3 inches in the summer and 12 inches in the fall.

Temperatures are moderate. The yearly mean temperature is 52.9 degrees Fahrenheit. The average maximum temperature is 61 degrees and the average minimum is 44.9 degrees. The lowest temperature on record is minus 2 degrees; the highest is 102 degrees.

Long growing seasons prevail here. The average from 1875 to 1922 is 246 days, according to records of the United States weather bureau at Portland. In that period the average last killing frost in the spring came May 2 and the first in the fall came November 20. The shortest growing season on record is 184 days (in 1899) and the longest is 305 days (in 1914).

Tables 5 and 6 give detailed information on average rainfall and temperature records.

**TABLE NO. 5.**  
**PRECIPITATION IN MULTNOMAH COUNTY.**  
Monthly and Annual Averages  
(U. S. D. A. Weather Bureau).

STATION Elevation	Irvington 75 feet	Portland 57 feet
Period	1884-1899	1871-1922
Months	16 years	52 years
January .....	5.81	6.55
February .....	3.91	5.48
March .....	2.47	4.82
April .....	2.50	3.05
May .....	1.85	2.30
June .....	1.54	1.63
July .....	.29	.59
August .....	.40	.63
September .....	1.46	1.85
October .....	2.69	3.28
November .....	5.07	6.45
December .....	6.06	6.91
Annual .....	34.05	43.54

**Years of Greatest Precipitation.**

Inches .....	51.86	67.24
Date .....	1887	1882

**Years of Lowest Precipitation.**

Inches .....	24.12	30.76
Date .....	1890	1895

**TABLE NO. 6.**  
**TEMPERATURE RANGES, MULTNOMAH COUNTY.**  
 (U. S. D. A. Weather Bureau)  
 Station: Portland, Elevation, 57 Feet.  
 Period Covered by Records: 1872-1922, 51 Years.

Months	Mean Temp.	*Mean Max. (Degrees F)	*Mean Min. (Degrees F)	Highest Temp. (Degrees F)	Lowest Temp. (Degrees F)
January .....	39.2	44.0	33.7	62	2
February .....	41.9	48.0	35.9	68	7
March .....	47.1	54.7	39.6	79	20
April .....	51.6	61.0	42.8	90	28
May .....	57.2	66.6	47.8	99	32
June .....	62.0	71.4	52.2	99	39
July .....	67.0	77.8	56.0	102	43
August .....	66.6	77.5	55.6	98	43
September .....	61.4	71.1	51.5	93	35
October .....	54.3	62.1	46.5	83	31
November .....	46.2	52.1	40.4	73	11
December .....	41.3	46.2	36.6	65	3
Annual .....	52.9	61.0	44.9	102	2

\*Record for 42 years.

**RELATION BETWEEN PRODUCTION AND CONSUMPTION OF PRINCIPAL AGRICULTURAL PRODUCTS, OREGON.**

Product	Quantity produced	Percent of state's requirement	Quantity required for state consumption	Exportable surplus	Number of persons required to consume exportable surplus
*Wheat	20,600,000 bu.	440	4,380,000	14,870,000	2,657,000
Milk	798,467,000 lbs.	111	720,360,000	78,107,000	85,000
Beef	88,000,000 lbs.	166	52,852,000	35,148,000	520,700
Pork	230,000 head	52	438,480	-208,480	head
Eggs	14,625,000 doz.	125	11,745,000	2,880,000	192,000
Wool	16,000,000 lbs.	400	4,000,000	12,000,000	2,400,000
**Potatoes	4,868,000 bu.	167	2,740,000	1,741,000	497,000
Apples	6,920,000 bu.	660	1,050,000	5,870,000	4,400,000
Pears	760,000 bu.	740	100,000	660,000	5,000,000
Small fruits	18,978,000 qts.	800	2,350,000	16,628,000 qts.	5,500,000
Prunes	58,500,000 lbs.	5000	1,175,000	57,325,000	38,200,000

\*1,350,000 bushels of wheat and 387,000 bushels potatoes deducted for seed.

\*\*Average produced 1920-1922.

**RELATION BETWEEN PRODUCTION AND CONSUMPTION OF PRINCIPAL AGRICULTURAL PRODUCTS, PACIFIC COAST.**

Product	Quantity produced	Percent of Pacific Coast requirement	Quantity required for Pacific States' consumption	Exportable surplus	Number persons required to consume exportable surplus
*Wheat	77,849,000 bu.	232	31,175,200	41,395,900	7,392,000
Milk	4,384,225,000 lbs.	87	5,060,000,000 lbs.	Deficit	
Beef	331,077,110 lbs.	87	371,250,000	-40,173,000	Deficit
Pork	1,441,000 head	41	3,080,000	-1,639,000	Deficit
Eggs	100,000,000 doz.	120	83,500,000	17,500,000	1,200,000
Wool	36,300,000 lbs.	130	27,800,000	8,500,000	1,700,000
**Potatoes	23,588,000 bu.	115	19,250,000	2,798,000	799,000
Apples	36,350,000 bu.	485	7,425,000	28,925,000	21,700,000
Pears	6,445,000 bu.	890	725,000	5,720,000	4,400,000
Small fruits	51,300,000 qts.	310	16,700,000	34,600,000	11,500,000
Prunes	250,000,000 lbs.	3100	8,350,000	241,650,000	160,000,000

\*5,277,500 bu. of wheat and 1,539,400 bu. of potatoes deducted for seed.

\*\*Average production 1920-1922.