OREGON AGRICULTURE 15

HORTICULTURE

An Appraisal of the Problems and a Statement of Recommendations

One of 12 committee reports prepared by representative producers in cooperation with staff members of Oregon State College and other agencies. Adopted at the statewide agricultural conference March 27-29, 1952.

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Foreword

A State Agricultural Conference was held at Oregon State College on March 27, 28, and 29, 1952, at which reports of 12 major committees were discussed and approved at public forum sessions. This publication contains the report of one of those 12 committees. Reports of the 12 committees are to be issued in the following publications:

Agricultural Relations	Oregon Agriculture 10
Dairy	Oregon Agriculture 11
Farm Crops	Oregon Agriculture 12
Farm Forestry	Oregon Agriculture 13
Fur Farming	Oregon Agriculture 14
Horticulture	Oregon Agriculture 15
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The purpose of this state-wide conference was to take stock of the present situation in the agriculture and rural life of the state and to indicate probable trends and desirable developments over a period of years ahead. Members of the 12 committees were private citizens who were invited by the Extension Service to participate in this activity and who willingly donated their time and paid their own expenses to take part in a series of committee meetings during the year preceding the conference. It is felt that these reports contain the considered judgment of a representative group of citizens who carefully studied available facts in arriving at the recommendations presented. They are being published by Oregon State College as a public service for use by individuals and groups who may wish to consider these facts in planning their own future activities.

Statistical data have been checked by Extension Specialists in Agricultural Economics Information and are based on the most recent available reports of the U. S. Department of Agriculture, U. S. Department of Commerce and other sources deemed reliable.

F. L. Ballard
Associate Director

Summary

During the past year, 50 committeemen from various districts of Oregon have been consulting with their neighbors, processors, and others to chart a course for fruit and nut production in the state. The findings of this committee are set down in the following report.

The value of farm marketings plus the value added by primary manufacture of farm produce in Oregon for 1947 amounted to $493,758,000. Out of this vast sum, the value of fruit, nuts, vegetable crops, and horticultural specialty crops totaled $114,552,000 or about 23.2 per cent.

The Committee recognizes the value of this industry to the economy of Oregon and its views are broad, reflecting this fact.

In general, it recommends that present acreage of tree fruits, nuts, and berries be maintained.

The opportunity for maintaining or expanding this industry depends upon net returns.

There is plenty of land available for expanded acreage. Therefore, efficient application of the practical "know-how" is fundamental to progress with these crops; and, consequently, the continual search for new and improved methods is evident.

Keep production costs and distribution costs as low as possible consistent with good business. High yield is one of the very best ways to cut cost of production per ton.

Poor orchards increase the surplus of low quality fruit in the "on years" resulting in little profit, often a financial loss, to the owner and a handicap to owners of good orchards.

For good high yielding orchards growers should choose best well-drained soils, avoid frost locations, plant adaptable and marketable varieties, provide good pollination, and control pests.

Growers should harvest, handle, and deliver crops in best possible conditions to reduce cullage.

Consumer demand can be created through high quality packs, correctly graded and labeled.

Continued research is needed for new, improved products, new varieties, new packages, improved pest control, and efficient use of fertilizer and cover crops.

Best methods known for soil erosion control should be used.

Machinery and piece work will save labor.

Young orchards should be kept coming along to replace old ones and to maintain best quality fruits.

Growers should reduce indebtedness and maintain reserves.

Imports or a threatening import or curtailment of export demoralizes the market. So far as practical a consistent long-range policy should be established on these matters and any policy changes be anticipated as far in advance as possible and publicized.

Horticultural Committee Report

1952 Oregon Agricultural Conference

March 27-28-29, Corvallis, Oregon

THE history of horticultural farm enterprises across this nation shows that the success or failure of these often hinges on a single inconspicuous factor. The key to success can be the choice of the right variety or the right rootstock, the finding of a new control for a pest, or the right method of handling the crop. Conversely, cases can be cited where the reason for the failure of the horticulture of a whole district was due to the outbreak of a new insect pest or disease or to the inadequate methods of handling the crop. For specific examples of failures without mentioning districts, one might cite codling moth of apples; fire blight of pears; improper kiln drying of sweet potatoes; rain splashed sand on fresh market strawberries; lack of irrigation water; or any one of many other causes.

