1946
AGRICULTURAL
PLANNING CONFERENCE

for Union County

Containing Committee Reports
Submitted and Adopted
February 12, 1946
FRED L. Paddock
Agency for Seaman Tillers
Phone 364WX
La Grande, Oregon
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Feed Association
Feed — Seed — Fuel — General Merchandise
Union, Oregon

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Packers of Mt. Emily Brand
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La Grande, Oregon
Phone 46
Box 874
# 1946 Agricultural Planning Conference for Union County

Containing Committee Reports Submitted and Adopted February 12, 1946

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FOREWORD

The Union county agricultural program conference of 1946 was a continuation of the planned agricultural development that has characterized the farming activities for many years. Earlier planning conferences that contributed to this development were held in 1924 and 1936.

The 1946 conference had its origin with a request made a year earlier when members of the Union County Agricultural Planning committee asked the O. S. C. Extension service to cooperate in such a re-appraisal of agricultural conditions and outlook as soon as possible after the close of the war.

Members of the Agricultural and Home Economics Extension staff of Union county who assisted with the conference are R. W. Schaad, county agricultural agent; Burns T. Bailey, assistant county agricultural agent; and Thalia Harvey, home demonstration agent. Cooperation of all agencies serving agriculture in the county was also sought.

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

The conference adopted the reports and set up a committee to see that they were assembled and published for general distribution. The reports are accordingly presented in full in this pamphlet with the idea that they may serve as a guide, representing the best judgment of active farmers and farm leaders counseling with Extension specialists in the various fields as to the trend in agricultural development of the farming industry and rural home life in Union county in the immediate postwar years. The members of the committee on publishing whose work made the printing of this report possible are:

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R. W. Schaad, County Agent, General Secretary
Clarence Carter
J. Dale Standley
Glenn Sands
<table>
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<th>LAND USE</th>
<th>LIVESTOCK</th>
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J. Dale Standley, Route 1, La Grande.
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Orman Weaver, High School, Union.
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LAND USE COMMITTEE

General Statement

The Land Use committee has considered the land use problem in Union County from the standpoint of maintaining soil fertility, controlling soil erosion, adjusting production so as to secure greater financial returns, and maintaining the economic stability of agriculture in the county.

The real fertility of a soil is its production power. By a permanent system of soil fertility is meant a program that will develop, utilize, and conserve the soil’s producing power. The soil is the greatest natural resource. It has supported and must support all life. It is a source of profit, a basis of value, which cannot be carried off or burned up. Land represents 75% of the agricultural value of Union County; including the necessary farm buildings the total is nearer 80%. Our timber may be cut and our mines dug out, yet soil conservation is necessary to feed our increasing population. It is cheaper to maintain the fertility of productive land than to restore the productiveness of exhausted soil.

Status of Oregon and Union County Agriculture

A vast change has occurred in Oregon’s agricultural industry since 1939, physically and economically. Overall production in 1944 was about 41% greater than the 1935-1939 average. An even greater increase occurred in Union County. The increase occurred in despite a decrease in the number of farmers, a shortage of farm labor, and other adverse factors. Good weather accounted for only a part of the increase. It was due mostly to the decrease of fallow and idle cropland during this period.

The increase in production of some crop and animal products in Union County exceeded the average increase materially. Others fell below. These trends are depicted in Chart I and Chart II. One entitled “Union County Cropland Trends” indicates the changes in cropland acreage and use by commodity groups for the census years 1919, 1929, and 1939, with preliminary estimates for 1944. The other entitled, “Union County, Principal Animal Industries,” depicts the trend in the numbers of animals and poultry in terms of animal units based on estimated total digestable nutrient requirements.

A third chart entitled, “Union County Farm Marketings,” shows important changes in both the total receipts and the sources. Probably the most significant change that has occurred in the status of agriculture in the county is the tremendous increase in farm income. Gross farm income in 1945 was about 227% of the 1939 amount.

Agricultural Production Outlook

The total land used for crops in the United States was approximately 345 million acres in 1935-1939 and 379 million in 1944, an increase of 10% in acres. Gross agricultural production in 1944 was around 36% greater than 1935-1939, however. Most of the increase is attributed to better farming, but partly to better than normal weather. Further improvement in farming methods are expected to occur and fewer horses will be kept. Thus, despite any probable increase in the demand, it is not likely that more than about 325 to 330 million acres will be required for crops. This suggests the need to take around 45 to 50 million acres out of crops for soil conservation and the adjustment of crop production toward probable demands.
UNION COUNTY CROPLAND TRENDS

YEAR 1919
163,000'

YEAR 1929
156,000'

YEAR 1939
148,000'

YEAR 1944p
153,000'

YEAR 1949

SMALL GRAIN & CORN

HAY CROPS

FORAGE SEED CROPS

TREE FRUITS & NUTS

POTATOES & TRUCK

OTHER SPEC. CROPS

FALLOW, IDLE, ETC.

*APPROX. ACREAGE INCLUDING CROPLAND HARVESTED, IDLE, FALLOW, FAILURE

O.S.C. EXTENSION SERVICE NOV.1945 MDT/GR
Union County, Principal Animal Industries

<table>
<thead>
<tr>
<th>Year</th>
<th>Horses &amp; Mules</th>
<th>Beef Cattle</th>
<th>Dairy Cattle</th>
<th>Sheep</th>
<th>Hogs</th>
<th>Chickens</th>
<th>Turkeys</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>32.9</td>
<td>19.7</td>
<td>24.8</td>
<td>19.6</td>
<td>10.4</td>
<td>9.7</td>
<td>2.4</td>
</tr>
<tr>
<td>1930</td>
<td>30.500*</td>
<td>17.0</td>
<td>28.3</td>
<td>23.5</td>
<td>8.5</td>
<td>14.8</td>
<td>2.9</td>
</tr>
<tr>
<td>1940</td>
<td>29.700*</td>
<td>24.1</td>
<td>31.9</td>
<td>11.4</td>
<td>7.9</td>
<td>7.9</td>
<td>2.8</td>
</tr>
<tr>
<td>1945p</td>
<td>30.200*</td>
<td>36.7</td>
<td>32.3</td>
<td>7.9</td>
<td>6.1</td>
<td>6.1</td>
<td>0.2</td>
</tr>
<tr>
<td>1950</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicated animal units based on estimated T.D.N. requirements

O.S.O. extension service Nov. 1945 MDT/CR
Farm Prices and Gross Income

The general level of farm prices in 1945 was nearly twice the 1935-1939 average and gross farm income reached the wartime peak. Some recession is expected in 1946. United States gross farm income may be around 10 percent smaller, as the total volume of farm marketings during the calendar year 1946 is expected to fall about 4 percent under 1945 and prices might average 5 to 10 percent lower.

Much of the farm production of 1946 will be marketed after the end of 1946, of course. Estimates of the trends indicate that the general level of farm prices will decline considerably more by 1950, even with full employment. Chart IV indicates trends in the general level of Oregon farm product prices from 1910 to date.

Land Ownership and Trends

Tables I, II, and III show the latest available figures for Union County on land ownership, farm numbers, acreages, and major land use trends. In the committee's opinion, economic farm unit should meet the following requirements:

a. Provide for a balanced labor program which will permit full time employment in productive farm work.

b. Provide sufficient income for a reasonable standard of living.

c. Provide a balance of crops which will permit full use of machinery.

d. Provide enough crop land to permit rotation.

A farming operation must be of sufficient size and productivity to enable an operator of average ability, operating under normal circumstances as to yields and prices, to derive sufficient subsistence and income from it to meet necessary living and operating expenses and debt obligations.

The 1935 agricultural census shows the average number acres per farm in Union County to be 346.2. This figure has been fairly constant since the
census of 1920. Since 1900 the census figures indicate that the highest percentage of farms ranged in the group of 100 to 260 acres in size. Since 1935, the trend in size has been slightly upward.

The examples given in this section are intended to point out the minimum size of farming units required over a long time period, assuming that both land and the operator are average. There may be rare exceptions where operators have succeeded on units smaller than those indicated or have for a short period shown exceptional success. The figures that have been set up are reasonable and represent an approximate minimum necessary to provide a gross income sufficient to pay all expenses such as depreciation, labor, taxes, and production costs, plus debt repayment and cost of servicing the mortgage, and enough net income to maintain an average family on a reasonable American standard of living.

a. **Dairying:** (Where dairying is to provide the primary source of cash income)—Ten cows minimum. The operator should have not less than 40 acres of irrigated or 75 acres of good non-irrigated crop land and at least an additional 15 acres of either good crop or non-crop pasture land.

b. **Diversified Farming Unit:** This type of farm requires a minimum of 175 acres of good average soil, all under cultivation. The livestock, dairy and poultry enterprises along with the production of grain, hay, pasture and small seed crops fit into the diversified farming unit.

c. **Grain and Small Seed Farms:** (On a farm where one or two cows are to be kept but where the income is to be derived primarily from small seeds and grain)—Recommended size 240 acres crop land minimum.

d. **Stock Ranch:** The minimum requirements for a 100-head operation should be 1160 acres of which 120 acres would be used for the production of hay and 40 acres other crops. Areas where outrange is available are more desirable, but the irrigated portion of the county offers possibilities for smaller units.

e. **Orchard and Small Fruit Farm:** The selection of a suitable soil with good air drainage is very important in establishing an orchard and small fruit unit. A minimum of 30 acres in units of 10 acres or less to different varieties is advisable. This practice is recommended in order to spread the labor demand over a longer season.

### TABLE I

**LAND OWNERSHIP**

Union County, Oregon


<table>
<thead>
<tr>
<th>PER CENT OF TOTAL COUNTY AREA*</th>
<th>ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of data:</td>
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<td><strong>LAND OWNERSHIP</strong></td>
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<td>Union County, Oregon</td>
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<td>Source of data:</td>
<td></td>
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<td>Forest Statistics and 1935</td>
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<tr>
<td>Tabulated by the Oregon State</td>
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<tr>
<td>Agricultural College, Extension</td>
<td></td>
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<tr>
<td>Service.</td>
<td></td>
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<td><strong>TOTAL COUNTY AREA</strong></td>
<td>1,284,480</td>
</tr>
<tr>
<td>Privately owned land, total</td>
<td>753,616</td>
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<tr>
<td>Land in farms</td>
<td>463,536</td>
</tr>
<tr>
<td>Other private owned land</td>
<td>290,080</td>
</tr>
<tr>
<td>Public lands, total</td>
<td>530,864</td>
</tr>
<tr>
<td>State lands</td>
<td>6,325</td>
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<tr>
<td>County lands</td>
<td>8,840</td>
</tr>
<tr>
<td>National forest</td>
<td>509,555</td>
</tr>
<tr>
<td>Other federal lands</td>
<td>6,144</td>
</tr>
</tbody>
</table>

*The total area for the county as determined by this survey does not always agree with hitherto accepted total area data. The forest service data as of 1/1/37 gave the total country area as 1,309,355, privately owned land, 759,565, state lands 7,480, county lands 6,630, national forest 525,250, other federal lands 8,695, municipal 195, and Indian 1,540.
### TABLE II

Farm numbers and acreages: Trends in Union County, Oregon.

**Source—U. S. Census of Agriculture, retabulated by Oregon State College, Extension Service.**

<table>
<thead>
<tr>
<th>Census of</th>
<th>All land in Farms</th>
<th>No. of Farms</th>
<th>Percent Farms</th>
<th>Average Size of Farms</th>
<th>Improved land in Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1890</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1910</td>
<td>395,769</td>
<td>29.6</td>
<td>1,309</td>
<td>302.3</td>
<td>165,499</td>
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<td>1920</td>
<td>441,735</td>
<td>34.0</td>
<td>1,279</td>
<td>345.4</td>
<td>178,021</td>
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<tr>
<td>1925</td>
<td>420,029</td>
<td>32.3</td>
<td>1,218</td>
<td>344.9</td>
<td>155,736</td>
</tr>
<tr>
<td>1930</td>
<td>457,981</td>
<td>35.2</td>
<td>1,276</td>
<td>358.9</td>
<td>175,193</td>
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<tr>
<td>1935</td>
<td>463,536</td>
<td>35.6</td>
<td>1,339</td>
<td>346.2</td>
<td>167,456</td>
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<tr>
<td>1940</td>
<td>471,173</td>
<td>36.2</td>
<td>1,255</td>
<td>375.4</td>
<td>172,812</td>
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<tr>
<td>1945</td>
<td>496,169</td>
<td>38.2</td>
<td>1,208</td>
<td>410.7</td>
<td></td>
</tr>
</tbody>
</table>

*Note—Part of Union County annexed by Baker in 1902. Total of county for census year 1910 given as 1,335,680 acres, and given in the 1940 Census of Agriculture as 1,300,480 acres.*

### TABLE III

Land Use: Trends by major uses in Union County, Oregon

**Source: Tabulated from U. S. Census reports by Oregon State College Extension Service, Agricultural Economics Section.**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>1925</th>
<th>1930</th>
<th>1935</th>
<th>1940</th>
<th>1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Land Area</td>
<td>1,300,480</td>
<td>1,300,480</td>
<td>1,300,480</td>
<td>1,300,480</td>
<td>1,300,480</td>
</tr>
<tr>
<td>2. Land not in Farms</td>
<td>880,451</td>
<td>842,499</td>
<td>836,944</td>
<td>829,307</td>
<td>804,311</td>
</tr>
<tr>
<td>3. Total Land in Farms</td>
<td>420,029</td>
<td>457,981</td>
<td>463,536</td>
<td>471,173</td>
<td>496,169</td>
</tr>
<tr>
<td>3a. Crop Land</td>
<td>155,736</td>
<td>155,994</td>
<td>152,873</td>
<td>147,756</td>
<td>149,218</td>
</tr>
<tr>
<td>3b. Pasture Land*</td>
<td>244,039</td>
<td>281,613</td>
<td>292,251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c. Woodland not pasture</td>
<td>6,936</td>
<td>10,822</td>
<td>7,348</td>
<td>323,417</td>
<td></td>
</tr>
<tr>
<td>3d. Other Land in Farms</td>
<td>13,318</td>
<td>9,552</td>
<td>10,064</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates plowable pasture land.
Land Use Problems by Communities

1. Telocaset Area:
This area has a considerable acreage of low producing wheat land, some of which has reverted to weeds and sage brush. The committee recognizes major problems of this area to be improving the low producing wheat lands which have reverted to weeds and sage brush through range seeding practices in order to establish grasses of higher production and increase the carrying capacity per acre. Established sod reduces fire hazards and soil erosion in addition to increasing the feed supply. It is recommended that seeding of this type of land be followed immediately after set or accidental fires.

Grasses most suitable to this type of range are fairway crested wheat grass, bunch type wheat grasses, mountain brome, tall meadow oat grass and big blue grass. On some of the more fertile lands alta fescue and sweet clover are good.

The recommended seeding rate varies from 6 to 12 lb per acre, depending on the grasses used and the type of soil.

Some of this marginal land is suitable for the production of sweet clover or alfalfa seed.

Where legume seeds are being produced, it will be necessary to protect the area from grasshopper infestation.

Consolidation of small acreages would create greater efficiency.

2. Palmer Junction Area:
Small size of farming units and distance from markets have been serious problems in the Palmer Junction Area. The Committee recommends the following changes:

a. Small farming units be combined into larger livestock units.

b. The major problem in this area is the improvement of both farm pastures and range land pastures. In general, this area is being overgrazed. Efficiency of handling range and farm pastures may be increased through better rotation practices.

It is suggested that the Extension service in cooperation with ranchers of this area establish a pasture forage test plot to determine the adaptability of certain grasses in this area.

3. Elgin Area:
This area includes farm land north and east of Elgin and includes Indian Creek and Clark's Creek country southeast of Elgin. In general, the size of farming units is satisfactory. Some adjustments could well be made in consolidating shoe-string farms along creeks into larger units. The average wheat production in the area is slightly below the county average of 27.9 bushels per acre. This indicates a greater need for soil conserving crops in the crop rotation program.

In recent years, the trend toward the use of annual legume crops has increased. This has reduced the acreage in summer follow from approximately one-third in 1935 to about 25 percent, at present. The prevention of soil erosion by water is one of the major factors of consideration in maintaining productivity of the soils. Under good conservation practices practically all of the grain straws and all of the legume straw should be incorporated in the soil to increase the moisture-holding capacity and fertility of the soils.

Before the crop residue can be of any value either as plant food or organic material, it must rot. This process requires moisture, heat, and air; furthermore, it is accomplished by action of bacteria and other micro-organisms which temporarily tie up any readily available supply of plant food, chiefly nitrogen. This demand unfortunately coincides with the demand of a growing crop.
With legume straw having 20 pounds of nitrogen or more to the ton, there is an ample supply of plant food to supply the needs of both the bacteria and any growing crop. The utilization of legume straw then becomes a mechanical problem of either mixing the material with the soil or letting it remain on the surface until such time as it becomes thoroughly moist so the decomposition can proceed. Legume straw will rot readily on top of the ground if it is kept moist.

In the utilization of grain straw, the decomposition organisms require an additional supply of nitrogen. They will take this supply of nitrogen from the soil and use it temporarily, at the expense of any growing crop, until the decomposition process has reached the point where plant foods are again released. For the satisfactory utilization of this material, it may be necessary to add an extra supply of nitrogen to avoid the decrease in yield from the crop or to avoid trouble in farming operations through mechanical difficulties caused by delay in rotting of the straw and trash on the surface.

Straw of all types has been satisfactorily handled from the mechanical standpoint by a number of methods. It may require more time and consequently more expense. Plows of the disk type, either the conventional disk plow or the newer one-way disk, do the best job. They have an advantage in that they mix the material with the soil, a condition that leads to more rapid decay. Plows of the mold-board type may cause some difficulty from clogging. Plows with high clearance beams work better than the standard type. Large diameter coulters, particularly of the cut-away type help. With a clean job of mold-board plowing, the straw is left in one layer with only the top and bottom in contact with the soil, and where there is little air and heat this delays decomposition. For best results, the straw must be mixed with the top layer of soil. Disking before plowing is often justified.

Straw and stubble from grain crops will decompose almost as rapidly as legume straw, if extra nitrogen is added. The nitrogen may be supplied as commercial nitrogen, barnyard manure, or legume straw of high nitrogen content.

Many tons of rich topsoil are lost each year from the steep and sloping lands, especially in the area north and east of the city of Elgin. Productive farming will not continue for many more years under the practices in use today. The very foundation of farming and conserving the soil is proper land use, that is using our farm lands for the things they are best fitted to produce, and in such a way that they will keep on producing. This means using land for cultivated crops that is best suited to grow such crops, and utilizing such protective or other conserving practices as may be required.

The steeper lands would be more efficiently used for hay or pasture. This most certainly would greatly reduce erosion, either of the sheet or gully type. The control of erosion is basically of major importance in considering farm practices. It is especially important because the same measures that prevent erosion and consequent loss of topsoil likewise naturally prevent loss of fertilizer, manure, humus, and mineral elements. In other words, fields should be farmed so that plant nutrients, soil bacteria, and fertilizers will not wash away, but be kept on the topsoil to produce crops. For the continuation of efficient farming under controlled erosion such practices as contour cultivation, strip-cropping, and terracing, with gullies and waterways seeded to a sod of permanent grasses will of necessity become established.

Generally speaking, the orchards of this area are found on the steeper slopes. In most cases, clean cultivation during summer months without a winter cover crop has been the general practice. Successful orcharding is dependent on a plan of soil management that provides for the addition of organic matter regularly and in amounts to build fertility and reduce erosion to a minimum. A rich virgin soil loses its organic matter rapidly when it is continually without replacement, the soil organic matter becomes so depleted that trees lose their vigor, and production falls off. Orchards under such conditions become permanently devitalized and unprofitable. Clean cultivation
without the addition of cover crops or their equivalent is one sure method of accomplishing orchard-soil depletion in either irrigated or unirrigated orchards. If orchard soils are to be kept productive, provision must be made to supply the necessary organic matter.

Loss of organic matter through cultivation, leaching away of soluble plant foods, loss through crop removal, tree growth, and finally soil erosion, are all factors at work continually to break down the fertility and productiveness of cultivated soils. The very process of clean cultivation results in breaking down measurable amounts of organic material each year. This alone will deplete soils in time, but if erosion takes its toll also, then the productive life of a soil may be comparatively short. To reduce and lessen these losses, grow cover crops in the orchards as a regular practice.

Most orchard soils on hill land are eroding rapidly. This may be visible in the form of ever-deepening gullies; or it may be the invisible sheet erosion, which is no less harmful.

Livestock production, especially beef cattle, has increased during the past five years. During this same period, there has been a substantial reduction in hay acreage to make way for the production of the growing of dry edible peas and Austrian winter peas and garden type peas for seed crops. The results is a present shortage of acreage in forage which brings about an unbalanced ratio of animal and feed units. Since this is an area well adapted to livestock because of its relation to summer range, it is recommended that the present acreage of 2400 be increased 1500 acres.

4. Pumpkin Ridge:

Grain, pea seed, livestock and orchards are the principle enterprises. The size of farms in this area is generally satisfactory. The soil on Pumpkin Ridge is much the same as in the Elgin area. The estimated soil conserving crops (perennial legumes) at the present time is 3 percent, annual legumes 25 percent. The normal summer fallow acreage is about 30 percent of the total crop acres.

Recommendations for handling the soils of this area are similar to those of the Elgin area. Since much of the tilled land on Pumpkin Ridge is steep, it is necessary that at least 27 percent of the total crop acreage be planted to soil conserving crops. This land is very well adapted to the production of high quality alfalfa and clover seed, as well as certain kinds of grass seed. The acreage of these crops should be increased materially. Ground bees are found in abundance among the rocky cliffs and pasture land adjacent to the crop land. Native shrubs and plants are not serious competition to alfalfa or clover as a source of nectar or pollen for the ground bees in this locality.

A high quality of garden type and Austrian winter pea seed are produced on the ridge soils. These crops should also be encouraged, although they will not fit into the same rotation because of the volunteering habits of the Austrian peas.

There are approximately 600 acres of well air drained, deep soils on the ridge that are suitable for cherry or apricot orchard plantings. Some increase of these plantings would be advisable as the markets develop.

5. Sand Ridge:

The major enterprises in the area are wheat, peas, and alfalfa, while minor enterprises include livestock, feed grains, and small seed crops. The size of farms in general is satisfactory, although the tendency is for larger farms. Wheat yields are considerably above the county average. Yields in recent years have been increased because of the production of legume seeds in the crop rotation where the residue has been incorporated into the soil under better farming methods and improved varieties. Wind erosion is one of the major problems of this area. Adaptable practices for the area follow:
a. 25 percent of all crop land in soil conserving crops such as alfalfa, sweet clover, perennial grasses for forage, and perennial grasses for seed crops.

b. Decrease summer fallow acreage by producing pea seed or an edible pea crop in the rotation.

c. Check wind erosion by incorporating grain or legume straw into the top soil using contour farming and seeding of fall crops on the contour to the prevailing winds, strip crop farming with perennial legumes or grasses on alternating strips, where wind erosion is serious.

d. Planting of permanent strips of trees across the more serious blow spots. Black Willow, Black Locust, Russian Olive, Caragana, Chinese Elm and the evergreens such as Scotch Pine, Cluster Pine, Chinese Arborvitae, Arizona Cypress, and Eastern Red Cedar are all considered adapted to Eastern Oregon conditions. Farmstead windbreaks and shelter plantings are highly recommended.

6. Imbler Orchard District:
   This area is in orchards at the present time, though each year a considerable acreage has been removed, mainly because of unfavorable markets, until markets improve four years ago. As the orchards mature, the quality of apples depreciates. There is every indication that orchard soils are decreasing in organic matter content, therefore, losing the much needed moisture holding capacity. Some of the older orchards are in need of tree thinning to increase the distance between rows or trees.

   Use of green manure crops with the addition of supplemental applications of commercial fertilizer legumes straw and barnyard manure is recommended.

7. Summerville Bottoms. (Extending along west side of Sand Ridge into Island City and La Grande.)
   Diversified farming is generally practiced in this area. Wheat yields are above the county average. Normally about 15 percent of the land is in summer-fallow each year. The committee recommends as follows:

   a. At least 40 percent of crop acreage to be in soil conserving crops.

   b. Decrease wheat acreage.

   c. Increase clover and alfalfa seed and hay acreage.

   d. Rotate alfalfa fields every 4 to 6 years.

   e. Moderate increase in perennial grass seed acreage.

   f. Increase acreage of permanent legume and grass pastures and improve present acreage.

   g. Cultivate and seed all tilled land on the contour to prevent water erosion.

   h. Use of commercial nitrogen fertilizer is recommended as an early spring application on pasture crops to increase production and lengthen the pasture season.

   i. Use of sulfur for correction of alkali soils is recommended at rates from 100 to 800 pounds per acre, depending upon the degree of alkalinity. Sulfur or gypsum is also recommended for legume soils at rates of 50 to 100 pounds per acre for sulfur each four to six years, and 100 pounds per year or 200 pounds each two years for gypsum.

   j. Same recommendations for cultivated orchards in this area as for orchards in the Imbler district.

   k. To prolong the life of farm wood lots for posts and fuel the selective harvesting of trees is considered advisable.

   l. Seeding to permanent grasses all run-off drain ditches. Ditches to be constructed on the shallow wide grade where feasible to permit farming through them.
8. Hot Lake Area: (Extending east from Hot Lake along South end of Sand Ridge and South to Union.)

This area is mainly devoted to diversified farming. Yields are below the county average and 20 percent of the crop land is normally fallow. Wind erosion is the major land use problem in this area, with noxious weed control, drainage and flood control, and efficient use of irrigation water as secondary. The committee recommendations follow:

a. The size of farm units is generally satisfactory.

b. Greater use of soil-conserving crops is encouraged. 30 percent of the total cropland to be in soil-conserving crops.

c. Use of trashy fallow or seeding down blow acres to perennial grasses or legumes. No grain or legume straw to be burned. Heavy stubble to be incorporated into the topsoil in the fall as a soil protective measure and at the same time to cause partial decomposition during the high moisture period.

d. Planting of tree shelter strips across the serious blow areas to prevent erosion. Refer to list of trees under the Sand Ridge section of this report.

e. For greater efficiency in the use of available irrigation water more concern in proper land leveling is encouraged.

f. Present drainage ditches and channels on many farms are largely filled with silt and debris causing a reduced flow of flood water which retards the spring farming operations and reduces maximum efficiency in the use of land.

g. Enforcement of noxious weed control is endorsed.

h. Pasture improvement through the use of better grasses and legumes and better management practices is important. The Extension service recommends meadow foxtail, alta fescue, Tualatin oat grass, creeping red fescue, smooth brome grass, Lemons alkali grass, alfalfa, sweet clover, strawberry clover, dutch white clover, alsike clover, ladino clover on irrigated or sub-irrigated lands.

Fairway crested wheat grass, Tualatin oat grass, alta fescue, Mountain brome grass, orchard grass, big blue grass, and wild rye grass on the range type lands are recommended.

Alta fescue, Tualatin oat grass, orchard grass, smooth brome grass, sweet clover, and alfalfa are good on the drier cultivated lands.

Wheat grasses, wild rye grass, fairway crested wheat, chewings fescue, alta fescue, sweet clover and alfalfa are excellent for the blow type soils.


Dairy, beef, wheat and alfalfa are the major enterprises with orchards, small fruits and truck crops important on the foot slopes. Yields are above the county average for cereals. Approximately 30 percent of the cultivated land is now summer fallowed. Water erosion along the east side of this area along foot slopes of Mt. Harris and flooding along the Grande Ronde river, especially from Fay Bridge to Imbler, are important problems in this area. The spread of noxious weeds, namely Canadian thistle and morning glory have increased to the place where community action is required. Recommendations follow:

a. That 30 percent of the cultivated land be placed in soil-conserving crops.

b. Decrease wheat acreage.

c. Decrease summer fallow.

d. Increase annual legume seed production acreage.
e. Prevent soil erosion by adoption of approved practices such as trashy fallow, use of green manure crops, strip contour farming, seeding of wind blow areas to permanent sod of grasses and legumes. (See Hot Lake Recommendations.)

f. Seed areas along the river which are subject to flooding to permanent grasses that will grow under these conditions, such as Reeds canary, alta fescue and other grasses.

g. Establish permanent sod of perennial grasses in gullies and on range to prevent serious water erosion.

10. North Powder Irrigated Section:

In this area, dairying and general livestock and alfalfa hay are the important enterprises. Wheat yields are above average and about 10 percent of the land is under summer fallow. Because of high percentage of alfalfa grown in this area, no increase in acreage of soil conserving crops seems necessary. The increase of noxious weeds, such as Canadian thistle, morning glory and white top, represents serious threat to the best farming interests of the community. Increased need for summer water supply for irrigation is considered a major problem. Recommendations follow:

a. Maintain present acreage of soil conserving crops.

b. Rotate alfalfa every 4 to 6 years.

c. Plant alfalfa-perennial grass combinations for forage.

d. Community action toward more efficient weed control.

e. Seek and establish reservoir sites for increased irrigation water supply on Wolf Creek and its tributaries, as well as other reservoir sites on water sheds in the area.

f. No increase in the number of farms.

g. Increase cattle feeding operations.

11. North Powder Dry Land area:

Wheat, range livestock and feed grains are the major enterprises in this area. Wheat yields are below the county average and 45 percent of the land is estimated to be under summer fallow. Wind erosion and maintenance of soil fertility are recognized problems of this area. Recommendations follow:

a. 20 percent of the total cultivated land to be in soil conserving crops.

b. No increase in number of farms.

c. Community action on weed control.

d. Decrease summer fallow acreage by including legumes in rotation for pasture and green manure crop. Yellow sweet clover is recommended.

e. Utilize more stubble as trashy fallow by incorporating it into the top soil in the fall.

RANGE LAND

Range land in Union County makes up a large part of the county area, since 61.8 percent of all county land is not in farms, and there is an additional 293,251 acres of pasture, including cropland pasture. The committee recognizes that there is a close relationship between the general use of crop lands in the county and the manner and method of use of range lands.

The general trend in each of the grazing areas of the county is that livestockmen are changing from sheep to cattle on the federal reserve where they have priorities. This changeover has been especially rapid since 1940.

Grazing lands in the National Forest, on the average, are in very good condition with forage cover, although in certain areas there is overgrazing. To correct the overgrazed conditions in these areas it will be necessary to
provide more drift fence and closer supervision by range riders to keep the cattle back in the higher and rougher range where better feed is found during the late summer months.

Artificial reseeding of range with improved and higher producing grasses is of major importance on approximately 15,000 acres of open prairie type forest lands. Species of tar weed or skunk weed, garlic and also low producing grasses and cheat grass is the predominating cover on much of this open range at present.

The establishment of range grass test plots will be of greater importance toward range improvement work.

Logged off areas when burned should be seeded to the better producing grasses instead of left to grow low feed producing grasses and in most cases nothing except fire weed and thistles. This recommendation holds true for the newly constructed roads and other construction where the soil is exposed for the introduction of new plant life. New grass sod will also prevent serious erosion in such areas.

The Forest Service in general is doing an excellent job in the construction of watering facilities for livestock to gain better use of the range.

In recent years, much of the Umatilla forest was allotted to sheep owners from outside of the county, most of whom contributed a very small amount of taxes to Union County. This condition has been corrected to some degree.

It is requested that officials of the Whitman and Umatilla forests continue their policy of allotting areas, as they become available, to owners within the county. This arrangement will result in better management of such forest lands and stimulate the industry within the county.

The committee believes that the practice of deferred grazing or no grazing at all on alternate years should be adopted on the lower producing or overgrazed forest lands in order to increase the growth of forage and reseeding. This condition certainly holds true in much of the privately owned grazing lands especially in that area north of Elgin to the Washington State line and east of Elgin to the Wallowa County line.

Reseeding on private range where conditions are favorable to secure a proper seed bed is considered one of the more important essentials in increasing the feed supply for the range livestock industry.

The committee recommends that forest service officials and owners of private land adopt some system of control of rodents, especially gophers which are destroying large amounts of forage and forage plants and are also the direct cause of considerable soil erosion loss.

There is quite an area of sagebrush range land in the south end of the county that is now producing little forage.

Experiments in sage brush burning show that increased usability and greater grazing capacity of the range without damage to adjacent property are dependable results of planned burning. The results of some of these experiments showed an increase of perennial grasses and weeds 60 percent in abundance, partially replacing the sagebrush, others showed up to 300 percent increase in grazing capacity.

Establishing a range improvement program with a practice of controlled burning to increase carrying capacity is encouraged.

GENERAL LAND USE

The committee suggests that any proposal for irrigation in the Grande Ronde Valley should be carefully studied before a decision is made by the agricultural interests.

The Soil Conservation district recently formed in the county should be carefully observed to determine if similar organizations would be effective in other parts of the county.
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COUNTY PLANNING COMMITTEE
RECOMMENDATIONS
Livestock Committee

General Statement

Total cattle numbers, which reached an all-time high in the United States at the beginning of 1944, declined slightly by January 1, 1945, and continued to be further reduced during the year. Slaughter has been unusually large, beginning in 1942. With the large number of cattle and calves still on farms, slaughter is likely to continue to be large for at least the next two years.

The following chart shows the trends in cattle production on farms in the United States, January 1, 1867-1946:

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*Cows and heifers 2 years old and over kept for milk.
Data for 1945 and preliminary; for 1946, estimated.

World War II has changed the production pattern of livestock products much more than did World War I, as indicated in the following comparison:

Oregon Cattle Situation

Cattle and calves on Oregon farms were estimated at 1,182,000 head on January 1, 1944, and all time record for this state. This is 29 percent above the average number on January 1st during the years 1935 to 1939, inclusive. Most of the increase was in beef cattle.

Census figures by counties indicate that more than 70 percent of the milk cows are in Western Oregon, while nearly 90 percent of the beef cows are in Eastern Oregon.
Estimated number of cattle and cows on farms in Oregon, and in Union County January 1, 1920 to 1944:

<table>
<thead>
<tr>
<th>Date</th>
<th>OREGON All Cattle all ages</th>
<th>OREGON Milk Cows 2 yrs. &amp; over</th>
<th>OREGON Beef Cows 2 yrs. &amp; over</th>
<th>UNION COUNTY All Cattle all ages</th>
<th>UNION COUNTY Milk Cows over 2 yrs.</th>
<th>UNION COUNTY Beef Cows over 2 yrs.</th>
<th>UNION COUNTY Sheep All Inc. Lambs</th>
<th>UNION COUNTY Hogs All Inc. Hogs</th>
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Production Outlook

During the period of after war adjustments there will no doubt be substantial reduction of acreage requirements for certain crops. Much of the land not needed for other crops may be used for meadows and pastures. Under full employment demand conditions, supplemented by programs to improve the nutritional quality of diets, there would be a very substantial increase in the requirements for some foods, chiefly dairy, poultry and livestock products. The amounts that may be needed by 1950 under the most favorable demand conditions have been estimated as high as 100 percent increase over 1935-1939 in turkeys, 55 percent in chicken meat, 30 percent in eggs, 25 percent in milk production, 25 percent in beef and veal, 65 percent in pork, 16 percent in lambs and 9 percent in wool.

Compared with 1935-1939, production of these products in 1945 was 86 percent higher for turkeys, 53 percent higher for chicken meat, 51 percent higher for eggs, 18 percent higher for milk, 45 percent higher for beef and veal, 37 percent higher for pork and 17 percent more for lamb and mutton slaughtered but 10 percent lower for wool. While the postwar demand is estimated to be higher than prewar demand, it is still below the wartime production.

Production Recommendations

The cash farm income from livestock and products in Union County during the period 1926-1930 averaged $1,595,360.00 or 41.6 percent, and during the period 1936-1940 an average of $1,473,920.00 or 56 percent of the total agricultural income of the county. In 1942 it amounted to $2,743,440.00 or 46 percent of the total of $5,964,000 agricultural income.

Because of Union County's topography and wide range of soil types adapted to the production of livestock, and its relation to market, the livestock industry should continue to be one of the most important enterprises in the county.

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

There is considerable difference of opinion as to the number of beef cattle necessary to provide a satisfactory income. It is generally considered that it ranges from 200 to 400 head. The percentage of turnover in a beef herd amounts to 25 to 30 percent annually, where yearlings are sold. In other words, out of 100 head of beef cattle owned, from 25 to 30 animals per year would be sold in the form of steers and cull cows and at the same time leaving enough heifers for replacement. The average weight of yearlings would be 650 to 700 pounds.

H. A. Lindgren, Extension Animal Husbandman, makes the following statement regarding beef:

"As a guide to help determine return from beef cattle production, when the average calf crop is 80 percent and accrual death loss is 2 percent, and the operator is selling yearlings or short two-year-olds, he will be selling about 30 animals annually from each 100 head of animals in the herd. The remaining 70 accruals will consist of cows, calves, and replacements. This would mean about 35 breeding cows. If the animals sold weigh 700 pounds at selling time, the following table will indicate the gross return per 100 head in the herd.

<table>
<thead>
<tr>
<th>Selling Price Per Lb.</th>
<th>Total Weight</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 cents</td>
<td>21,000</td>
<td>$1680</td>
</tr>
<tr>
<td>10 cents</td>
<td>21,000</td>
<td>2100</td>
</tr>
<tr>
<td>11 cents</td>
<td>21,000</td>
<td>2310</td>
</tr>
<tr>
<td>12 cents</td>
<td>21,000</td>
<td>2520</td>
</tr>
</tbody>
</table>
If more or less cattle are maintained, the above figures should be raised or lowered proportionately.

The committee is of the opinion that the approximate minimum requirements for a 100-head operation on non-irrigated land will be 1,160 acres divided as follows: 120 acres for hay, 40 acres for grain and 1,000 acres for summer pasture. This type of an arrangement, if managed efficiently, will provide a sufficient income, approximately $1,500 net, for a reasonable standard of living.

The committee wishes to re-emphasize the fact that more livestock should be fed out and finished on the farm where they are raised to utilize more of the farm grown feeds and by-products.

Cattle feeding results based on seven years of trials at the Eastern Oregon Livestock Branch Experiment Station show that when cattle were fed first cutting chopped alfalfa hay and coarsely ground wheat the average daily gains were 2.24 pounds. The feed requirement per 100 pound gain in cattle was 476 pounds chopped alfalfa hay and 365 pounds of coarsely ground or rolled wheat.

Immature wheat hay has proved to be an excellent roughage for feeding and finishing cattle where alfalfa hay is not available. Other farm grown feeds and by-products can be transformed into finished livestock products and marketed at a profit.

The committee commends the Eastern Oregon Livestock Experiment Station for its excellent research in livestock feeding practices. This type of work should be strengthened to include additional research to determine the value of supplemental feeding of commercial cattle while on pasture in order to obtain a better finish at the time of marketing.

Producers considering the feeding out of cattle will do well to review the following schedule of average feed requirements:

**Fattening Calves**—To the cost of the feeder calf, add the cost of 1,000 pounds of ground grain and 1,600 pounds of hay. This is sufficient for 150 days' feed. During that time the calf should gain slightly more than 2 pounds per day.

**Yearling Steers**—To the cost of the yearling steer, add the cost of 800 pounds of ground grain and 1 ton of hay. This is sufficient to feed the animal for 100 days. The gain should be about 2 pounds per day.

**Fattening Lambs**—To the cost of the feeder lamb, add the cost of 100 pounds of whole grain and 200 pounds of alfalfa or clover hay. This is sufficient to feed the animal for 100 days. The gain should be approximately ½ of a pound per day.

To these items, freight and shrinkage must be added. The above schedule of cost will give the total for the animal and the feed, but will not include death loss, labor, interest, or other incidentals; as these items vary greatly, it is rather difficult to make a general statement covering them.

Many feeders value the manure and consider that sufficient to pay the labor costs. Manure produced annually, including litter, per 1,000 pounds live weight, is, steers, 9 tons; sheep, 9-8/10 tons; hogs, 18 tons.

Because of the present price situation growers should be encouraged to replace their lower grade cattle with fewer purebred animals as a foundation to better herds with increased efficiency of production.

The committee would like to call attention to the importance of the use of purebred sires of good type to improve the quality of Union County's livestock. Considerable progress has been made and this effort should be continued and emphasized for the small breeder as well as by the larger operator. The producer may not only benefit financially, but also receive the satisfaction that comes from owning and producing good stock.

Considering the potential feed units for the county, it appears that the maximum cattle population of all cattle for the county should not be more than 35,000 head.
Because of the heavy increase in cattle numbers, especially on the smaller farms, in the North Powder area and since sheep numbers have been reduced to a minimum on the National Forest allotments, these allotments should rightfully be transferred by the Federal Forest Service to the use of cattle. This would materially strengthen the cattle industry in the south end of the county.

Good pastures are fundamentally the basis of a good livestock industry. There is considerable room for improvement of the pastures in Union County, this includes a large share of the privately owned pasture lands and much of the range in Federally owned areas. The Land Use Committee pasture improvement recommendations are heartily approved and supported by this committee.

General Recommendations

To speed up the disease control work in Union County it is recommended that the County Veterinarian in charge of the Bangs Disease Control Program be provided a Federal assistant. This would tend to bring about a complete testing of all cattle in the county by the end of one year.