The amount of land in the United States, and in Oregon for that matter, suitable for the production of horticultural crops far exceeds the present market outlet for the potential production therefrom. Since there is plenty of land for these crops, it is plain that successful horticultural enterprises are based on very specialized operations, right decisions, economic factors, best locations, and alertness of the producers and industry representatives.

Value of Horticulture to Oregon

The value of farm marketings plus the value added by primary manufacture of the produce in Oregon for 1947 amounted to $493,758,000. Out of this vast sum, the value of fruit, nut, vegetable crops, and horticultural specialty crops totaled $114,552,000 or about 23.2 per cent.

During the years from 1925 to 1949, the average percentages of the total farm marketing credited to tree fruits, nuts and berries only, and not including the processing, show a range by five-year periods from 10 per cent to 14 per cent. In other words, the tree fruits, nuts and berries sold from Oregon farms have made up about 13 per cent of all farm sales throughout the past twenty-five years.

A very important fact about these figures is that horticultural crops are mostly exported from Oregon bringing back to this state a big sum of money for distribution among its people. This is "new money," not money trading among ourselves. A large number of families obtain a major portion of their livelihood in the harvesting, packing, processing and transportation of the horticultural crops of Oregon. It is the out-of-state sale of the surplus production above our needs that adds to the cash balance with which the people of Oregon buy the things they do not produce in this state.

In view of the important position of these crops in the Oregon economy, it is an obligation of all of us living in the state to take a booster's interest in the success of the horticultural industry of this region. Even further, the potential sales here of goods manufactured in eastern states is to a large extent dependent upon the success of Oregon horticultural crops.

Tree Fruit and Nut Production Trends

The population of Oregon from 1920 to 1940 made up slightly less than one per cent of the nation's population. It now has about one per cent of the people. It is evident then that whenever Oregon production of any fruit or nut crop exceeds one or two per cent of the national output it is then necessary to find a market for it outside of the state.

"In general, trends in Oregon fruit production during the last 25 or 30 years have been in the same direction as trends in the nation. However, no matter which way the change in production of a particular kind has been, Oregon has usually gone further and faster than the country as a whole. If the trend has been up, Oregon has usually gone higher than the rest of the country. Where the trend has been downward, Oregon has made the adjustment faster.

"In studying production trends of tree fruits and nuts, it should be remembered that changes in production lag behind changes in acreage. Production continues to increase for some time after expansion of plantings has ceased. Likewise, production may decline for several years after the unfavorable circumstances that started the downward trend have been relieved. It takes time for changes in plantings to appear as changes in production."

The total acreage of tree fruits and nuts in Oregon has shown some decrease since 1920. Most of the decrease came in apple and prune acreages. It was offset some by the increase in filberts, walnuts, sweet cherries and pears. The comparative figures are shown in Table I.

Table 1. TREE FRUITS AND NUTS: ESTIMATES OF TOTAL ACREAGE, BY KINDS

(Oregon, 1920-1948)

Kind	1920	1930	1940	1948
	Acres	*Acres*	*Acres*	*Acres*
Apples	66,700	31,000	17,300	13,000
Cherries	7,900	13,100	14,700	15,500
Peaches	5,400	4,300	6,100	8,600
Pears	13,600	21,000	19,200	19,500
Prunes and plums	43,700	56,800	37,500	29,200
Filberts	300	4,900	12,200	23,300
Walnuts	7,700	21,600	24,100	25,000
Total[1]	145,300	152,700	131,100	134,100

[1]Other tree fruits and nuts totaled 1,200 acres in 1940 and 1,300 acres in 1948. Data earlier than 1940 are not available.