Livestock men recognize the need for more educational work for the producers as well as the consumer on the grading of finished livestock and also on the grades of the finished livestock products sold to the consumer.

In order to relieve the congested supply of livestock at the Portland Livestock yards at certain times of the year, producers are requesting an adjustment in freight rates into areas both north and south from Portland. It is the opinion that relief on this situation alone will save livestock men of the state many thousands of dollars annually.

The Fish and Wild Life Service predatory animal control program in Union County is endorsed by the livestock industry of the county and should be continued with the state and county cooperating. It is the opinion of many stockmen that the State Game Commission should provide a larger share of the financial part of the program in this county.

Not less than two trappers should be maintained at all seasons of the year.

Sheep Situation

The number of sheep in the United States reached an all time peak on January 1, 1942, and has declined each year until at the present time, with liquidation halted at least temporarily, the trend is heading upward.

In Union County the reduction in sheep numbers is still in progress. The total population as of January 1, 1946, is estimated to be 9,000 head which is the lowest figure since records have been kept.

Recommendations:

The farms of Union County are well adapted to the raising of sheep. Many farms are ideally organized and with good management could handle flocks of from 50 to 100 head. Sheep are well adapted to utilize by-products of the farm under a systematic program for the control of both perennial and annual weeds on the farm.

Union County has for many years been the major source of supply for purebred bucks to replenish range flocks of Eastern Oregon. This demand has decreased in the past several years but is nevertheless still considered an important factor in farm sheep production of the county.

The major losses of sheep, mutton and wool is caused by animal parasites and lamb diseases such as roundworms and ticks, and diseases commonly known as “white muscle” disease, lambing paralysis and pneumonia.

Some of these diseases are believed to be caused by nutritional deficiencies, hence prevention rather than cure should be the sheepman’s watchword.

Proper docking, castrating and treatment of naval infection will also reduce losses. Sanitary measures during lambing season are of special importance.
COUNTY PLANNING COMMITTEE RECOMMENDATIONS

Hog Situation

United States:

Although the value of hogs on farms estimated at $1,262,000 on January 1, 1945, was about 15 percent below the value of a year earlier, the number of hogs declined nearly 28 percent from the peak on January 1, 1944. The number of hogs on farms at the beginning of 1945 was, nevertheless, larger than on January 1, 1941, and 1942 and nearly as large as for 1940. A 19 percent increase in the value per head during 1944 prevented as large a decline in inventory values as in numbers.

Present indications point to a total pig crop in 1946 not greatly different from that in 1945.

Oregon:

Oregon's 1945 pig crop totaled 276,000 head, 20 percent less than in 1944 and 33 percent less than the 10 year (1934-43) average of 409,000 head. Pig crops in this state were sharply reduced during the spring of 1944, and hog production since that time has remained at a very low level. The number of hogs now on farms in Oregon is reported slightly less than a year ago and at the lowest level in 11 years.

It appears probable that the low point in the present cycle of hog production has been reached as farmers' reports on breeding intentions for the spring season of 1946 point to a 10 percent increase.

Union County:

Hog numbers reached a record high for the country during 1944. Preliminary figures show the total crop to reach 18,700 head. During the fall and winter months of 1944 heavy marketings followed the U. S. Department of Agriculture announcement that hog numbers were reaching a dangerously high figure. The preliminary figures indicate a 36 percent decrease in hog numbers for the county in 1945 over the previous year. The outlook is for increased farrowings for 1946.

The following chart indicates the United States cycle of hog production from 1924 to 1945:

![Chart 1](image-url)
The trends of hog production in the United States, Oregon, and Union County are shown in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Oregon</th>
<th>Union County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925</td>
<td>70,310,000</td>
<td>216,065</td>
<td>10,157</td>
</tr>
<tr>
<td>1930</td>
<td>74,135,000</td>
<td>224,539</td>
<td>11,759</td>
</tr>
<tr>
<td>1935</td>
<td>56,144,000</td>
<td>448,000</td>
<td>9,372</td>
</tr>
<tr>
<td>1940</td>
<td>79,840,000</td>
<td>441,000</td>
<td>14,000</td>
</tr>
<tr>
<td>1941</td>
<td>84,727,000</td>
<td>505,000</td>
<td>14,000</td>
</tr>
<tr>
<td>1942</td>
<td>104,559,000</td>
<td>556,000</td>
<td>15,600</td>
</tr>
<tr>
<td>1943</td>
<td>121,706,000</td>
<td>276,000</td>
<td>18,000</td>
</tr>
<tr>
<td>1944</td>
<td>86,714,000</td>
<td></td>
<td>12,000</td>
</tr>
</tbody>
</table>

The Outlook:

Increased production of hogs can be expected during 1946 and 1947. The amount that may be needed from then on through 1950 under the most favorable demand conditions have been estimated as high as 65 percent increase over 1935-1939 in pork.

Compared with 1935-1939, production of pork in 1945 was 37 percent higher than the average for this period.

With the exception of several years during the period from 1930 to 1940, Oregon has been on an importing basis for pork and pork products.

Recommendations

The livestock committee recommends that hogs should be increased to the extent that by-products may be efficiently utilized on every farm. It is the opinion that many tons of feed such as skim milk, shattered and down grain, screenings, shattered and cull peas as well as cull and waste fruits and vegetables are not being utilized to their maximum advantage. This type of feed can best be marketed through hogs. Union County could profitably support an average production of 16,000 head of hogs.

Skim Milk is not only the very best supplement for growing pigs, but is of almost equal value for fattening purposes. Though very low in dry matter content, milk furnishes a complete protein, which accounts in a large measure for the excellent returns. Milk renders the ration more palatable, inducting greater consumption and consequently greater daily gains. Also, milk is a good source of minerals.

Tests indicate that where three or four pounds of milk are fed with each pound of grain it will require 400 pounds of milk to replace 100 pounds of grain. Where milk is fed alone, gains will be quite slow, and it will require 1,000 to 1,500 pounds of milk to replace 100 pounds of grain.

Peas are considered an efficient and excellent feed for hogs especially if fed in combination with some carbonaceous feed, such as wheat or barley. They contain about two times as much crude protein as the cereals and are high in phosphorous and potash. When fed in combinations best results are obtained when they do not exceed 30 percent of the total mixture.

Tests show that an average daily gain of 1.52 pounds of pork was produced where pigs were allowed to harvest the crop of ripe peas from the field. These results indicate an average production of 397 pounds of pork to the acre. The amount of pork produced to the acre is very largely determined by the yield of peas.

Barley is the basis of most pig-feeding operations. From the results of extensive feeding tests conducted it has been shown that it requires 438 pounds of common feed barley, ground and without supplement, to produce 100 pounds of gain.

Wheat is gaining favor in Union County for fattening pigs, and is commonly thought to be superior to barley, but in numerous experiments wheat has not given increases quite equal to barley, unless fed with skim milk as a
supplement. The difference in wheat and barley is very slight. The finish of hogs from feeding wheat is as good or better than from feeding corn or barley.

The following feeding trials at Oregon State College Experiment Station show an advantage of chopped wheat over chopped barley by 2 percent when fed with skim milk as a supplement:

<table>
<thead>
<tr>
<th></th>
<th>Average Initial Weight</th>
<th>Average Final Weight</th>
<th>Daily Feed in Pounds</th>
<th>Daily Gain</th>
<th>Feed Used per 100 lb Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chopped wheat</td>
<td>231 lb</td>
<td>348 lb</td>
<td>6.38 lb</td>
<td>6.75 lb</td>
<td>1.95 lb</td>
</tr>
<tr>
<td>and skim milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chopped barley</td>
<td>208 lb</td>
<td>322 lb</td>
<td>6.38 lb</td>
<td>6.75 lb</td>
<td>1.91 lb</td>
</tr>
<tr>
<td>and skim milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Potatoes have a fair value as a feed for hogs. It is generally considered that 350 to 400 pounds of cooked potatoes are equal to 100 pounds of grain. Hogs do best on cooked or steamed potatoes. It is recommended that one pound of grain be fed with each 4 pounds of cooked potatoes.

A small amount of salt should be added to the water in cooking potatoes, with the water discarded because of the danger from salt poisoning.

The committee suggests that efficiency must be stressed. Efficiency is a factor that cannot be overlooked in the production of pork for a profit. In order to break even, the operator must receive for each 100 pounds of hog live weight the equivalent of the cost of 625 pounds of ground grain. This is farm price. In other words, if the cost of grain is 2 cents per pound, he will need to receive for each 100 pounds of pork live weight on the farm $12.50. This figure includes the cost of running the sow, boar charges, labor, and all other incidental expenses connected with the operation, as well as the grain.

It is the opinion of the committee that producers can make good returns by marketing their grain through hogs, rather than shipping the grain, even under present feed prices, providing of course that the operation is managed on maximum efficiency.

Maximum efficiency includes such practices as the following:

a. Remaining in production over a period of time. The operator going into the business for short periods generally finds himself out right at the time when prices and conditions are most favorable.

b. Pasture crops are extremely important in reducing the amount of grain required to produce increased weight in the animal. The return from good pasture is estimated to be around 350 pounds of pork per acre. This naturally will vary considerably depending on the quality of feed. Alfalfa, red clover, and other legumes will usually carry from 25 to 30 growing pigs per acre if the pigs get all the grain they want. For the larger pigs weighing from 80 to 125 pounds, the number of pigs per acre will naturally be reduced. In handling pastures it is found advisable to have the fields divided into several lots in order to rotate at different intervals.

c. Attention to sanitation, parasite and disease control. No business can be successful where losses are great. The chief parasites to combat include hog lice, mange and the intestinal round worm. Hog cholera has given growers considerable loss in the county and should be considered the chief disease to guard against. The best sanitation practices are to get the pigs and hogs out of filthy lots into clean pastures where hogs have not been run for a year. These practices
pay big profits by helping to control disease and by having the pigs on green feed, which greatly benefits their general condition. Plenty of drinking water with some shade are also essential.

d. The number of pigs raised per litter is a big factor in the cost of producing pork. In 1924, cost studies indicated the cost per weaning pig in litters of nine will be approximately $3.50 as compared to $6.25 weaning a pig in a litter of five. Because of general conditions, at present the cost per pig will be somewhat higher although the ratio will be the same. Heated brooders are doing much to save more pigs per litter.

The committee recommends that greater emphasis should be placed on the improvement of breeding stock. During the past five years this factor has been neglected principally because of war conditions. Purebread or registered sires of good type to improve the quality are considered highly essential in efficiency of production.

4-H Clubs are to be commended for and should be encouraged to continue their selection and production of purebred and registered livestock of good type for their livestock projects. Many of the offspring from 4-H swine projects are used to head many of the farm herds throughout the country.

The market outlook is favorable for hog production in Union County. The freight differential from eastern sources has been favorable to local producers. This factor is nevertheless becoming less important. Oregon is importing approximately 50 to 65 percent of its total pork requirements.

Marketing specialists and meat packers are continuously stressing the importance of quality in meat products to meet the demands of the consumer. This important point cannot be overlooked by the producer. The time may not be too far in the future when quality will play a much greater role in the price actually received by the producer. Standardization of quality begins with the selection of the breeding herd; from that time on until the hog is marketed feeding and management are largely the deciding factors.

The committee encourages greater producer interest in cooperative marketing. It believes that Union County is favorably located to take advantage of the complete program of processing and marketing of livestock through a producer owned organization.
INLAND OIL COMPANY
Gasoline—Stove Oil—Diesel
Pennzoil and Grease
Gray & Laird—Agents
Phone 1044 La Grande, Oregon

ASSOCIATED OIL COMPANY
Flying A and Aerotane Gas; Cadel-Veedol and Tydol Motor oils; Automatic Burner oil; Diesel and Stove oils; Complete line of lubricants.
Ray VanBloklan, Distributor
Phone 1003 or 634-M

Martin’s Machine Shop
P. O. Box 115 Phone 726
Island City
Electric and Acetylene Welding
Blacksmithing—Woodworking—General Repairing

Paul Bunyan Company
G.M.C. TRUCKS—FARM TRAILERS
Iron—Steel—Pipe
Complete Repairs for all Farm Machinery
La Grande, Oregon
Turn's Furniture Store
Complete Home Furnishings
and Electrical Appliances
Phone 746
La Grande, Oregon

T. R. Maxwell
Your oil Man Since Heck was a Pup
Agent, Richfield Oil Corporation
La Grande, Oregon
Phone 699
Elgin, Oregon
Phone 444

Globe Furniture Co.
"Where La Grande Shops with Confidence."
Phone 1086-W
La Grande, Oregon

Telephone 1007
1410 Adams Ave
Industrial Supply Co.
Millard Smith
P. O. Box 775, La Grande, Oregon
Overhead Irrigation Systems—Electric Motors
Wisconsin Engines—Domestic Water Systems
and Light Plants
General Statement

In preparing the report on farm crops, the committee has given careful consideration to recommendations of the Land Use Committee. If its suggestions are followed, the total amount of summer fallow will be considerably reduced, chiefly by the inclusion of legumes or grasses in rotation. These practices are now being successfully carried out on many of the farms.

It is the belief of the committee that this success demonstrates the importance of continuing the program on more of the farms to maintain soil fertility and control erosion. The object of this Planning Conference is to outline a future program to maintain and improve our agriculture. Unless we modify our methods of operation on many farms now engaged in grain production, we can see only a declining agriculture for this group.

We have reviewed and revised recommendations made at the 1938 and 1941 conferences, finding that many of the former recommendations still apply. We also find considerable progress on new developments as recommended in 1938 and 1941.

WHEAT

Situation—Acreage

UNION COUNTY WHEAT ACREAGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>55,749</td>
</tr>
<tr>
<td>1925</td>
<td>46,738*</td>
</tr>
<tr>
<td>1930</td>
<td>58,750</td>
</tr>
<tr>
<td>1935</td>
<td>41,824</td>
</tr>
<tr>
<td>1940</td>
<td>37,000</td>
</tr>
<tr>
<td>1941</td>
<td>37,000</td>
</tr>
<tr>
<td>1942</td>
<td>32,000</td>
</tr>
<tr>
<td>1943</td>
<td>31,500</td>
</tr>
<tr>
<td>1944</td>
<td>41,000</td>
</tr>
<tr>
<td>1945</td>
<td>43,000</td>
</tr>
</tbody>
</table>

* The low record of acreage indicated for 1925 was not due to any reduction in acreage during that period, but to a disastrous freeze which killed most of the winter wheat of the county.

THE DOMESTIC WHEAT SITUATION

Wheat Acreage, yield per acre, and production average 1934-43, annual 1936-45 1/

<table>
<thead>
<tr>
<th>Year of Harvest</th>
<th>Seeded Acreage</th>
<th>Acreage Harvested</th>
<th>Harvested Acreage</th>
<th>Yield per seeded acre</th>
<th>Production 1,000 bu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1934-43 average</td>
<td>66,154</td>
<td>53,829</td>
<td>12,325</td>
<td>12.2</td>
<td>789,060</td>
</tr>
<tr>
<td>1936</td>
<td>73,970</td>
<td>49,125</td>
<td>24,845</td>
<td>8.5</td>
<td>629,880</td>
</tr>
<tr>
<td>1937</td>
<td>80,814</td>
<td>64,169</td>
<td>16,645</td>
<td>10.8</td>
<td>873,914</td>
</tr>
<tr>
<td>1938</td>
<td>75,981</td>
<td>69,197</td>
<td>6,784</td>
<td>11.6</td>
<td>919,913</td>
</tr>
<tr>
<td>1939</td>
<td>62,801</td>
<td>52,668</td>
<td>10,133</td>
<td>11.8</td>
<td>741,180</td>
</tr>
<tr>
<td>1940</td>
<td>61,610</td>
<td>52,988</td>
<td>8,622</td>
<td>13.2</td>
<td>813,405</td>
</tr>
<tr>
<td>1941</td>
<td>62,892</td>
<td>55,642</td>
<td>6,680</td>
<td>15.1</td>
<td>943,127</td>
</tr>
<tr>
<td>1942</td>
<td>52,227</td>
<td>49,200</td>
<td>3,027</td>
<td>18.7</td>
<td>974,176</td>
</tr>
<tr>
<td>1943</td>
<td>55,127</td>
<td>50,648</td>
<td>4,479</td>
<td>15.3</td>
<td>841,023</td>
</tr>
<tr>
<td>1944</td>
<td>65,849</td>
<td>59,065</td>
<td>6,344</td>
<td>16.4</td>
<td>1,072,177</td>
</tr>
<tr>
<td>1945</td>
<td>68,781</td>
<td>64,740</td>
<td>4,041</td>
<td>16.8</td>
<td>1,123,145</td>
</tr>
</tbody>
</table>


32
In the 10-year (1932-41) prewar period, the supply and distribution of wheat in continental United States averaged as follows: The total supply 982,000,000, consisting of carry-over of old wheat 235 million production 738 million, and imports 9 million; total disappearance average 721 million, consisting of food 475 million, feed 122 million, seed 81 million, and exports and shipments 43 million bushels.

Foreign Trade:

Although foreign markets have absorbed more wheat from the United States in the past five years than for a number of years previous it is doubtful if this increased demand will continue much longer than approximately two years, or until the deficit countries are back into production.

At the present time, world needs are very great and considerably exceed the available supply in the principal exporting countries. In addition to the demand from regular importing countries, which is somewhat larger than usual, but could be easily covered in full from the present surplus, there are very large requirements from a number of countries, many of which are usually about self-sufficient or even exporters.

Prices:

For ten years before the World War I, Oregon farmers received an average of 80 cents per bushel for wheat. From 1920 to 1930 their average price was $1.10 per bushel. In 1930-1935 the average dropped to 58 cents. In the six years from 1936-1941, the average price was 75 cents per bushel. In 1942 the demand for wheat became active, because of World War II and prices were again one dollar or more per bushel. 1942-$1.07, 1943-$1.29, 1944-$1.38 and approximately $1.39 in 1945.

Wheat prices in the U. S. as a whole have generally advanced since 1938. The weighted average price to growers in each year from 1939-40 to 1943-44 were as follows, in cents per bushel: 69 cents, 68 cents, 94½ cents, $1.10, and $1.36. Up to 1943-44 the loan program was the most important factor in domestic wheat prices. In 1943-44 and the 1944-45, the extra demand for wheat resulting from the war became an important price factor.

Cost of Production:

Committee members in 1938 reported that the average cost of producing a 30-bushel-per-acre crop of wheat under the summer fallow system was $17.32. This compares with the cost of producing wheat in the Columbia Basin Countries of Oregon as follows: In 1936 records from 60 dry-land wheat farms with 55,855 acres of wheat, producing 619,934 bushels of grain, averaging 17.3 bushels per acre, and 37,758 acres of fallow the cost per acre for fallowing was $4.08, for growing wheat $7.28 or a total net cost of $11.36 per acre. This made the cost per bushel come to $0.66. (Ref. Station Bulletin No. 373.)

Soil Erosion.

Except on the steep lands around the edge of the Valley and in the Elgin Community, there is comparatively little water erosion in Union County. Wind erosion, however, is serious during the winter months. Fields in which blows have occurred are much more likely to blow again than other fields.

There are several ways to prevent soil blowing. One is by plowing grain land so as to leave all the stubble on top. Strip farming has proven highly satisfactory in the plain states and on two farms in the county; also, such practices as growing legume and grass crops frequently, that is in shorter rotations.

It takes hundreds of thousands of years to create a few inches of top soil, and this can be blown away in a very short period. Recommended practices to assist in the control of erosion where adaptable are listed:

1. Use straw spreader on combine.
2. No stubble burning.
3. Cultivation methods to leave the stubble on top of the ground.
4. Growing grain in rotation with grass or legumes.
5. Plowing in fall or early spring and re-plowing early for trashy fallow in some areas.

(See also conservation recommendations by Communities in the Land Use Committee report.)

Acreage Recommendations:

From the standpoint of soil conservation practices, feed and forage balance and diversification, the most satisfactory acreage conditions to date existed in the period of 1935 to 1944 when the maximum wheat acreage was 41,000 in 1935 and again in 1944 and the minimum was 31,500 in 1943.

There should now be some additional reduction in wheat acreage to allow for expansion in seed crops, pasture, forage, and if additional livestock feeding is practiced, oats and barley. Reduction in summer acreage will naturally follow, as rotation with forage crops will permit some consecutive cropping.

Varieties:

For most of the areas in the county, the improved strains of Elgin or Alicel varieties are considered well adapted.

Golden Fortyfold is considered the outstanding variety where the straw is fed to livestock.

Smut Control:

The use of the New Improved Ceresan is considered as the best general method for controlling smut. It should be used to treat all seed of the Alicel and Elgin varieties because of their lack of smut resistance.

Wheat especially smutty should not be planted, as no treatment will entirely eliminate all smut.

In all cases where smut control is a problem the smut-resistant varieties of winter wheat should be used. Smut resistant varieties are generally not 100% resistant and should, therefore, all be treated.

Parity For Wheat:

We endorse the Eastern Oregon Wheat League parity price program for wheat and suggests that every wheat grower in the county become thoroughly acquainted with the principles involved.

Transportation:

Continued development of the Columbia River transportation system is considered of vital importance to maintaining equitable freight rates for Union County crops.

OATS AND BARLEY AND FEED GRAINS

Situation:

For the past 25 years, the acreage of these crops in the county has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres-Oats</th>
<th>Acres-Barley</th>
<th>Acres-Rye (Grain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>8,943</td>
<td>4,361</td>
<td>952</td>
</tr>
<tr>
<td>1924</td>
<td>8,230</td>
<td>5,387</td>
<td>813</td>
</tr>
<tr>
<td>1929</td>
<td>7,310</td>
<td>5,206</td>
<td>1,857</td>
</tr>
<tr>
<td>1934</td>
<td>6,320</td>
<td>5,496</td>
<td>2,490</td>
</tr>
<tr>
<td>1939</td>
<td>15,400</td>
<td>9,300</td>
<td>2,600</td>
</tr>
<tr>
<td>1940</td>
<td>13,800</td>
<td>10,000</td>
<td>3,500</td>
</tr>
<tr>
<td>1941</td>
<td>13,200</td>
<td>12,000</td>
<td>3,400</td>
</tr>
<tr>
<td>1942</td>
<td>11,800</td>
<td>13,500</td>
<td>2,500</td>
</tr>
<tr>
<td>1943</td>
<td>11,850</td>
<td>12,500</td>
<td>1,600</td>
</tr>
<tr>
<td>1944</td>
<td>10,700</td>
<td>10,000</td>
<td>1,300</td>
</tr>
<tr>
<td>1945</td>
<td>9,700</td>
<td>9,500</td>
<td>1,100</td>
</tr>
</tbody>
</table>
In ordinary years, the demand for oats and barley, outside of the county is not great. Occasionally, other counties want some for seeding purposes or feed, but this demand is neither steady or predictable. There is little export demand for shipment out of the state except in years of crop shortages, although there was a little demand in Idaho for barley during the past several years for finishing beef cattle. During 1944 a small amount was shipped out for brewing purposes.

Prices:

<table>
<thead>
<tr>
<th>Year</th>
<th>Oats Per Bushel</th>
<th>Barley Per Bushel</th>
<th>Rye Per Bushel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>$0.47</td>
<td>$0.63</td>
<td>$0.97</td>
</tr>
<tr>
<td>1915</td>
<td>.39</td>
<td>.55</td>
<td>.87</td>
</tr>
<tr>
<td>1920</td>
<td>.75</td>
<td>1.24</td>
<td>1.49</td>
</tr>
<tr>
<td>1925</td>
<td>.48</td>
<td>1.03</td>
<td>1.01</td>
</tr>
<tr>
<td>1930</td>
<td>.36</td>
<td>.48</td>
<td>.64</td>
</tr>
<tr>
<td>1935</td>
<td>.34</td>
<td>.47</td>
<td>.60</td>
</tr>
<tr>
<td>1940</td>
<td>.35</td>
<td>.50</td>
<td>.58</td>
</tr>
<tr>
<td>1941</td>
<td>.50</td>
<td>.66</td>
<td>.70</td>
</tr>
<tr>
<td>1942</td>
<td>.54</td>
<td>.71</td>
<td>.74</td>
</tr>
<tr>
<td>1943</td>
<td>.75</td>
<td>1.00</td>
<td>1.04</td>
</tr>
<tr>
<td>1944</td>
<td>.73</td>
<td>1.06</td>
<td>1.13</td>
</tr>
</tbody>
</table>

The average farm price for oats or barley in Union County ranges between twenty and thirty dollars per ton.

Yields:

Barley will customarily yield more than oats in pounds per acre on the drier land, and usually oats will yield more than barley on the sub-irrigated lands.

Recommendations:

In line with the Land Use Committee’s recommendations, we recommend an average acreage in oats between 8,000 to 10,000 acres, and in barley between 9,000 to 12,000 acres. With increased livestock feeding and outside demand it is believed that this acreage may even need to be increased.

Rye is recommended on lands not suitable for wheat production because of alkali, hard-pan, drought, blow soil, or other factors. At present, the acreage has decreased considerably in the country because of a series of good moisture years. Under average conditions the acreage requirements will be between 2,400 and 3,500 acres.

Trebi barley is considered a good variety on the better yielding lands, although Utah White Winter, sown either in the fall or early spring has proved very satisfactory under normal conditions. Hannchen barley is an excellent variety for the drier lands.

Markton oats should be the standard variety for the county, although on the wetter sub-irrigated or irrigated lands Victory will prove superior.

New Improved Ceresan is recommended as a smut treatment.

Flax could safely be grown on soils having sufficient moisture for spring planting. During the present protein shortage in livestock feeds on some farms this may prove to be an excellent source for supplemental feeding.
POTATOES

Situation

Union County potato acreage for the past twenty-five years has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>1,017</td>
</tr>
<tr>
<td>1924</td>
<td>450</td>
</tr>
<tr>
<td>1929</td>
<td>605</td>
</tr>
<tr>
<td>1934</td>
<td>763</td>
</tr>
<tr>
<td>1939</td>
<td>365</td>
</tr>
<tr>
<td>1940</td>
<td>360</td>
</tr>
<tr>
<td>1941</td>
<td>300</td>
</tr>
<tr>
<td>1942</td>
<td>185</td>
</tr>
<tr>
<td>1943</td>
<td>800</td>
</tr>
<tr>
<td>1944</td>
<td>350</td>
</tr>
<tr>
<td>1945p</td>
<td>400</td>
</tr>
</tbody>
</table>

There is no suitable outside market for local potatoes. This is because the heavy producing Idaho districts lie to the south and east, Yakima to the north, and Klamath and Deschutes to the southwest. All of these are irrigated sections, with much higher yields per acre, and generally better quality than has been produced in this county.

Because of the disease and insect factors, Union County has been of practically no importance as a locality for the production of certified seed stock.

Recommendation:

No change in the present acreage.

In growing potatoes for local and home use, it is considered a sound policy to purchase new certified stock at least every third year.

Netted Gem is considered the leading potato variety. For early potatoes the Irish Cobbler, White Rose and Gold Coin are considered standard varieties.

SMALL SEED

Situation—local:

The development of the small seed industry in the county became very active after the pioneering stage. In brief, the beginning of the industry may be summarized in the following quotations taken from the County Agent’s reports:

The situation in 1915 of “small seed production is apparently insignificant.” In 1917 a total of 1500 pounds of alfalfa seed was ordered shipped into the county for the farmers. Even as late as 1924, it was recommended at the Agricultural Economic Conference that “alfalfa seed growing is not advisable, as it can be grown more economically in other parts of the state.” In 1930, the United States Census of Union County shows a total of 155 acres of clover and 648 acres of alfalfa for seed production. The 1925 census has no record of seed production in the county. The 1939 small seed acreage shows a total of 3,342 acres producing 493,058 pounds of seed, and the 1944 acreage is 2,043 grass and legumes and 751 acres vegetable seed (mustard and 1 acre carrot), with a total of 202,749 pounds of grass and legume seed and 469,450 pounds of vegetable seed.
The following table shows the Union County acreage by years for grasses and small legumes:

<table>
<thead>
<tr>
<th>Year</th>
<th>Alfalfa</th>
<th>Crested Wheat</th>
<th>Sweet Clover</th>
<th>Red Clover</th>
<th>Alsike Clover</th>
<th>Chewing Fescue</th>
<th>Alta Fescue</th>
<th>Bent Grass</th>
<th>Creeping Fescue</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>190</td>
</tr>
<tr>
<td>1933</td>
<td>200</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>370</td>
</tr>
<tr>
<td>1934</td>
<td>440</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,700</td>
</tr>
<tr>
<td>1935</td>
<td>820</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,100</td>
</tr>
<tr>
<td>1936</td>
<td>910</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,310</td>
</tr>
<tr>
<td>1937</td>
<td>960</td>
<td>360</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,840</td>
</tr>
<tr>
<td>1938</td>
<td>1,680</td>
<td>400</td>
<td>560</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,390</td>
</tr>
<tr>
<td>1939</td>
<td>2,000</td>
<td>350</td>
<td>350</td>
<td>487</td>
<td>50</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,242</td>
</tr>
<tr>
<td>1940</td>
<td>2,000</td>
<td>100</td>
<td>50</td>
<td>125</td>
<td>250</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,660</td>
</tr>
<tr>
<td>1941</td>
<td>1,000</td>
<td>150</td>
<td>200</td>
<td>130</td>
<td>650</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,280</td>
</tr>
<tr>
<td>1942</td>
<td>1,190</td>
<td>15</td>
<td>220</td>
<td>280</td>
<td>700</td>
<td>130</td>
<td>25</td>
<td>215</td>
<td></td>
<td></td>
<td>2,390</td>
</tr>
<tr>
<td>1943</td>
<td>480</td>
<td>50</td>
<td>275</td>
<td>225</td>
<td>655</td>
<td>150</td>
<td>50</td>
<td>265</td>
<td></td>
<td></td>
<td>2,275</td>
</tr>
<tr>
<td>1944</td>
<td>233</td>
<td>170</td>
<td>600</td>
<td>185</td>
<td>100</td>
<td>586</td>
<td>751</td>
<td>2,794</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>485</td>
<td>325</td>
<td>270</td>
<td>700</td>
<td>215</td>
<td>170</td>
<td>625</td>
<td>72</td>
<td>3,128</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fescue Grass Seed:**

Prior to 1943 very few of these seeds were produced outside of Oregon. Production and price of these seeds in Oregon for the years for which data are available follow:

Production in Oregon and Prices Received by Growers in Oregon (Basis Clean Seed)


<table>
<thead>
<tr>
<th>Year</th>
<th>Acres</th>
<th>Pounds</th>
<th>Price per 100 lb</th>
<th>Acres</th>
<th>Pounds</th>
<th>Price per 100 lb</th>
<th>Acres</th>
<th>Pounds</th>
<th>Price per 100 lb</th>
<th>Acres</th>
<th>Pounds</th>
<th>Price per 100 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>50</td>
<td>10,000</td>
<td>$30.00</td>
<td>75</td>
<td>10,000</td>
<td>$30.00</td>
<td>100</td>
<td>10,000</td>
<td>$30.00</td>
<td>150</td>
<td>10,000</td>
<td>$30.00</td>
</tr>
<tr>
<td>1937</td>
<td>190</td>
<td>30,000</td>
<td>35.00</td>
<td>75</td>
<td>30,000</td>
<td>35.00</td>
<td>100</td>
<td>30,000</td>
<td>35.00</td>
<td>150</td>
<td>30,000</td>
<td>35.00</td>
</tr>
<tr>
<td>1938</td>
<td>500</td>
<td>108,000</td>
<td>46.50</td>
<td>70</td>
<td>22,500</td>
<td>$32.70</td>
<td>200</td>
<td>46.50</td>
<td>32.70</td>
<td>300</td>
<td>46.50</td>
<td>32.70</td>
</tr>
<tr>
<td>1939</td>
<td>925</td>
<td>186,000</td>
<td>40.00</td>
<td>150</td>
<td>23,500</td>
<td>34.00</td>
<td>200</td>
<td>40.00</td>
<td>34.00</td>
<td>300</td>
<td>40.00</td>
<td>34.00</td>
</tr>
<tr>
<td>1940</td>
<td>2200</td>
<td>393,000</td>
<td>25.50</td>
<td>750</td>
<td>240,000</td>
<td>12.75</td>
<td>100</td>
<td>75.00</td>
<td>12.75</td>
<td>200</td>
<td>75.00</td>
<td>12.75</td>
</tr>
<tr>
<td>1941</td>
<td>3750</td>
<td>800,000</td>
<td>28.50</td>
<td>1250</td>
<td>222,000</td>
<td>20.00</td>
<td>200</td>
<td>45.00</td>
<td>20.00</td>
<td>300</td>
<td>45.00</td>
<td>20.00</td>
</tr>
<tr>
<td>1942</td>
<td>4000</td>
<td>960,000*</td>
<td>28.50</td>
<td>1500</td>
<td>270,000*</td>
<td>25.00</td>
<td>350</td>
<td>75,000*</td>
<td>25.00</td>
<td>500</td>
<td>75,000*</td>
<td>25.00</td>
</tr>
<tr>
<td>1943</td>
<td>3790#</td>
<td>860,000*</td>
<td>33.00</td>
<td>1690#</td>
<td>400,000</td>
<td>42.75</td>
<td>400</td>
<td>50.00</td>
<td>42.75</td>
<td>800</td>
<td>50.00</td>
<td>42.75</td>
</tr>
</tbody>
</table>

* Preliminary.

# Figures taken from E. R. Jackman's 1943 annual report.

In 1944 a small acreage of Chewings fescue grass for seed production was established in Northeastern Washington. Definite information as to acreage is not available. Potentially the Palouse area of Washington and Idaho is able to offer strong competition in production of fescue grass seed.

"Production of all types of Fescue seed in Canada is confined to creeping red, which is produced almost entirely in the province of Alberta. The production of this seed is estimated at 300,000 pounds this year, which is normal production. The probable market for this seed is the United States, to whom Canada anticipates exporting 100,000 to 150,000 pounds annually. Canadian
Other competition in fescue grass seeds is noted in the following table:

**Imports of Agricultural Seeds Subject to Federal Seed Act—Effective February 5, 1940, by Countries 1935-1941.**

<table>
<thead>
<tr>
<th>Country from which imported</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>1939</th>
<th>1940</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>69,700</td>
<td>22,700</td>
<td>15,100</td>
<td>24,500</td>
<td>55,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>685,400</td>
<td>680,000</td>
<td>1,116,200</td>
<td>1,154,400</td>
<td>830,300</td>
<td>1,052,300</td>
<td>1,530,600</td>
</tr>
<tr>
<td>Other Countries</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>755,100</td>
<td>702,800</td>
<td>1,181,600</td>
<td>1,178,900</td>
<td>885,900</td>
<td>1,052,300</td>
<td>1,530,600</td>
</tr>
</tbody>
</table>

**OTHER FESCUE**

<table>
<thead>
<tr>
<th>Country from which imported</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1938</th>
<th>1939</th>
<th>1940</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>2,100</td>
<td>25,000</td>
<td>1,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>51,000</td>
<td>50,000</td>
<td>97,000</td>
<td>107,500</td>
<td>113,100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great Britain</td>
<td>100</td>
<td>13,000</td>
<td>5,500</td>
<td>1,700</td>
<td>71,200</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>300</td>
<td>14,100</td>
<td>11,500</td>
<td>74,900</td>
<td>70,000</td>
<td>56,500</td>
<td></td>
</tr>
<tr>
<td>Other Countries</td>
<td>51,400</td>
<td>77,100</td>
<td>114,300</td>
<td>189,400</td>
<td>331,500</td>
<td>136,400</td>
<td>10,400</td>
</tr>
</tbody>
</table>

The table on imports ends with the fiscal year 1941-1942. Shortly after the outbreak of the war, the Government, in the interest of national safety, ceased publishing detailed statistics on exports and imports.

Up to 1922 there was no duty on these seeds. None of the fescues was mentioned specifically in the tariff acts of 1922-1930. They were, however, covered by the group “all other grass seeds not specially provided for” in the 1922 act and “all other grass and forage crop seeds not specially provided for” in the 1930 act. The duty in each of these groups was and still is 2 cents a pound.

Growers of fescue grass seed will have keener competition in production and more difficulty in maintaining quality in those areas of the state, such as the Willamette Valley, where the common or perennial ryegrass has become established. It is practically impossible to remove this seed from the fescue grasses in the cleaning operations, therefore, considerable rogueing is required in the field prior to harvest.

**Clover Seed:**

<table>
<thead>
<tr>
<th>Year</th>
<th>U. S. Acreage</th>
<th>Oregon Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>134,400</td>
<td>12,300</td>
</tr>
<tr>
<td>1935</td>
<td>167,300</td>
<td>23,000</td>
</tr>
<tr>
<td>1940</td>
<td>89,200</td>
<td>17,500</td>
</tr>
<tr>
<td>1942</td>
<td>101,400</td>
<td>16,000</td>
</tr>
</tbody>
</table>

The state has approximately 15% of the U. S. total acreage. Oregon's yield per acre far exceeds the U. S. average. It is usually the highest of any state. While we have only 15% of the national acreage, Oregon production accounts for from 20% to 30% of the national production, and this state is normally the leader in production.
The price in Oregon is normally the highest of all major producing sections, and, usually, therefore exceeds the U. S. average.

The largest production of this seed in Oregon is concentrated in Klamath, Deschutes, and Crook Counties. These grow the clover in a definite rotation. They account for about 80% of the state's production in normal years.

Red Clover:
Oregon is only a minor factor in the production of Red Clover. The U. S. Production of red clover is commonly 50,000,000 to 100,000,000 pounds, while Oregon produces only about 2,000,000 pounds. This amounts to about 3% of the nation's red clover seed. The red clover acreage fluctuates from about 11,000 acres up to a maximum of 27,000 in 1937.

Sweet Clover:
This crop normally occupies about 10,000 or 12,000 acres, mainly in Eastern Oregon and 400 to 600 of these acres are cut for seed. Seed prices are about double the U. S. average, so it cannot be shipped east. Paying freight and handling charges for eastern shipment would result in a price of almost zero to Oregon growers. The limited production is used in Oregon and adjacent Washington points. It is not likely that the Oregon seed acreage will ever be much larger than it is now.

Alfalfa Seed:
The trend in acreage of alfalfa seed production in Oregon is rapidly downward since 1939, when the peak was reached at 12,000 acres. In 1943 Oregon had 3,500 acres of alfalfa seed for harvest with the smallest total production since 1934.

In the spring of 1944, there were indicated intentions for increasing plantings of alfalfa for seed production in this state. This increased interest was partly because of the unlimited demand for "Ranger," a new wilt resistant variety alfalfa, and partly on account of the stimulus given to the production of all alfalfa seed through the 1944 agricultural conservation program.

The downward trend in alfalfa seed production in Oregon is due largely to insect (grasshopper) damage and adverse weather conditions (frost) in some production areas. Alfalfa seed production is concentrated in the "shoe string" valleys which increases the danger from grasshopper attacks from the surrounding dry lands.

Alfalfa seed production is dependent upon wild bees for pollination. Experimental work is desperately needed to develop larger wild bee populations.

In Oregon, the principal seed production areas are located in Malheur, Lake, Baker, Umatilla, Morrow, and Union Counties. Each of these counties has large areas of marginal grain lands especially suited to the production of alfalfa seed. According to the B.A.E., U.S.D.A., crop production statistics of 1943, Oregon ranked eighteenth in total acreage among the twenty-two most important alfalfa seed producing states.

In the past the state of Oregon has in only a few years met her own demands for alfalfa seed. Since large areas of marginal wheat land in the Eastern Oregon counties are adaptable to alfalfa seed production in years of low cash farm income it would be a material aid to many wheat farmers in the state. Since 1936 the average farm price of common alfalfa seed was never less than 18.75 cents per pound. Certified seed always commands a higher price.

The overhead in the cost of producing alfalfa seed is very nominal, in fact the cost of production generally is less for alfalfa seed than any of the small legume seeds, and the cost per acre is far less than wheat.

Advantages of Seed Growing:
As compared with wheat, production of alfalfa, clover and perennial grasses has the following advantages:
FIRST STATE BANK
OF ELGIN, OREGON

Deposit all your funds in a rapidly growing home-owned institution and assist in the development of this community.

Union County Cooperative Creamery
Union, Oregon Phone 3121

Owned and operated by producers, affiliated with United Dairymen's Association, a marketing association for co-operative creameries in the Pacific Northwest.

PIONEER FLOURING MILL CO.
FLOUR and FEED, GRAIN STORAGE
and PEA CLEANING

Phone 39
Island City, Oregon

La Grande Branch
THE FIRST NATIONAL BANK OF PORTLAND
"A Pioneer Institution at Your Service"

La Grande, Oregon
"DEFINITION"

"A Chamber of Commerce is an organization of the forward looking citizens of any given area created for the protection and promotion of the civic, commercial, agricultural and industrial progress of that community."

This means that this is YOUR organization. Call upon it when you think it can be of assistance to you.

---

**Reuter Hardware**

Hardware— Implements  
Plumbing and Electrical Supplies  
Paints and Oils

Phone 2673  
Union, Oregon

---

**La Grande Lumber Co.**

"Everything For the Builder"

Jefferson and Fir Sts.  
Phone 17

La Grande, Oregon

---

**Lottes Warehouse**

Feed—Fuel—Seeds

1525 Jefferson  
Phone 792

La Grande, Oregon
A crop is produced every year instead of every other year.
Every state in the Union can produce wheat but comparatively few regions can produce alfalfa seed and grass seed.
Once seeded, the crops produce several years, relieving the grower of annual plowing, seeding, cultivating, etc.
The seed is ordinarily higher in price than wheat, as less pounds are produced per acre, and so the crop can be shipped to any state in the Union, whereas freight rates limit wheat shipments.
Grasses and legumes are erosion-preventing crops.

Disadvantages of Seed Growing:
Grass seed production is intensive and highly specialized.
Grass seed production requires a completely specialized type of equipment.
Most grass seed crops shatter readily when mature, therefore, serious losses may result from weather delayed harvesting.
Considerable hand labor is involved in establishing stands of grass.
Cost per acre to become established is high because of the labor involved.
Legume seeds, especially alfalfa, may be frosted.
Alfalfa seed yields are sometimes low because of non-pollenation because of weather conditions not favorable to insect flight.

Recommendations:
We recommend average seed acreage of Ranger and Ladak alfalfa up to approximately 2,000 acres. Sweet Clover seed to 500 acres, Yellow Madrid recommended; Alsike Clover about 1000 acres, this crop to be limited to the lands with higher moisture. Midland Red Clover about 500 acres in the well drained heavier soils. There is a present national shortage of forage seed crops of all kinds and until this condition is adjusted, every effort should be made to produce the above kinds of seed to capacity in this area.

The production of grass seed should be limited to the volume that will be readily absorbed each year by the trade without heavy carry-over stocks. It is not known at present just how much acreage this would involve throughout the United States. New growers might be cautious in the amount of acreage they will establish since it is not so much volume but quality that determines how much the trade will accept.

A reasonable increase should be made of the improved and specialty strains, and new varieties not grown heretofore. The acreage of these grasses should be increased only to the extent that the market will consume the production at a reasonably profitable income to the grower. It is not always known when new grasses are introduced whether they will readily be accepted by the public.

The increase in bent grass seed will depend upon the rate of decreased acreage in the coastal production areas.
It is also recommended that growers limit their grass seed acreage to the extent that maximum quality products can be attained. Efficiency may be increased by holding the acreage down and maintaining yields at the present average per acre or above. Quality must be maintained in order to meet the competition on the market.
The committee recognizes the importance and value of a standardized brand that will aid in advertising and selling, and recommends further investigation and study on this subject.

Because of the demand by some of the eastern buyers of chewings fescue seed for certification on this crop, growers in Union County are requesting that a certification program be established for chewings fescue. This action is necessary in order to maintain the purity of the variety in areas where the
creeping fescue is grown. This action will also help to maintain the purity of chewings fescue seed from other than creeping fescue strains.

We believe that more locally grown seed should be used for lawn construction in Union County and in Oregon instead of the imported blue grasses and mixtures. Every grower should take more interest in making this project a success.

Other grass seed crops to be encouraged are orchard grass, brome grass, tall oat grass, slender wheat grass, intermediate wheat grass and others so long as there will be a reasonable margin of profit to the producer. As the Soil Conservation Service and Forest Service range reseeding progresses, it is expected that other grasses will be in demand, and we advise growers to watch developments as soon as a demand develops for any grass seed which can be produced here to advantage; we urge a vigorous production policy.

In order to secure maximum yields under the greatest efficiency in grass seed production it is necessary for growers to utilize commercial fertilizer in the form of ammonium sulfate.

According to fertilizer trials conducted cooperatively with growers on grass for seed production, less than 100 pounds of ammonium sulphate per acre is considered inefficient. Some growers are now using more with excellent results. The minimum applications recommended are 50 pounds per acre applied in the fall with 50 pounds duplicated in the spring, after the first year of harvest. To follow the second harvest the minimum would be 75 pounds in the fall duplicated in the spring, the third year 100 pounds, etc. The maximum has not been determined. The duplicated spring application depends largely on available moisture conditions.

Tests have definitely indicated that variations in nitrogen has influenced yields, with not so much result from phosphate.

The question yet to be solved is, “How much fertilizer can I use profitably?,” not, “How little can I get by with?”

Soils on every farm vary and each farmer will need to determine to a certain extent the fertilizer needs for his particular situation.

We recommend that more research be conducted as to the soil temperature, moisture content, date and rate of application in order to determine whether the fall or spring application gives more satisfactory results.

We recommend also that the Eastern Oregon Branch Experiment Station, Union, rent some land on the sand ridge soils or cooperate with a grower by supplying the labor, etc., to run tests in order to determine the fertilizer needs of the sand ridge soils. It is a recognized fact that the ridge type soils are entirely different than the sub-irrigated soils on the Experiment Station.

OTHER SEED PRODUCTION POSSIBILITIES

It was not until 1939 that pea seed production became of any appreciable importance. From that time on it is an industry of major importance. The following table indicates the acreage of Austrian field peas and garden type peas as a seed crop in Union County:

<table>
<thead>
<tr>
<th>Year</th>
<th>Austrian Field Peas (acreage)</th>
<th>Garden Field Peas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>450</td>
<td>600</td>
</tr>
<tr>
<td>1940</td>
<td>1,900</td>
<td>275</td>
</tr>
<tr>
<td>1941</td>
<td>2,700</td>
<td>1,500</td>
</tr>
<tr>
<td>1942</td>
<td>16,000</td>
<td>4,200</td>
</tr>
<tr>
<td>1943</td>
<td>17,500</td>
<td>3,800 Est.</td>
</tr>
<tr>
<td>1944</td>
<td>3,600</td>
<td>3,800 Est.</td>
</tr>
<tr>
<td>1945</td>
<td>5,000</td>
<td></td>
</tr>
</tbody>
</table>

The production of smooth dry edible and garden pea seed has at least temporarily reached its peak in acreage in the Pacific Northwest and possibly in the United States.
This condition was brought about largely because of the government's request for stimulated production to meet military and lend-lease food demands.

In Union County, however, the acreage of the garden type pea seed will be expanded because it has been found that this area at the present time produces a seed of better quality, higher germination and also higher yields than average.

For seed pea production, a cool growing season is required, and high temperatures are especially disastrous when pods are setting. Since Austrian peas are not strictly a winter annual, they may be spring planted, but spring plantings are far more susceptible to aphid damage and to heat damage. The largest acreages have, therefore, been from fall seedings.

Growers in Union County believe Austrian Winter peas at $3.50 per cwt. are a profitable crop under conditions of average yields or better.

The committee recommends that Union County growers should produce an average of 5,000 acres of Austrian field peas for seed as a diversity on livestock grain farms. Furthermore, all pea straw and stubble should be incorporated into the soil and none of it burned.

In order to prevent serious loss or dockage in wheat, we recommend that Austrian peas should be followed by a crop of barley for feed then one year of summer fallow before a crop of wheat. This will also tend to reduce the loss of wheat from burning as a result of too high nitrogen content in the soil.

Hairy Vetch is considered a serious weed in Union County; therefore, seed production is not recommended. Great losses also result during harvest because of shattering.

Cereals for Seed:

Limited acreage of seed oats and barley is recommended to maintain a limited supply of pure seed in the county. Every grower of wheat in this area and in the Pacific Northwest should recognize the importance of using pure seed stock of wheat in order to maintain the grades and quality of wheat for milling purposes.

Since this work has seriously been neglected during the war food production years, the committee recommends that 500 acres of good wheat land be cleaned up for the production of certified varieties to meet the needs of growers in Union and surrounding counties.

**HAY**

The hay acreage in the county has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Grass Hay</th>
<th>Alfalfa</th>
<th>Grain Hay</th>
<th>Other</th>
<th>TOTAL All Hay</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>13,644</td>
<td>13,372</td>
<td>13,905</td>
<td>294</td>
<td>41,215</td>
</tr>
<tr>
<td>1924</td>
<td>12,287</td>
<td>17,486</td>
<td>7,016</td>
<td>311</td>
<td>39,346</td>
</tr>
<tr>
<td>1929</td>
<td>13,306</td>
<td>19,634</td>
<td>6,060</td>
<td>346</td>
<td>37,100</td>
</tr>
<tr>
<td>1934</td>
<td>9,886</td>
<td>27,147</td>
<td>7,752</td>
<td>345</td>
<td>45,129</td>
</tr>
<tr>
<td>1939</td>
<td>8,100</td>
<td>25,400</td>
<td>6,300</td>
<td>1,000</td>
<td>40,800</td>
</tr>
<tr>
<td>1940</td>
<td>10,500</td>
<td>26,000</td>
<td>7,000</td>
<td>1,300</td>
<td>44,800</td>
</tr>
<tr>
<td>1941</td>
<td>9,800</td>
<td>28,000</td>
<td>5,000</td>
<td>1,200</td>
<td>44,000</td>
</tr>
<tr>
<td>1942</td>
<td>9,000</td>
<td>26,500</td>
<td>3,000</td>
<td>915</td>
<td>39,415</td>
</tr>
<tr>
<td>1943</td>
<td>11,000</td>
<td>23,200</td>
<td>4,500</td>
<td>1,000</td>
<td>39,700</td>
</tr>
<tr>
<td>1944</td>
<td>10,500</td>
<td>21,500</td>
<td>5,000</td>
<td>980</td>
<td>37,980</td>
</tr>
<tr>
<td>1945p</td>
<td>11,000</td>
<td>20,600</td>
<td>4,500</td>
<td>900</td>
<td>37,000</td>
</tr>
</tbody>
</table>

The alfalfa hay acreage doubled from 1919 to 1934. This was also the year when total hay acreage reached its peak in the county, from that date there has been a steady decline.
Hay Requirements to Yields.

The present annual hay requirement is about 88,000 tons. On the basis of 37,000 acres in total hay crops with an average of 2½ tons per acre it would make available about 92,500 tons.

Recommendations:

Several thousand acres of grain are cut for hay annually. This, if replaced as far as possible by alfalfa hay, would more than support the present increase in live stock numbers because of increased yields. Aside from this, although an additional increase of alfalfa is desirable, it is scarcely possible, without an increase in cattle feeding operations. (See also Land Use Recommendations).

PASTURE

Acreage—59.1 percent of all land in farms in the county is in pasture. Approximately 10,000 acres are in plowable pasture. The balance of more than 293,000 acres is in non-tillable land which will always be in pasture. In 1934 there was a total of 14,580 acres of plowable pasture.

Native Pasture—although Union County at one time had some of the best natural grass pastures in the state, most of these have declined in value due to a combination of dry years and over-grazing until in many the native higher yielding dry land grasses have largely disappeared, and their place has been taken by weeds, low yielding grasses, and annual grasses, such as the wild brome or cheat grasses.

Pasture improvement through the use of better grasses and legumes and better management practices is important. The Extension Service recommends meadow foxtail, alta fescue, Tualatin meadow oatgrass, creeping red fescue, smooth brome grass, lemmun alkali grass, alfalfa, sweet clover, strawberry clover, white dutch clover, alsike clover, ladino clover on irrigated or sub-irrigated lands.

Alta fescue, tualatin meadow oatgrass, orchard grass, smooth brome grass, sweet clover, and alfalfa are recommended for the drier cultivated lands.

Wheat grasses, wild rye grasses, Fairway crested wheat grass, chewings fescue, alta fescue, sweet clover and alfalfa are excellent for the blow type soils.

Lemmon alkali grass, alta fescue, strawberry clover, and sweet clover are more tolerant to alkali soils than most grasses or legumes.

Recommendations:

(See also Land Use Committee report and Dairy Committee report for pasture improvement recommendations).

Sweet Clover, in its second year, will produce more pasture than any other crop. It is also the best soil improving crop, but should not be planted on land which may be used later for alfalfa seed production. Sweet clover planted in combination with Tualatin meadow oatgrass and other tall growing grasses will reduce the hazard of bloat in livestock to a minimum.

If alfalfa is to be used for pasture grass should also be seeded with it, and if it is to be maintained as a permanent crop, it should be allowed to come into bloom once a year so that a hay crop can be cut. If the alfalfa pasture is divided and handled in this way, it will maintain itself for a longer time. Otherwise, pasturing will kill it by starvation.

With native pastures, rotation grazing should be practiced to allow the native grasses to replenish the food supply in the roots. It should be allowed to form seed heads every other year, or at the most, every third year. Stock should be kept off from native grasses in the spring until the growth is about six inches high, or if this is not practical, the grass should not be early grazed more than once in three years.
For the efficiency of production in plowable pastures more stress should be applied to the use of nitrogenous fertilizer applications early in the spring in order to get stimulated plant growth and a longer pasturing season. Summer applications applied on irrigated grass pastures are highly beneficial.

WEED CONTROL

History and Situation.

Area control of weeds began in 1930 under the project carried on by the county court and county agent, when spraying equipment and chemicals were first furnished to farmers at cost.

At the present time the county has four legally organized weed control districts. The first was formed in 1933 for the purpose of controlling white top and includes the entire county. It was later expanded to include Russian knapweed, and in 1941 to include leafy spurge. The original special appropriation of $3000 for weed control was levied by the court to cover expenses of this particular project. In the white top-Russian knapweed-leafy spurge district, the entire cost of the material is paid by the county court.

The Elgin Weed Control district includes all that area lying north and east of the Grand Ronde River north and east of Indian Creek to the County line. This district was formed in 1938. The regulations for this district provide that noxious weeds including morning glory, Canadian thistle, toad flax and blue flowering lettuce shall be prevented from forming seed or shall be destroyed by the owner of the land.

The Island City Weed Control district was sponsored and organized by the Land Use committee of that district in February 1940. In addition to the requirements included in the Elgin Weed district, this district requires that the landowner must treat with chemicals, or keep under supervised cultivation all such noxious weeds as occur in an area within 10 feet of the property line. The county court agreed that it would approve seeding down to alfalfa as a control measure where a good stand is secured and the weeds are kept clipped to prevent formation and spread of seed.

The Imbler-Summerville-Alicel Weed Control district was organized in March 1942. Weeds included are Canadian thistle, morning glory, blue flowering lettuce and toad flax. This district includes the area north of the Island city weed control district with Booth lane as the south boundary, and Phillips creek which empties into the Grande Ronde River at Elgin as the North Boundary, and from the Umatilla National Forest Boundary, on the west side of the valley to the Whitman National Forest boundary on the east side of the valley, approximating a total of 52 square miles.

The Union Pacific Railroad Company and the Oregon State Highway Commission have each cooperated on the weed control work and, when requested, have budgeted for weed control work in their respective properties.

The Union County Court now budgets a weed control appropriation of $5000 annually. The weed control project now includes one 1940, 1½ ton Chevrolet Truck, one John Deere model-A Tractor, one Hardie spray outfit with 300 gallon tank, one 5-foot duck foot blade weeder, two 3-foot chemical spreaders and one shoulder type weed burner.

The project maintains a year-round man as foreman in charge of the cultivation and chemical treatment work and one man for an average of four months to keep weeds mowed down on the county roads. These men are under direct supervision of the county agent who works with the county court on compulsory weed control.

The weed law passed by the state legislature was endorsed by the previous county conferences and by the farm organizations of this county. This committee re-endorses the compulsory weed control laws and recommends that greater emphasis be placed on compulsory weed control throughout the entire county. The law provides:
1. That it is compulsory to control white top, knapweed and leafy spurge in any organized weed district.

2. That the state must pay for the cost of weed control on state lands including highway within a district.

3. That officers of a weed control district have power to destroy weeds at public expense where owner neglects same, the cost to be assessed against the land.

4. That officers of a weed district and county court may request the State Department of Agriculture to quarantine the crop on the farm if noxious weeds are present.

Recommendations:

1. We recommend that Union County continue to carry on compulsory control of white top, Russian knapweed and leafy spurge.

2. We recommend that the entire county be made a special compulsory weed control district to control noxious weeds; namely, Canadian thistle, blue flowering lettuce, morning glory and toad flax. In order to maintain the control program the County Court should adjust the financial appropriation accordingly.

3. Wherever the areas of noxious weeds are too large and the control by chemicals makes the cost prohibitive, we recommend a control program by cultivation according to the best practices suggested by the Extension Service. Ref: Station Circular of Information No. 336. "Weed Control by Cultural Practices."

4. On spot patches we recommend the use of sodium chlorate or Atlacide as the most effective known chemical for weed control. The new foliage type sprays such as 2,4-D are recommended as selective deep-rooted, perennial type weed killers for use on annual broad-leaved weeds and vetches or for preventing seed formation of noxious weeds in fields of grain.

5. We commend the county court and county engineer for the program of constructing road grades with sloping shoulders and shallow borrow pits in order to facilitate the weed control program. However, we urge that steps be taken to seed these new grades to permanent grasses and legumes such as crested wheatgrass or fescue grasses and alfalfa to build a competitive sod for weed control.

6. We recommend that all farmers use special care to secure only seed free of noxious weeds.

7. We recommend that no machinery, especially harvesting machinery, be allowed to go from noxious weed infested land to clean land without being thoroughly cleaned. (Note: this cleaning of harvesting machinery is required by law.)

8. We recommend that all weed screenings obtained from the mills, and elevators or cleaning establishments be returned to the farms and immediately destroyed by burning.
COUNTY PLANNING COMMITTEE
RECOMMENDATIONS
Dairy Sub-Committee

GENERAL STATEMENT

About 16 percent of the agricultural income for Union County is derived from the sale of dairy products. There has been a gradual increase in the number of dairy cows in the county. In 1910 there were 4,681 cows two years old or over in the county, whereas on January 1, 1944, there were 8,300.

The increase in dairy cows in Union County has been somewhat more rapid than the increase in the United States, although the condition is not alarming in view of the fact that the population in the Western states has increased more rapidly than has the population of the entire country.

The following table gives information of value on this point:

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>11 West. States</th>
<th>Oregon</th>
<th>Union Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>20,625,000</td>
<td>1,341,000</td>
<td>152,000</td>
<td>4,681</td>
</tr>
<tr>
<td>1920</td>
<td>19,675,000</td>
<td>1,541,000</td>
<td>200,000</td>
<td>4,565</td>
</tr>
<tr>
<td>1925</td>
<td>17,645,000</td>
<td>1,623,000</td>
<td>217,000</td>
<td>4,721</td>
</tr>
<tr>
<td>1930</td>
<td>22,910,000</td>
<td>1,814,000</td>
<td>239,000</td>
<td>6,574</td>
</tr>
<tr>
<td>1935</td>
<td>26,082,000</td>
<td>2,177,000</td>
<td>275,000</td>
<td>7,113</td>
</tr>
<tr>
<td>1940</td>
<td>24,926,000</td>
<td>2,254,000</td>
<td>262,000</td>
<td>7,800</td>
</tr>
<tr>
<td>1941</td>
<td>25,478,000</td>
<td>2,334,000</td>
<td>265,000</td>
<td>7,850</td>
</tr>
<tr>
<td>1942</td>
<td>26,305,000</td>
<td>2,415,000</td>
<td>276,000</td>
<td>7,700</td>
</tr>
<tr>
<td>1943</td>
<td>27,106,000</td>
<td>2,502,000</td>
<td>280,000</td>
<td>8,200</td>
</tr>
<tr>
<td>1944</td>
<td>27,607,000</td>
<td>2,484,000</td>
<td>284,000</td>
<td>8,300</td>
</tr>
<tr>
<td>1945</td>
<td></td>
<td></td>
<td></td>
<td>(est)7,800</td>
</tr>
</tbody>
</table>

POPULATION TRENDS

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>11 West. States</th>
<th>Oregon</th>
<th>Union Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>91,972,266</td>
<td>6,825,821</td>
<td>672,756</td>
<td>16,191</td>
</tr>
<tr>
<td>1920</td>
<td>105,710,620</td>
<td>8,902,972</td>
<td>783,389</td>
<td>16,636</td>
</tr>
<tr>
<td>1930</td>
<td>122,775,046</td>
<td>11,896,222</td>
<td>983,786</td>
<td>17,492</td>
</tr>
<tr>
<td>1940</td>
<td>131,669,275</td>
<td>13,883,265</td>
<td>1,089,684</td>
<td>17,399</td>
</tr>
<tr>
<td>1945p</td>
<td>140,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p. Preliminary

DAIRY PRODUCTION OUTLOOK—GOALS

The total cow population is at an all-time high. Total production is at an all-time high. American farmers are moving steadily toward more and more grassland farming. The over-all total of hay acreage has increased in Oregon between the years of 1939-1943. The acreage of improved dryland and irrigated pastures increases each year. Better farming methods and increased use of fertilizers has tended to maintain and, on many farms, increase the yields.

Competition in the dairy industry is going to become more and more keen. Efficiency must be the password to remain in the industry. The size of the farm, the feed supply, and the home labor available are important considerations when determining the number of dairy animals to maintain. Larger herds have an advantage in efficiency of operation. A cost survey reported in 1933 indicated that herds under 10 cows produced butterfat at $ .39, 10-30 cow herds $ .35, 30-50 cow herds $ .33, and 50 and over herds $.31. These are average figures obtained in the coast region but the same variations are found throughout the state.
Considering trends in population, per capita consumption, exports and imports, and in crop and livestock yields it appears that production requirements would be higher in 1950 for practically all farm products than prewar. The amounts that may be needed by 1950 under the most favorable demand conditions have been estimated as high as 25 percent increase over 1935-1939 in milk production.

Considering the above facts, the committee is of the opinion that since dairy cattle numbers in Union County were 7,113 in 1935 and 7,300 in 1945 or an approximate average of 7,210 head for this period, Union County could safely increase total dairy cattle numbers 2 years old and over to approximately 10,000 head by 1950.

EFFICIENCY IMPORTANT FACTOR IN DARYING

Dairying is a sound and profitable enterprise in Union County provided the producer maintains his cost of production on an efficient basis. Production of butterfat or milk should come largely through increased production of feed, better feeding and through the improvement of the quality of cows, to be profitable.

To make a profit from his crops, a producer must be able to market them efficiently either as cash crops or as feed for his livestock. If he feeds them to livestock, the individual animals must be efficient producers or they cannot make best use of feed in returning good production and profit. No matter how well all the essentials of crop production have cooperated to produce good yields they cannot return a good profit to the producer when marketed through inefficient animals. Poor livestock thus are a permanent barrier between their owner and good profit from crop and livestock production. The producer should take great care to select and keep only those animals which are good enough in every essential to serve as a profitable market for his crops as well as an efficient manufacturing plant for their particular product.

The efficiency of any animal is determined by the relation between the amount of feed consumed and the amount of product derived from it, whether that product be milk, meat, wool or energy for work. All animals must first be supplied with the feed necessary for maintenance. The efficiency of the animal, therefore, depends upon the amount of feed consumed above maintenance and converted into the product for which the animal is kept.

Careful experiments have clearly proved that the maintenance ration per 100 pounds live weight of the animal is practically the same for all dairy cows. The great difference, then, in the efficiency of dairy cows depends upon their ability to consume feed above maintenance and convert this into milk.

Proved sires should be developed in herd improvement associations. Many small operators find it difficult to own a good sire because of relative high cost per cow and it is suggested that partnership ownership of sires in cooperative bull rings, individual ownership, or cooperative artificial insemination associations are three methods by which owners of small herds may secure the services of good sires. These systems also permit “proving” of sires.

Dairy Herd Improvement:

The average butterfat production per cow in the United States is about 189 pounds. The average in Oregon is about 248 pounds per cow. The average per cow in Oregon D. H. I. A. is 350 pounds. We have in the state many herds with an average production of 450 pounds and more.

A compilation of data obtained in dairy-herd-improvement associations in 1944 shows how sharply income over feed costs rises as the production level increases.
On the basis of these figures, if a dairyman had a herd of 20 cows with an average butterfat production of approximately 200 pounds, his total income over feed cost would be (20 x 78) $1,560. If his herd had an average production of 300 pounds of butterfat per cow his total income over feed cost would be (20 x 144) $2,880. A herd with an average production of 400 pounds would yield a total income over feed cost of ($4,160.)

The number of sires proved good in Oregon each year is far too small to meet the need for such sires.

Artificial insemination has passed the experimental stage. It provides the best known means for the mass improvement in dairy herds through the use of good sires that has ever been tried.

Production testing is the only way of proving the value of sires. It is the only accurate way of determining the level of production of each cow. Knowledge of the level of production is basic to a sound feeding or management program.

**FEED RESOURCES IMPORTANT**

The further development of the industry must be based largely upon the production of an adequate supply of cheaply grown feeds, the source of feed being an important factor in dairy management. “Since the cost of feed represents about 50 percent of the total cost of producing dairy products, it is necessary to give special attention to kind, quantity, and quality of feed, as well as to the most efficient methods of obtaining it.” (Ref. O. S. C. Sta. Bul. No. 318)

One of the fundamental requirements of efficient feeding is a balanced ration, that is a ration which is balanced not only chemically but also physically to meet the animals needs. Chemically it requires the right proportion of protein, carbohydrates, fats and minerals; physically it requires bulk, succulence, and palatability.

The essential frequently lacking in the ration from the standpoint of chemical balance for animals is protein. The most economical way to supply sufficient protein in the ration is to grow and feed more legumes, as many are now doing. Alfalfa and clovers usually head the list.

More careful attention should be given the problem of producing a liberal supply of a higher quality hay, curing the hay being essential to gain maximum quality with increased production per acre.

Under conditions in Oregon, a dairy cow to produce 250 to 350 pounds of butterfat will have to receive the equivalent in feeds of 6 1/2 to 7 tons of good alfalfa hay. Each month of full pasture will reduce the harvested feed requirements the equivalent of 1/2 ton of alfalfa hay. (Ref. O. S. C. Exp. Station Bul. No. 318.)

Roughage is admittedly the cheapest source of feed, yet it can be expensive if carelessly handled. Newer knowledge of nutrition indicates that the closer roughage is to the condition that exists when it is about two-thirds grown the greater will be its palatability and feed value and, therefore, its dollars and cents value. New harvesting equipment, methods of drying, and time of harvest are all factors that enter present-day considerations of the place of roughage in the feed program.
The increase in grassland farming and improved methods of silage making have given newer and greater importance to grass and legume silage. Many dairymen feed as much as 70 to 80 pounds daily.

The improvement of pastures through better management which may include rotation, clipping, cultivation, spreading of droppings, use of fertilizers, use of improved legumes and grasses, and better use of irrigation water if available as a means of lowering production costs is suggested. Land requirements for pasture in the county range from ¾ acre irrigated mixed grasses and legumes to a minimum of one acre for mixed grasses and legumes on non-irrigated land. The average hay feeding period in Union County is seven months requiring approximately 3 to 3½ tons of good forage for each dairy cow, this depending upon the breed and weather conditions. On the basis of average yield for non-irrigated alfalfa hay this will place the forage acreage requirements for the recommended goal of producing dairy cows at 10,000 acres, or roughly one acre per cow on non-irrigated land and two-thirds acre on irrigated land.

A suggested mixture for the average non-irrigated Union County pasture may be made up of the following grasses at the rate of 12 to 15 pounds per acre: alta fescue, Tualatin oat grass, orchard grass, smooth brome, fairway crested wheat, creeping red fescue, alfalfa, sweet clover and, in some cases with more moisture, alsike clover. White clover and meadow foxtail may be included.

For irrigated pastures or under conditions with more favorable moisture, the following grasses are considered superior: alta fescue, meadow foxtail, Tualatin oat grass, creeping red fescue, smooth brome, orchard grass.

Legumes such as white clover, strawberry clover, ladino clover, alfalfa, and alsike clover should have a place in every permanent pasture mixture.

Emergency pastures planted in early spring for late summer use are considered a valuable asset on many dairy farms. Winter wheat or winter rye sown in the spring with sweet clover and sometimes with red clover are found most satisfactory.

One month of good pasture is the equivalent of one-half ton good leguminous hay.

The water supply for dairy cattle should be abundant and regular. It has been proved that lack of sufficient water will prevent fine livestock, and their feed, care, and housing, from working together efficiently in production, no matter how good these may be. The dairy cow requires about three pounds of water for each pound of milk produced.

ECONOMICAL SIZE OF UNIT TO SUPPLY A GOOD FAMILY INCOME

On the basis of figures obtained from Dairy Herd Improvement records as shown previously in this report and those obtained from cost of production studies and depending upon the diversity of the farm in order to get the most efficient use of land and equipment required in the business, the following should not be overlooked in becoming established in the dairy business:

A producer depending entirely on the production of his dairy must receive a minimum of $3,500 gross from that source to provide his family with $1,500 for living expenses. This would make it necessary to have 18 to 20 dairy cows producing 300 pounds of butter fat or more, or a minimum of 8 to 10 cows in the case of heavy diversification. The effective use of all by-products of the dairy is considered important.

The farm that produces practically all of its own feed with its own labor has the greatest chance of success. Part-time farming (ref., Planning Report of Veterans Agri. Advisory Committee). Successful part-time farming or the maintaining of a healthy family living standard on a part-time farm is dependent upon there being sufficient industry in the area to provide employ-
ment. For the part-time farmer interested in keeping dairy stock it is considered that one cow requires two acres of pasture and three acres for hay and of grain or a total of five acres.

DAIRY CATTLE DISEASE CONTROL AND SANITATION

Union County, since October 1945, has a compulsory Bang's testing program for dairy and beef cattle. This work being conducted under the direction of the State Department of Agriculture in cooperation with the County Court of Union County.

The committee wishes to go on record in support of this program and urges all dairy and livestock owners to cooperate to the fullest extent in bringing Union County into a modified credited status as soon as possible.

Mastitis in dairy cattle is now recognized as probably the No. 1 disease as far as income losses are concerned. The financial losses are probably greater than those caused by Bang's disease.

Research on the various phases of Mastitis indicates that a sound program of control must be based on early detection of the disease, sanitary measure, and treatment of infected animals. A great number of tests have been developed and evaluated. Many remedies through use of various drugs, chemicals, and vaccines have been advanced without a high percent of curves. More recent developments in the use of Sulpha derivatives, Penicillan or similar products have been very encouraging.

Losses of dairy calves in Union County in the past several years have been abnormally high. This condition is found in beef as well as dairy herds.

The committee recommends greater effort and research to be continued by the Oregon State College Experiment Station along the lines of reducing losses in the dairy and livestock industry through disease and parasite control. We wish to commend the college and research staff for work thus far accomplished.

Livestock owners are also urged to give greater attention to livestock disease control and sanitation. It is the responsibility of every dairymen to improve the appearance of his buildings and surroundings and provide such sanitary improvements as screened doors and windows, cement floors, milk cooling facilities, better utensil cleaning facilities and other necessary measures required to produce a quality product for market. As time and conditions permit the demands of the consumer for higher quality dairy products will no doubt cause the less sanitary producer's market to disappear.

When the number of dairy cattle is too small, the owner tends to neglect them for other enterprises on or off the farm. More than ever certain standards on dairy farms must be maintained to meet health and pure food inspection. If the dairy enterprise is more than one family cow it should be large enough to be a major factor of income.

DAIRY MARKETS

We now have a nation of 140,000,000 people, or approximately 10 percent more potential milk consumers than we had a decade ago. If as a nation we were to consume dairy products on the basis that nutritionists indicate that we should, there would be plenty of room for continued expansion in the dairy industry. However, we must remember that other food industries are also after the same potential market. It is generally accepted that the level of consumption of dairy products is very closely associated with the family income level. While we are now working at a high level nationally, how long this will continue is uncertain. Consumers' income may be expected to fall and with it part of the demand for dairy products. Dairymen may find it necessary to reduce the production cost much lower than at present in order that the price of milk and dairy products may be made more attractive to the consumer. Economy and efficiency of operation and quality of product will all be a part of our program.
The committee wishes to stress the importance of the consumer educational program being conducted for the use of dairy products of this state as conducted by the Oregon Dairy Products Commission. This work is made possible through State House Bill No. 259 passed by the State Legislature in 1942, which permits the collection of ½ cent per pound of butterfat produced during the month of June. The Oregon Dairy Products Commission is to be commended and also encouraged on the fine program of dairy products nutrition advertising, especially in the schools of the state. The committee recommends the program be continued.

Dairymen of Union County should not lose sight of the fact that the freight differential between the finished product, namely, butter and that of cream or whole milk is a sizeable figure. Considering the difference in the price of butterfat at Portland markets (generally one cent higher) as compared to local prices on the same grade and that the average cream shipped tests between 30 and 35 percent butterfat there is no advantage in shipping cream instead of the manufactured butter. Skim milk has a value, from the nutritive standpoint, of 35 cents per 100 pounds as feed for swine or poultry. By-products in the form of animal proteins are one of the most valuable feeds produced on the farm.
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Viewed in the light of the national picture Oregon must be rated among the leading horticultural states. Statistics are not needed to make this clear. Oregon, at the present time, leads all states of the Union in the production of winter pears, filberts, loganberries, youngberries, boysen berries, black raspberries and gooseberries, and it ranks second in the production of strawberries, red raspberries, walnuts, prunes and sweet cherries. It also ranks first in the production of a number of horticultural specialties including holly, Easter lily bulbs and tulip bulbs. It is among the leading states in the production of apples, nursery stocks and in the production of processed peas, beans, carrots and beets.

Distribution of the Industry:
A glance at the geography of the horticultural industry shows that it is fairly well distributed over the state. It is a major source of income in the counties of Clackamas, Columbia, Douglas, Hood River, Jackson, Lane, Marion, Multnomah, Polk, Umatilla, Wasco, Washington and Yamhill, and it is of more or less importance in Benton, Coos, Curry, Josephine, Linn, Malheur and Union.

General Outlook:
It now appears that the horticultural industry will have but few major problems that are the direct outgrowth of the war. The industry has practically none of what are commonly termed “War Orphans.” With a few exceptions, the commercial production of horticultural commodities was not stimulated because of the war effort. In some cases the war caused a sharp decline of production. Practically no equipment was installed that will become useless after the war.

Barring unforeseen eventualities, the economic status of most horticultural crops appears to be fairly good. The acreage of bearing deciduous fruit trees of the United States is at the lowest point in 30 years, and the same is true of trees that have not reached bearing age.

Foreign markets which have played a part in the marketing of some horticultural commodities from Oregon were materially affected by the war, and the regaining of these markets may present some difficulties. Already there is evidence that foreign governments will place restrictions upon imports.

Because of high prices paid for fruits during the war period, and because of shortages that existed, there is ground for belief that a general fruit-tree planting “boom” is about to take place. While planting of some kinds of fruit trees on a moderate scale appears to be justified at this time, wholesale planting might lead to serious over-production 10 to 12 years from now.

There is also the threat from new production areas that may come into the picture. The Coulee Dam project in the state of Washington is a point case. This area in time might bring about complications for Oregon horticulture, if horticulture should be undertaken there on a large scale. The threat, of course, is years away in the case of tree fruits, but it might develop quickly with vegetables and small fruits.
TREE FRUIT OUTLOOK

Cherries: Though not alarming, the general situation regarding cherries is not as favorable as it might be. While the total number of cherry trees in the United States has not changed materially since 1920, commercial production during this period shows a steady and significant rise. From 31,600 tons in 1920, the commercial production figure rose to an all-time high of 199,840 tons in 1942.

In considering the outlook for cherries one has to distinguish between the so-called sweet and sour types. Sour cherries are grown only in limited quantities on the Pacific Coast but they are produced on a large scale in several eastern states, and they are processed in close proximity to the large consuming centers. Sweet cherries, on the other hand, are grown principally in California, Oregon and Washington, with limited plantings in favored localities of New York and Michigan. The relative status of the two types of cherries is indicated by the extent of the plantings of each type. At the present time the number of sour cherry trees in the country is 6,605,721, while the number of sweet cherry trees is 2,700,658.

In the three Pacific Coast states there are 2,318,555 sweet cherry trees and 305,515 trees of the sour type. Practically all the trees of the sour type are in Oregon and Washington. The number of non-bearing sweet cherry trees in the three states is given as 340,564 while that of the non-bearing sour cherry trees is 30,893. Cherry consumption is limited not because of a lack of popularity of the fruit but because of price. As compared to that of other tree fruits the cost of growing, harvesting, processing and transportation is high and this results in high prices to the consumer.

Owing to the competition from eastern states it is not likely that sour cherry growing in Oregon can assume large proportions. The outlet now is largely through processing channels, and it appears unwise to plant extensively of this type of cherry unless the processors in the vicinity feel fairly certain that there will be a demand for the fruit when the trees reach bearing age.

Sweet cherries from Oregon are utilized largely for brining, canning and freezing, while comparatively small amounts are shipped out of the state as fresh fruit. Of recent years the bulk of the sweet cherry tonnage has been put up in brine for subsequent use in the maraschino trade. This has been a fairly satisfactory outlet, although surpluses have existed in some years. Brined cherries are somewhat involved in the intricacies of foreign trade. Imports from Southern Europe are a threat to the Oregon product. Respite from this threat has been gained through protective tariffs and shipping difficulties since the start of the war in 1939. The matter may well again become an issue in the post-war period.

Sweet cherries are also used in commercial canning but the quantity utilized in this manner has never become large, even though the product has been offered to the public for many years. Recently, sweet cherries have been processed in frozen form. This product, of course, is new and it is hard to predict its future. It could become an important outlet.

Shipments of fresh cherries to Eastern markets have been confined largely to the dark varieties of sweet cherries from the districts East of the Cascade Mountains. Cherries from the districts West of the Cascade Mountains are usually less desirable for fresh shipment. The fresh outlet for Oregon cherries is somewhat handicapped because Oregon cherries mature several
weeks after the California product is on the market. There is always a demand for sweet cherries, however, as long as the season lasts, but experience shows that the price level can be maintained only by keeping the supplies low. There is a class of trade that will pay high prices for sweet cherries, but prices drop noticeably when it is necessary to reach down into the lower income groups of consumers.

HORTICULTURAL SITUATION IN UNION COUNTY

Extremely low prices for apples, and drought years which seriously injured the trees in the County, during the years prior to the World War II, have resulted in pulling out of many orchards. Cherry growers have lost considerable acreage of trees by winter kill, drought and rodents, but have received generally better prices. Growers of small fruits have received fair prices in recent years.

Outlook for Union County Growers:

The national outlook indicates that eastern growers will continue, through their advantage in freight rates, to offer serious competition to apple growers. As a result of the development of the freezing industry in recent years the present local demand for apples for processing may prove to be a salvation for Union County. Cherry growers may have more competition than was the case a few years ago, as new plantings are coming into production in the Northwest. Small fruits reach local or nearby markets, chiefly, and meet competition principally from the Walla Walla and Milton sections.

Prunes which reach the market late as fresh fruit, may return favorable prices some years, although during the past several years all of the local production was absorbed by the canning trade in Western Oregon at fair prices.

The following chart indicates the trend and status of fruit acreage in the County:

<table>
<thead>
<tr>
<th>KINDS OF FRUIT</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples Cherries Peaches Pears Prunes Strawberries Raspberries</td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>2,218</td>
</tr>
<tr>
<td>1925</td>
<td>1,795</td>
</tr>
<tr>
<td>1930</td>
<td>1,418</td>
</tr>
<tr>
<td>1935</td>
<td>1,219</td>
</tr>
<tr>
<td>1939</td>
<td>1,100</td>
</tr>
<tr>
<td>1940</td>
<td>1,000</td>
</tr>
<tr>
<td>1941</td>
<td>920</td>
</tr>
<tr>
<td>1942</td>
<td>900</td>
</tr>
<tr>
<td>1943</td>
<td>875</td>
</tr>
<tr>
<td>1944</td>
<td>875</td>
</tr>
<tr>
<td>1945</td>
<td>865</td>
</tr>
</tbody>
</table>

RECOMMENDATIONS

1. We recommend that no increase in apple acreage be made.

2. We recommend that no increase in pear plantings be made other than to maintain local demand. There is too much competition in the commercial trade for this area to compete with. If plantings are made in the county, they should be localized on the heavier soils area where irrigation is available. Conditions in the county are excellent for yields and quality of product.
3. We recommend prune planting for the production of green or fresh fruit only on lands having high water table or where a supply of irrigation water is available in August. The recommendation for increase is particularly of importance to growers who are already engaged in some other line of production or where the crop will be designed chiefly for a side line income.

4. Peaches are too uncertain and should be increased only to be able to meet the local demands. Possibly 35-40 acres is considered a safe maximum acreage.

5. We recommend increases in cherry acreage only on moderately valuable foothill land, chiefly as a side line to other types of farming or income. The acreage could be increased 200 to 300 acres bringing the county total to approximately 850 acres. A good share of the present acreage is over 15 years old.

It is of general grower opinion that one pollenizer should be planted with every eighteen trees.

In this locality the most satisfactory market is for Lamberts. The committee, therefore, recommends not over 15 percent of the planting should be Bings and 60 percent Lamberts with the remainder to be Royal Annes.

We particularly endorse the work of the Cherry Growers Associations which we know have been effective in improving and maintaining markets for this fruit.

We recommend that all cherry trees be sprayed for cherry fruit fly and infested trees that are neglected be removed. Enforcement of fruit fly control should be mandatory.

6. We recommend that sufficient small fruit be produced to supply local markets and some nearby markets. Plantings should include strawberries, red raspberries, youngberries, black raspberries, principally for the quick freeze trade or other demands. Increased new plantings should be made to keep up with the demand.

7. More information is needed on market outlets for new quick frozen foods.

We suggest that more research be devoted toward marketing problems for better distribution and packaging. Cooperative marketing possibilities should be investigated, and emphasized.

New type containers need to be considered in order to provide a more sanitary product in smaller type consumer parcels.

8. Research in disease and insect control should be encouraged.

9. Amateurs contemplating getting established in fruit production should consider the cost factor. Growers indicate that the cost of establishing a cherry orchard is $400 to $450 per acre. Six years are required before any income is returned.

There are also hazards to contend with in establishing an orchard. These may be rodents, insects, disease, and frost or winter kill.

59
COUNTY PLANNING COMMITTEE
RECOMMENDATIONS
Poultry Committee

Oregon produces a surplus of eggs above the needs of state consumption. This surplus must be exported to distant markets, principally on the Atlantic seaboard and California. The major part of the commercial export 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.

State and National Poultry Situation

The production of poultry products in the United States has increased approximately 50 percent during the war. However, per capita production on the Pacific Coast is below prewar level. During the past 15 years, the Pacific Coast has changed from a large exporting to an importing area. The poultry industry on the Pacific Coast has not expanded as much during the war period as some other areas and there has been a substantial increase in population.

There has not been a large variation in the laying hen population in Oregon during the past 15 years with the exception of 15 to 20 percent increase during the war.

Oregon normally exports from 10 to 15 percent of the total eggs produced. The export eggs include about 250 to 300 carloads of market eggs and about 100 carloads of hatching eggs. Some of the market eggs still go east but the number sold on the Pacific Coast is gradually increasing. Most of the chicken hatching eggs are exported to California.

Poultry production in the United States will no doubt have to be curtailed from the present high level of production unless large quantities are exported. However, inasmuch as the Pacific Coast has changed from an exporting to an importing area, the poultry industry in Oregon should be able to compete and about maintain the present poultry population. To do this, producers will have to continue to improve the quality of poultry products.

The following chart indicates the trends in poultry numbers for Union County:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of head</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>59,898</td>
</tr>
<tr>
<td>1925</td>
<td>67,816</td>
</tr>
<tr>
<td>1930</td>
<td>74,244</td>
</tr>
<tr>
<td>1935</td>
<td>58,973</td>
</tr>
<tr>
<td>1939</td>
<td>65,000</td>
</tr>
<tr>
<td>1940</td>
<td>70,000</td>
</tr>
<tr>
<td>1941</td>
<td>65,000</td>
</tr>
<tr>
<td>1942</td>
<td>67,000</td>
</tr>
<tr>
<td>1943</td>
<td>72,000</td>
</tr>
<tr>
<td>1944</td>
<td>75,000</td>
</tr>
<tr>
<td>1945p</td>
<td>65,000</td>
</tr>
</tbody>
</table>
The poultry industry of Union County is a minor enterprise. Ninety-three percent of the farms that keep poultry report flocks of less than 200 hens.

Eggs from outside districts are shipped into the county to meet the requirements of local markets during the fall and winter months. Local producers have to compete in local markets against undergrade eggs shipped in.

As long as the industry remains on a part-time import basis local prices to growers are usually based upon Portland quotations plus freight. As soon as the industry expands to where it is a smaller exporter of eggs the prices are generally based upon Portland quotations minus the freight.

The large acreage per farm in the county indicates that other agricultural enterprises are established. Poultry keeping usually is followed in countries or communities where farms are small and are forced into intensive cropping.

The poultry industry as a planned enterprise for a few farms in Union County is sound business. A number of new poultry units were established and an increase in the size of many flocks took place during the past several years where eggs were replacing meats and other foods demanded for the war. It is under these conditions that adjustments to normal should take place. Approximately 93% of the farmers who keep chickens in Union County now have fewer than 200 hens. These flocks are too small to justify frequent gathering of eggs, proper storage facilities, frequent deliveries and other factors necessary to the delivery of quality eggs for the consuming public.

The outlook of the industry depends largely upon whether or not farmers who keep poultry make a reasonable effort to adjust their poultry units in relation to the demand which prevails for quality eggs.

Markets and Feed:

Producers of eggs in Union County have to develop their own markets individually or sell to independent egg and produce dealers. There is no established cooperative egg marketing association. There is a cooperative feed association located at Union which does afford the poultrymen some beneficial competition.

Feeds and supplies are usually higher in the county than in intensive poultry districts where competitive buying is practiced. Freight rates are unfavorable for shipping in feeds or shipping out eggs.

Breeds and Additional Market Outlets:

The state export demand is for white shelled eggs. This demand naturally results in the Leghorn and other white egg breeds dominating the export egg situation. This does not mean the exclusion of the heavy breeds from Union County farms.

The demand for eggs from well-managed flocks to supply hatching eggs and dressed poultry meat should be considered by a few farmers as additional market possibilities.

During the past ten years there has been a substantial shift from White Leghorns to the heavy breeds, mainly New Hampshires.

There has never been a large commercial broiler or fryer industry in Union County. This type of meat production has been limited to a few producers close to the centers of population.
There may be times when commercial turkey growers, that do not keep breeders, may want to utilize their breeding equipment by raising a flock of fryers during the fall or winter months.

It is the opinion of the committee that State grade regulations effecting the buying and selling of eggs by local merchants is not adhered to by the merchant and also not enforced by the State Department of Agriculture. More rigid inspection of local conditions effecting grades of eggs is requested.

There is a greater need of education to acquaint the producer with egg grading as well as instructing the consumer on the question of egg grades and quality.

Summary of Recommendations:

Size of flock. Poultrymen that stay in business during the postwar period will not only have to produce quality products but also obtain economical production. The proper adjustment of the size of flock is an important factor in obtaining economical production. A poultry unit should be either a commercial flock, side line flock or a small family flock.

A farm that expects to derive its major source of income from poultry should develop a business unit of not less than 2,000 laying hens.

For the farm that plans a side line cash income from poultry, the unit should consist of at least 200 to 500 laying hens.

For the family that just wants poultry meat and eggs for home consumption 25 laying hens are sufficient.

Capital. More capital is required to develop a poultry enterprise than the amateur anticipates. Exclusive of land and the home, it will require an investment of about $5 per bird to build and equip a brooder house and laying house under present conditions. About four acres of range land should be provided for every 500 pullets to be raised.

Chick purchases. In purchasing day-old chicks, caution should be observed. Chicks should come from stock that has been bred to live and lay and that is free from pullorum disease. Chicks should also come from grade A large eggs inasmuch as there is some correlation between the type of egg a chick comes from and the type of egg the chick will lay when mature. It is a dangerous practice to buy started chicks because of the disease hazard.

Brooding. It is a desirable practice to have the brooding operations entirely isolated from the laying flock. The brooder house should be from 200 to 300 feet from the laying house to prevent the spread of diseases from the old birds to the young stock. Five hundred chicks should be the maximum brooded in one group and at least 50 square feet of floor space is required for each 100 chicks in addition to the wire porch.

The permanent brooder house equipped with a wire slat porch is the most satisfactory system of brooding. If adequate range is not available pullets can be raised in confinement successfully if they are not over-crowded. They should have about two square feet of floor space per bird from two to five months of age if they are confined.

Green feed should be provided throughout the growing period and fed liberally whether the pullets are on range or confined. Two acres will care for about 500 pullets during the growing on range period. An additional two acres should be available so that a two-year rotation system can be followed.

It is essential that all range equipment be portable so it can be moved to control disease and avoid contamination and killing out of green feed.
Management of layers. From 50 to 100 percent of the laying flock should be replaced each year with a fresh supply of pullets. Commercial egg producers prefer to replace a high percentage of their flock each year because a laying hen will decrease from 20 to 25 percent in production with each successive year. Poultry breeders however, prefer to carry over as many good high-producing birds as possible. In general, hatcheries prefer eggs from yearling and two-year-old hens.

Pullets should never be placed in the same pen with older birds. Under such conditions they do not have an equal chance and the older birds are frequently healthy carriers of disease and parasites that are readily transmitted to the pullets.

Beginning two to four weeks before hatching eggs are saved, breeding flocks should be fed a breeders’ ration that contains an additional supply of vitamins so as to produce high hatchability and livability.

Market eggs and hatching eggs should be gathered three or four times a day, cooled immediately, and held at a temperature from 40 to 60 degrees with a relative humidity above 90 percent. (Extension Bulletins 659, 590, 633, Station Circular 138).

Breeding program. In a long-time breeding program there are many factors that should be taken into consideration such as: egg quality, more desirable meat type conformation, livability, hatchability, fertility, rate of growth, rate of gain, rapid feathering, early maturity, free from broodiness, free from winter pause in production, high intensity and persistency of production.

Egg quality and more desirable meat type conformation are two factors that should receive special attention. Egg quality should be emphasized in all breeds, and meat type especially in the heavy breeds such as New Hampshires, Rhode Island Reds and Plymouth Rocks.

The committee recommends that greater emphasis should be placed in the program of veterinary research of poultry disease and control measures. Particular attention is directed to the disease commonly known as “range paralysis.”

TURKEY PRODUCTION

Situation In Union County:

The turkey industry in Union County is relatively of little importance. The production of turkeys is at present limited entirely to a few small farm flocks.

The following chart indicates the turkey population of Union County according to census figures:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>2,799</td>
</tr>
<tr>
<td>1935</td>
<td>2,100</td>
</tr>
<tr>
<td>1939</td>
<td>2,300</td>
</tr>
<tr>
<td>1940</td>
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<td>1941</td>
<td>2,000</td>
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<td>1942</td>
<td>1,800</td>
</tr>
<tr>
<td>1943</td>
<td>2,300</td>
</tr>
<tr>
<td>1944</td>
<td>2,350</td>
</tr>
<tr>
<td>1945</td>
<td>2,500 p.</td>
</tr>
</tbody>
</table>

63
The cost of producing turkeys on a commercial scale in Union County has kept the industry limited to a few farm flocks. The cost of importing high protein feeds and exporting the finished product to market are two limiting factors. Competition from lower production cost areas cannot be overlooked when contemplating a turkey enterprise in this area.

**Breeding Stock:**

Oregon has developed a wide reputation for the production of large Broad Breasted turkeys that are free from pullorum disease. Hatcheries and producers from various sections of the United States are coming more and more to Oregon to obtain hatching eggs, poults and breeding stock. Oregon has many natural advantages such as mild winters, early springs, cool summers and low altitude for the production of hatching eggs and poults. If the turkey growers will continue to improve the quality of the stock, fertility and hatchability, this export business of hatching eggs, poults and breeding stock will continue and possibly expand. Although there has been a big demand for Oregon eggs and poults, producers must bear in mind that it can be easily over-expanded.

The Oregon Turkey Improvement Program that was organized in 1940 has played an important role in the improvement and development of the industry.

**Cost of Operation:**

It requires a good sized farm and a large amount of capital to operate a commercial turkey unit. Established growers that expect to stay in business should figure on at least two acres of range for every 100 turkeys. One acre will care for about 100 turkeys per year; however, sufficient range should be available to provide a two-year rotation.

It will cost in the neighborhood of $2 per bird for a first-year investment which would include a brooder house, brooding equipment, range shelters, roosts, feeders and watering devices. Under present conditions it will cost from $5.50 to $6 to mature a market bird exclusive of the first-year investment for equipment. Feed represents 60 percent of this cost, labor 20 percent, cost of poults 12 percent, and overhead 8 percent.

In handling a flock of breeder hens, feed represents 33 percent of the costs, labor 27 percent, depreciation on breeders 31 percent, and overhead 9 percent.
REPORT OF VETERANS' COMMITTEE

As members of the Union County Veterans' Agricultural Advisory Committee, we recognize the debt which all of us owe the members of the armed forces. We also recognize and appreciate our responsibility to promote the best interest of returning veterans.

A certain number of veterans can and should be taken into agriculture. The committee will, therefore, advise and counsel with the returning veterans who desire information in order to help them become established and make their business successful.

The Veterans' Agricultural Advisory Committee of Union County, like those in other counties, has been formed to render practical aid to those returning veterans interested in farming for a livelihood, or in operating a part-time farm in addition to regular urban employment to the extent that that is possible in this area.

County land use committees and their predecessors, agricultural outlook committees, composed of practical farmers and experienced farm leaders, have been studying the farming business in Union County over the past 25 years. Periodic reports of these committees are available and have been drawn upon freely in preparing this information. Those interested in more detailed information on any particular phase of Union county agriculture may refer to the complete reports on file in the office of the county agricultural agent.

Economic Report:

We suggest that in general, a buyer should have not less than 50 percent of the purchase price of a farm, plus enough additional cash to equip the farm properly and carry the family living through at least one year. The mortgage should not be more than one-half of the normal value of the farm. It is generally agreed that most farms should be evaluated according to the net return that may be expected from the land over a long term of years. The selection and purchase of a farm is generally one of the most important business transactions in a farmer's lifetime. Evaluating farm land is a hard job and, therefore, a prospective purchaser should obtain as much information as is available before buying a farm. The chart accompanying this report indicates the farm real estate and net farm income curve for the period 1910 to 1944. It gives an indication of present trends in real estate prices and the relations between land prices and net farm income over a long period.

Agricultural Opportunities in the County:

The committee is of the opinion that approximately 10 percent more farm labor can be employed within a community immediately after the war as compared to pre-war employment. This includes farm construction work.

Indications are that between 15 and 20 percent of the farms in the county will be available for rent, or will provide managerial positions. Within the first few years after the war many present owners want and need vacations, some will retire but will retain ownership, and a few are expected to sell outright. The turnover of farm ownership in Union County is considered below the average for the country, although it is expected that some farms now owned by businessmen will be sold after the war.
Statement of Land Values:

Land values depend upon many variable factors: Namely, the type of enterprise, locality, soil types, improvements, etc. The better land improved for general farming normally commands from $85 to $125 an acre, the greater part being held at a price between $100 and $110 an acre. These prices may be compared with top normal land values at $100 per acre (1910-1914) average, top pre-war values at $85 per acre (1935-1939), and top present values at $150 per acre.

An Economic Farm Unit:

In the committee's opinion an economic farm unit should meet the following requirements:

a. Provide for a balanced labor program which will permit full time employment in productive farm work.

b. Provide sufficient income for a reasonable standard of living.

c. Provide a balance of crops which will permit full use of machinery.

d. Provide enough crop land to permit rotation.

Approximate Acreage Required to Make a Unit in a Certain Enterprise:

In this, as with land values, the factors are many and variable. A farming operation must be of sufficient size and productivity to enable an operator of average ability, operating under normal circumstances as to yields and prices, to derive sufficient subsistence and income from it to meet necessary living and operating expenses, and debt obligations.

In 1935 agricultural census shows the average number acres per farm in Union county to be 346.2. This figure has been quite constant since the census of 1920. Since 1900 the census figures indicate that the highest percent of farms ranged in the group of 100 to 260 acres in size. Since 1935 the trend in size has been slightly upward. The 1940 census shows 375 acres per farm.

The examples given in this section are intended to point out the minimum size of farming units required over a long time period, assuming that both land and the operator are average. There may be rare exceptions where operators have succeeded on units smaller than those indicated or have for a short period shown exceptional success. The figures that have been set up are reasonable and represent an approximate minimum necessary to provide a gross income sufficient to pay all expenses such as depreciation, labor, taxes, and production costs, plus debt repayment and cost of servicing the mortgage, and enough net income to maintain an average family on a reasonable American standard of living.

a. Dairying (Where dairying is to provide the primary source of cash income)—10 cows minimum. The operator should have not less than 40 acres of irrigated or 75 acres of good non-irrigated crop land and at least an additional 15 acres of either good crop or non-crop pasture land.

b. Diversified Farming Unit—This type of farm requires a minimum of 175 acres of good average soil, all under cultivation. The livestock, dairy and poultry enterprises along with the production of grain, hay, pasture and small seed crops fit into the diversified farming unit.

c. Grain and Small Seed Farms (On a farm where one or two cows are to be kept but where the income is to be derived primarily from small seeds and grain)—Recommended size 240 acres crop land minimum.
d. **Stock Ranch**—The minimum requirements for 100 head operation should be 1160 acres of which 120 acres would be used for the production of hay and other crops. (Grain 40 acres and 1000 acres for summer pasture.)

e. **Orchard and Small Fruit Farm**—The selection of a suitable and air drainage soil is very important in establishing an orchard and small fruit unit. A minimum of 30 acres in units of 10 acres or less to different varieties is advisable. The practice is recommended in order to spread the labor demand over a longer season.

**Recommendations for Newcomers and Beginners.**

It is recommended that newcomers to Oregon or those inexperienced in farming, who wish to purchase a farm, should rent or work for an established farmer for a period of at least one year before investing their funds in agricultural land. By following this practice, buyers should be more able to obtain farms suited to the type of farming they wish to follow. This practice should prevent losses which frequently occur when buyers are not able to judge and correctly appraise the productive capacity of a farm before it is purchased.

Very little land is available for additional farms in Union County except where such land is found on larger farms which may be subdivided and by replacing people who are now operating farms and who wish to retire or cut down on their activity.

**Equitable Lease:**

The committee is of the opinion that there will be numerous possibilities for father and son, or father and son-in-law farm lease contracts. This should be encouraged where possible. The majority of the lease contracts in the county are crop share at one-third to the landlord. This is a satisfactory arrangement and can be deviated from either way to include a long term contract specifying maintenance of soil fertility through good farming practices, weed control, fence and building upkeep, etc. In all cases a flexible lease contract in writing and filed with the county recorder is advisable.

**Educational and Credit Provisions:**

The committee recommends that so far as possible the returning veteran should avail himself of the educational opportunities being offered from the Veterans Administration. In general, the result in the end will prove to be much more profitable than the value of a $2000 loan for a home, farm or business. The veteran must take advantage of the educational aid program not later than two years after discharge or end of the war, whichever date is later.

**Part-Time Farming:**

There is very little opportunity or place for part-time farming in Union County. Expanded war time industry has created a temporary expansion in this type of farming in the county.

Successful part-time farming or the maintaining of a healthy family living standard on a part-time farm is dependent upon there being sufficient industry in the area to provide employment. In the period before the war the number of people on part-time farms exceeded the requirements of industry and we believe that this development should take place only as industry
develops in sufficient volume to provide regular employment. Generally, the following acreages could help serve as a guide in determining the acreage required for a part-time farm. Approximate acreage of good land required to produce feed and livestock:

a. Twenty-five laying hens and 40 young chickens require 1½ acres of range and grain.

b. One cow requires two acres of pasture and three acres for hay and of grain or a total of five acres.

c. Three pigs for six months require one acre for pasture and 1½ acres of grain, or a total of 2½ acres.

Note: These small acreages of grain and hay are impractical.

The land required for other farming operations will depend upon what the operator plans to raise. Fruits and vegetables for home use will require between one-fourth to one acre of good land. A small flock of chickens may be kept on this plot if one does not plan to raise feed.

Generally one acre of good land would be sufficient for a family on a part-time farm. This would provide space enough for a garden and would permit the keeping of 25 laying hens, 40 chickens and from one to three pigs for meat (all feed to be purchased). Keeping a cow would require an additional acre for pasture (all other feed to be purchased).

Some of the disadvantages of part-time farming follow:

a. It is confining, requiring the presence of someone on the farm every day and, in order to be successful, requires hard physical labor, frequently under unfavorable conditions.

b. The cost of production will be higher, as the price of the land in the first place will likely be higher than equal agricultural land further from town. You will be unable to take advantage of labor-saving machines and usually will have to depend upon custom operators for heavy work such as plowing. The purchase price of a small tractor usually is practically as much as for large ones in full sized farm operations.

c. There are many disappointments and hazards—such as loss of employment, crop disease, insects, drouth, and sickness or loss of livestock.

d. It is more difficult to change jobs if a part-time farm ties you down. The farm may be an additional burden if you lose your job. The opportunities for selling a part-time farm tend to rise and fall with the opportunities for non-farm employment in the same area. Producing as much as possible to eat is not enough for security.

Some of the advantages of part-time farming are:

a. It provides an opportunity for profitable use of spare time.

b. Many people like farm life and farm work and derive pleasure and recreation from it.

c. Living on a farm usually provides a wholesome and healthful environment in which to rear children, although there may be some social handicap.
d. Part-time farming will give you a measure of security if you lose your job, providing you own the place free of debt and your farming operations furnish enough income to meet your fixed expenses and minimum living cost.

It should be pointed out that part-time farming is a way of life and therefore a cooperative venture for your entire family.

Questions which may well be considered by the members of the family before deciding to become part-time farmers are:

a. Do you really want to live in the country?

b. Part-time farming will change your way of life. Are you willing to make the change?

c. Can you adapt yourself to the routine of farm life?

If you understand these requirements of part-time farming and are willing to accept the advantages and disadvantages involved, you will probably be happy and successful in it. If not, you better give up the idea.

Summary

In summarizing the recommendations, we wish to call particular attention of the prospective farmer to the following:

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

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

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

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

The following bulletins are available at the county agent's office and give additional information and data regarding economic farm units in Oregon:

Extension Bulletin 635—"Buying a Farm in Western Oregon."
Station Bulletin 407—"Land Settlement in the Willamette Valley."
Station Bulletin 450—"Part-time Farming in Oregon."
Farm Home Bulletins:

Extension Bulletin 587—"The Farm & Home Vegetable Garden."
Extension Bulletin 616—"Planning Your Family's Food Supply."
Extension Bulletin 596—"Home Food Preservation."
Extension Bulletin 623—"Food Preservation by Freezing."

Extension Circular 416—"Repair of Household Equipment."
Mimeograph H. E. 1064—"Refinishing Furniture."
Extension Bulletin 648—"Renovating Innerspring Cushions."
Extension Bulletin 504—"Farm Kitchen Planning."
Mimeograph H. E. 1547—"Financial Management."

Farm Family Account Book—20c
Oregon Cash Farm Record Book—25c
Oregon Farm Account Book—25c
RECOMMENDATIONS OF THE UNION COUNTY
4-H PLANNING COMMITTEE

UNION COUNTY 4-H GOAL

The 4-H Planning Sub-committee adopted as its over-all goal in the post-war period, "The Ten Guideposts" as recently set up by a national 4-H Club Post-War Planning Committee, appointed by M. L. Wilson, National Director of Extension. The challenge expressed by this committee is as follows:

"Only a great people make a great nation, and tomorrow's world will need not only great leaders, but great followers as well. Great in being equipped to farm our lands properly, work its mines, strengthen our homes, use our money, conserve our resources wisely. And great too in living with others—planning and sharing with others—building communities—guiding our policies toward higher achievements and social betterment for all mankind, and taking part in its fulfillment. All other plans for the future depend on the wisdom of the leadership and understanding by the people. And before there is time for many improvements, the leaders of tomorrow will be those who are the youth today.

"To prepare youth for their place in a more perfect America is the job of education. The 4-H program takes its place with others in helping to carry out the responsibility that education must assume. To serve rural America particularly, but looking to all youth eventually, is the double responsibility of 4-H work."

The committee desires that 4-H work in this county be directed to meet this challenge, especially with regard to development of great leaders and great followers.

THE GUIDEPOSTS

The following guideposts set up by the national committee to prepare tomorrow's citizens physically, mentally, and spiritually for their part in the betterment of living are adopted by the committee as the means of best achieving the Union County 4-H goals:

Developing Talents for Greater Usefulness.

Fifty percent of rural youth leave the rural areas for urban employment. Public welfare demands that these coming to the city bring desirable attitudes, character traits and habits. Furthermore, public policy affecting agriculture is being increasingly influenced by those working in industry, since today only 22 percent of the population is engaged in agriculture.

By providing opportunities for young people to become competent, to achieve and to acquire habits of work and thrift; by helping them become acquainted with research and experimentation; by encouraging them to tackle significant problems, and by affording them opportunities to work, share and play with others, we can influence these young people to develop into desirable and effective personalities, regardless of whether their future homes are in town or country.

Joining With Friends for Work, Fun and Fellowship.

The social conditions existing within a community will have great influence on the kind of agriculture they will have in years ahead. Achieving results on community problems by united action is bound to become more important as time goes by and other industries become more united in their work.

Adequate recreational facilities are also a requirement of real importance to any community.


Large-scale readjustments in agriculture are inevitable in the post-war period. They too will require skilled planning on the part of farmers, and
the wide use of technical information. This will be true not only with the
growing of crops and livestock, but even more so in dealing with the compi-
lcated factors related to the marketing the distribution of the products which
farmers have to sell. Undoubtedly, the agriculture of this nation will have
to make larger changes in the next few years than it has ever made in a com-
parable previous period. A program of youth education is recommended,
which will keep them abreast of changing conditions and enable them to do
their full share, when the time comes, in the nations agricultural planning.

Choosing a Way to Earn a Living.

About 50 percent of farm youth must choose employment in other than
agricultural occupations. This often means that, on the average, when more
than one boy is on the farm the others will need to find occupations off the
farm. The 4-H program can help young people during at least three different
stages in their development:

Before definite choices are made and young people are in an exploratory
frame of mind.

During the period when they are making their decision.

The ones who decide to stay on the farm or in homemaking, between 15
and 21 years of age. This group can be helped in learning the most efficient
ways of farming and homemaking and in deriving the most satisfaction from
rural living.

Producing Food and Fiber for Home and Market.

All farm young people should know the best ways of producing food and
fibre. The realization that science can be made to work by them and applied
by them, even in small units, can itself raise the status of farming as a
worthy occupation in their estimation.

As a method of teaching, the “learn by doing” principle inherent in the
4-H program since its beginning is now established as a basic method in all
teaching. The food production record of 4-H Club members during the war
was most impressive. Now this productive power needs to be directed toward
helping young people learn the best and most efficient skills and knowledge
of production and marketing, helping young people raise the total farm in-
come, raising the nutritional level of farm people, and providing a way for
young people to earn an income of their own.

Creating Better Homes For Better Living.

In 1940 nearly one-third of the total number of rural houses were beyond
repair, another third were in need of repairs and additions, and the remaining
third were in good condition. Of those in good condition, about one-half
could be improved to provide minimum facilities, convenience and enjoyment.

If farm life is to be made as attractive as it can be for young people,
they should have better homes to live in. Many simple and extensive im-
provements can be made by young people, if the desire for betterment has
been stimulated. And by making these themselves, they will develop a
greater interest in their homes. Many farm boys need to learn some building
skills. Rural families can learn how to plan homes to fit their own require-
ments.

4-H Club work has been characterized as a back-to-the-home movement.

Through 4-H, young people can be mobilized to aggressively attack the
problem of rural housing, as a part of the entire program and help make
“better homes for better living” come true for more people.

Conserving Native Resources for Security and Happiness.

The use of the natural resources of America still is largely of the ex-
plorative sort which served usefully when the country was young, but can lead
only to depletion and want if long continued. For a least a generation now
we have seen increasingly frequent and more extensive examples of areas
blighted because the soil was depleted, the timber gone, water lacking or resources put to unsuitable uses.

If agriculture and its associated industries are to prosper, both in the immediate post-war period and in the long-run future, it is necessary to adopt progressive and really effective measures to improve, protect, restore, utilize and maintain the nation's natural resources. The measures need to be in effect permanently, in good times as well as bad.

**Building Health for a Strong America.**

Four and a half million youth, or 40 percent of those examined, were not sound enough for war, and the general statement that farming is much healthier than other occupations may be seriously questioned when we realize that 41 percent of the "rejects" came from rural areas. One-fourth of the farm families in America are using diets which are not adequate to meet their nutritional needs. While most rural youth get a lot of action in terms of work, purposeful type of recreation and exercise are badly needed. Stoop back, round shoulders, flat chest and other physical deficiencies can be corrected by the right kind of exercise.

Health work in 4-H is as old as the program itself. Club work should continue with even greater efforts in this important phase of young peoples development.

**Sharing Responsibilities for Community Improvement.**

A nation's greatness cannot be measured entirely by its material resources, nor does the well-being of people depend alone upon the abundance of things they possess. Any plans for building a better agriculture must include the utmost possible development, and access to good schools, churches, shopping centers, medical facilities and recreational facilities. The development of these institutions is a problem of all rural people, young and old, and 4-H Club work may be expected to do its share in bringing about these plans for better living.

**Serving as Citizens in Maintaining World Peace.**

The desire, need and the importance of world peace is now too obvious to require much description. Youth today have the biggest stake in it. The atomic bomb has demonstrated, if nothing else has, that man must find a new, practical way of life in which he can live with his fellow men. Unless peace can be maintained, our recent victory marks only a pause in the destruction of our way of life.

Before nations can live peacefully among one another, all people everywhere must learn to live and work peacefully with their neighbors. 4-H Club work provides an opportunity to help young people live, work and play together, and learn democracy by living it at home and in the community.

**METHODS IN APPLYING GUIDEPOSTS**

In order to bring into practical application the guideposts and eventually reach the goal of 4-H work in Union County, the following steps are recommended in the club program:

In a recent contact of eligible 4-H members made through the county's schools the assistant county agent and home demonstration agent left self-addressed cards requiring parents signatures of approval with all prospects interested in club work. Less than 30 percent of these cards were returned, showing parents' approval.

This shows a general lack of understanding of the nature of club work by adults. Better parent education on 4-H Club work is recommended, through means of radio, newspapers, participation in club meetings, circular letters, personal contact, service organization, such as Granges, Farm Bureau, and school contact, with the aim of securing more local leaders and educating the parents and public to the value of the 4-H Club program.
A well-rounded program of 4-H Club work should be developed, to include livestock, crops and Home Economics projects. The committee recommends that the Union County 4-H Club program be kept in agreement with the recommendations of the county over-all agricultural planning committee.

In recent years many club members, who were deficient in their project work or who had dropped it altogether, have been awarded summer school scholarships, and attended the school. The Local Leaders Association should appoint a 4-H committee to set up standards for selection of 4-H summer school scholarship winners.

In the general shift of population brought about by war the many experienced local leaders have left, and are replaced by new leaders. A country-wide training school for all Union County 4-H Club leaders should be held, to acquaint them with leader responsibilities and to discuss current problems in leadership. The number of these schools held each year should be determined as the need arises.

Activity of the Union County Local Leaders' Association has been very little the past three years, because of changing conditions. The association should be restored to an active basis, and Local Leaders should be given proper recognition for their years of service.

The 4-H Club enrollment in Union County the past three years has averaged 900 members. It is recommended that all boys and girls who are really interested be given an opportunity to enter club work. It is also recommended that a full-time 4-H Club agent be employed in the county to properly handle the club work now existing and to conduct a program of 4-H education which will bring about an increase in voluntary enrollment throughout the county.
REPORT AND RECOMMENDATIONS
FARM HOME AND RURAL LIFE COMMITTEE

Introduction
Wartime living made great demands upon our people especially farm families. The farm families attempted to gear their living to a program of all-out production, conservation, and commodity shortages. Now adjustments to peacetime living are necessary. What lies ahead? How can farm families best meet the problems of this changing world within Union County? Because of these questions and others, the Farm Home and Rural Life Committee met and prepared this report.

The purpose of the Farm Home and Rural Life Committee of Union County Farm Program Planning Conference of 1946 is as follows:
To study and analyze national, county, community, and local conditions affecting Union County farm homes in a post-war era.
To draw up recommendations for a long-time program, planned for the betterment of Union County farm homes and communities.

The committee hopes that through the study, analysis of Union County farm families' problems, and the recommendations that:
Local community and county home problems will be better understood.
Union County farm families will be assisted in planning adequate housing for comfort.
Union County farm families will be assisted in planning adequate food supply and a nutritionally adequate diet for their family the year round.
Union County farm families will be assisted in planning and working together for a well-rounded, finer home life and a more cooperative community life.
Union County farm families will be assisted in consumer education in foods clothing, and housing materials.

Family life is the basic social institution of the nation. The American farm home offers the best opportunity for the conservation of American civilization and culture. To that end we urge serious study and consideration of the problems involved and a wholehearted desire to eliminate the objectionable features of rural family living, which tend to reduce the ideal and practical, as well as the desirable standard of living. The committee has studied five subjects which have a direct affect upon rural home life, housing, community and family life, foods and nutrition, clothing, and Economic Situation.

Report on Housing
Union County Housing Date—1940 Census

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<th>Rural Non-Farms</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td>4,561</td>
<td>659</td>
<td>1,383</td>
<td>2,519</td>
</tr>
<tr>
<td>Percent with electric light</td>
<td>81.0</td>
<td>45.4</td>
<td>87.0</td>
<td>97.3</td>
</tr>
<tr>
<td>Gas</td>
<td>83</td>
<td>71</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Kerosene or gasoline</td>
<td>965</td>
<td>708</td>
<td>191</td>
<td>66</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
<td>14</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Not reporting</td>
<td>113</td>
<td>30</td>
<td>27</td>
<td>56</td>
</tr>
</tbody>
</table>
### SUMMARY OF FACTS, FIGURES, AND FINDINGS:

The 1940 census on Housing shows that only 45.4 percent of the rural farms have electric lights, while 87 percent of rural non-farms and 97.3 percent of the city homes have electrification systems. Of the 1,482 rural farm dwellings in Union County, 670 or 45.2 percent have running water in their dwelling units, 420 have no running water, 84 have no water supply within 50 feet, 103 have running water within 50 feet, and 254 have a hand pump in the dwelling unit.

Of the 1,482 rural farm families, only 426 or 21.9 percent have a flush toilet within the structure, while 1,005 have an outside toilet or privy. Only 477 rural farm families have the exclusive use of a bath tub or shower, while 976 have neither bath tub nor shower.

Of the 1,482 rural farms, 844 are reported not needing major repair, while 581 are in the need of major repair. Of the 1,616 rural non-farm homes, 1,081 did not need major repair in 1940, while 426 did need major repair.

### RECOMMENDATIONS:

The Farm Home and Rural Life Committee in making this 1946 report realizes most keenly the need for a long-time program in housing improvement. The members wish to emphasize their particular desire for five special improvement programs:

- A complete rural electrification program; the installation of complete water systems and adequate sanitary facilities; remodeling, or building farm homes as the individual need arises; labor saving construction, arrangement, and equipment; and, the installation of more telephones in the rural areas of Union County.

### COMPLETE RURAL ELECTRIFICATION PROGRAM:

The committee wishes to emphasize its recommendation for a complete program of rural electrification, to be of first and prime importance for Union
County rural families. Electricity in turn to provide: (a) adequate lighting facilities, (b) installation of electric equipment to provide hot and cold running water and other labor-saving devices, (c) mechanical refrigeration, wherever possible, as a labor saver and to conserve food and health of the family, (d) a home-freezing locker of type best suited to individual family needs. Before building and installing, the committee recommends a comparative study of cost, efficiency, and type of home-freezer locker units.

As a first choice. The committee believes that a walk-in-box home-freezing locker can best serve the needs of the farm and rural family, since the present mileage from the farm to commercial lockers is too great.

As a second choice. A home-freezing locker of cabinet type to contain a weekly storage of frozen food in addition to a frozen food locker at the nearest commercial plant.

INSTALLATION OF COMPLETE WATER SYSTEMS AND ADEQUATE SANITATION FACILITIES.

The committee recommends installation of complete water systems to include hot and cold running water; bathrooms and complete bathroom fixtures to include the installation of lavatory, flush toilets, shower or bathtub or both; and septic tanks.

REMODELING OR BUILDING OF FARM HOMES AS THE INDIVIDUAL NEED ARISES.

The committee wishes to recommend that Union County farm families:

Seek help, study carefully, and gain accurate information through their Home Demonstration Agent and others, before remodeling or construction begins, on (1) suitable cabinet built-ins and remodeling possibilities of their homes, (2) suitable house plans adaptable to individual needs through the Oregon State College Farm Building Plan Service and other sources, (3) the various heating and insulation systems best suited to the family's needs and means, and (4) consumer education on housing materials.

Realize the fact that the more a family uses its own resources of personal labor and supplies in remodeling or building a home, the less the cost of that home.

Realize that in another year or two, it is possible materials will be more available at a reasonable cost to do major remodeling or building of homes; therefore, it is suggested that families make their plans now but not rush into the actual building too quickly.

LABOR SAVING CONSTRUCTION, ARRANGEMENT, AND EQUIPMENT:

The committee wishes to recommend for the farm family, careful study of the use of labor-saving devices and labor saving methods in the home, when planning remodeling, building, or in every-day practices within the home.

THE INSTALLATION OF MORE TELEPHONES IN THE RURAL AREAS OF UNION COUNTY:

We recommend a telephone for every farm family, where possible, as a labor saving device, as a means of making easier an exchange of surplus farm products between families, and for use in emergency situations.
COMMUNITY AND FAMILY LIFE

The committee felt that this subject is very demanding of attention and yet the most intangible. From a fair representation of all parts of Union County, the committee found upon discussion that recreational facilities in the various communities were inadequate, adult leaders for various youth groups were lacking, and that the average community and home were not taking advantage of religious opportunities.

RECOMMENDATIONS:

The committee realizes the value of proper religious emphasis and wholesome entertainment in family life and a pleasant relationship between members of the family. It recommends as follows:

A county-wide inexpensive and wholesome recreational program for its youth and adults to consist of, a community recreational center for youth and adults, adequate recreation within the home, suitable to the individual family, and adequate recreational facilities in rural homes for fun-gatherings of children and friends.

More religious emphasis both in the home and on the part of the community to consist of religious training in the home and a Union Community Sunday School for youth.

An intensive educational program to inform the communities about the urgent need for adult leaders to supervise recreational centers, Sunday Schools, and youth and adult groups.

Regular training meetings for leaders of all organizations be held in the field of community recreation.

Organized groups for young mothers, in which their specific problems of child development and family relationships can be discussed.

FOODS AND NUTRITION

Successful home life, efficiency in work, and happy social relations and attitudes are influenced not only by social economics and modern conveniences, but also to a great degree by the physical condition and health of individual members of the family. A large percentage of illness coming to men and women in maturity can be prevented by practicing good nutrition throughout a lifetime. Experimental evidences reveals that many middle-age illnesses, caused by poor nutrition, can be completely relieved or much improved by introducing and maintaining the individual on an adequate diet.

The maintenance of the family's health and normal growth of the children depends largely upon an adequate amount of food and a nutritionally adequate diet. In Union County there are five schools benefiting from the hot school lunch program. All are receiving government assistance.

Statistics show that 58.3 percent of the farm family living is furnished by the farm where gardens are grown. This amounts to $248.20 per family at prewar prices. Such a practice seems desirable to continue.

RECOMMENDATIONS:

The committee recommends an adequate food supply and nutritionally adequate diet for every member of the farm family, the year round. This can best be accomplished by:

Teaching the fundamentals of adequate dietary human needs, and acquainting homemakers with the latest developments in the field of foods and nutrition.

Encouraging farm families of Union County to produce an adequate amount of fruits and vegetables for family needs in growing home gardens where possible.
Carefully preserving surplus home food supplies by preservation of all non-acid foods, such as vegetables, (except tomatoes) meats, fish and other seafood, in a pressure cooker, or by freezing or drying and preservation of all fruits by the hot water bath method or by freezing or drying.

Providing a more available outlet for the home-grown surplus food supply through the hot school lunch program and exchange of surplus food by families.

Recognizing the value of the hot school lunch program and encouraging the communities, wherever possible, to establish the hot school lunch program.

Recognize the value of and encouraging good management in menu planning, for the hot school lunch program.

In concluding the recommendation for food and nutrition, the committee recognizes the need for, and recommends consumer education concerning grading and labeling of fresh, canned and frozen foods.

CLOTHING

Families have found it difficult to obtain adequate clothing during the war period especially children's clothing. Many women have turned to home sewing as an answer to this need. Scientific research has placed many synthetic fabrics on the market and will continue to offer more. Women know little of their use, care and selection, and need advise to help keep the family well clothed.

RECOMMENDATIONS:

To make this information available from time to time, the committee recommends an extensive and widespread educational program concerning new materials and sewing procedures to be best accomplished by extension meetings, radio and news letters. Homemakers then may select materials wisely and have access to the newest procedures in home sewing.

ECONOMIC SITUATION

The committee recognizes the importance of a systematic budgeting of the farm family income and the family's living within its budget.

RECOMMENDATIONS:

The committee recommends the systematic keeping of daily farm records and the budgeting of the farm family income.

CONCLUSION

These recommendations are made by the Committee on Farm Home and Rural Life after careful consideration and analysis of conditions existing in Union County. The recommendations were made with the idea that several years will be necessary to carry them out, and that it is advisable to begin making improvements as soon as possible so that some changes may be noted in four or five years' time. The ultimate purpose and design in making these recommendations is to make the farm home a happier, healthier and more convenient place in which to live. By so improving conditions on the farm, the standard of living will be raised for the entire community or district.
SOUTH-40 CLUB
A Young Farmers Organization for the study of economics, technical and social problems in Agriculture.
We Stand For Progressive Agriculture

American Farm Bureau Federation of Union County
Our 1950 National Goal 1,500,000 members in the Farm Bureau.
"Agriculture's Team Needs More Power, Are You a Member?"
"Economic Stability For Agriculture"

4-H Club Work

1. Developing talents for greater usefulness.
2. Joining with friends for work, fun and fellowship.
3. Learning to live in a changing world.
4. Choosing a way to earn a living.
5. Producing food and fiber for home and market.
6. Creating better homes for better living.
7. Conserving native resources for security and happiness.
8. Building health for a strong America.
9. Sharing responsibilities for community improvement.
10. Serving as citizens in maintaining world peace.