APPLES. Apple acreage in Oregon has continued a steady reduction for about forty years. The estimated acreage for 1948 was 13,000 compared with 66,700 in 1920. The greatest reduction came in the 1920's, proportionately much less in the 1940's. The eastern markets are still the important outlet for this crop; however, Los Angeles, San Diego and certain other western markets have used more apples of recent years.

CHERRIES. The acreage of cherries is now about double what it was in 1920 with most of the increase between 1920 and 1930.

PEACHES. The acreage of peaches has doubled since 1930. Most of this occurred in Jackson County and the Willamette Valley. The Jackson County crop goes mostly to fresh markets in California and other out-of-state points, while the Willamette Valley crop is for local use and to processors.

PEARS. The acreage in 1948 had increased about 4,000 acres since 1910 but was about 1,500 under the high of 21,000 in 1930. The far eastern states are the principal market outlets for this crop although the crop is widely distributed all over the country.

PRUNES. The prune acreage built up from 22,200 in 1910 to a peak of 56,800 in 1930, which was followed by a very sharp drop down to 29,200 in 1948; and the decrease has continued to the present date. Most of the decrease came in the Umpqua and Willamette Valleys. However, the 2,400 acres in 1948 in the Milton-Freewater area, which is a fresh-market shipping area, were greater than they were in 1930. Most of the western Oregon prune orchards are past their peak in production and this with low prices and few new plantings have combined to reduce the acreage.

FILBERTS. Filbert acreage has jumped to more than 23,000 acres in 1948, there being only about 300 acres in 1920. This is a comparatively new industry. During the past five or six years, lower prices and some winter damage have tended to bring the acreage to a standstill. Production is expected to increase, however, because of the younger plantings coming into bearing. Leading counties are Washington, Yamhill, Lane, Marion and Clackamas. In 1949 about 87 per cent of all the commercial filbert trees in the United States were in Oregon with the remainder in western Washington. Large quantities of filberts are produced in the Mediterranean area. Shelled filberts from that area shipped to U. S. markets following the war created stiff competition for the Pacific crop.

WALNUTS. Since 1930 the acreage of walnuts has increased by about 3,000 acres to a total of 25,000 in 1948. This is a little more than 3 times what it was in 1920. Black-line is now a serious problem and few new plantings have been made recently. Present indications are that this trouble will further reduce the acreage.

MISCELLANEOUS TREE FRUITS. In 1948 there were reported about 1,300 acres of other miscellaneous tree fruits and nuts such as apricots, quince, chestnuts, etc. The bulk of the miscellaneous acreage is accounted for with 1,100 acres of apricots, mostly in Wasco County.

For more details concerning state and county estimates of acreage, production, price, and income from 1910 to 1949 for tree fruits and nuts, see Oregon State College Extension Service Bulletin 700, published March 1950. For national trend compared with Oregon in the past 25 years, see O. S. C. Extension Service mimeograph pamphlet, *Tree Fruit and Nut Crops in Oregon and the Nation,* by M. D. Thomas, Extension Agricultural Economist.

Small Fruits Acreage and Production Trends

Comparative acreages of the more important small fruits in Oregon are shown in Table II. The first acreage figure in the table for each kind of berry represents a four-year average for the years 1936 to 1939 inclusive; the next figure for the five years 1940 to 1944, and the last one is the preliminary figure for the single year of 1949. The seasonal prices shown are for corresponding periods.

The average cash receipts from farm marketings of small fruits in Oregon during the period 1945 to 1949 averaged more than $11,000,000. This sum was more than three times the pre-war sales. The 1949 evaluation was approximately $10,000,000. About 90 per cent of the small fruits production is in the Willamette Valley. Most

Table 2. Small Fruits, Oregon: Acreage and Price

Crop and year	Area harvested	Seasonal average price per pound
	Acres	*Cents*
Strawberries		
1936-1939 average	11,450	6.8
1940-1944 average	10,140	10.4
1949p	14,000	15.1
Red raspberries		
1936-1939 average	3,010	6.8
1940-1944 average	2,440	12.4
1949p	2,450	14.8r
Black raspberries		
1936-1939 average	1,620	6.7
1940-1944 average	2,640	10.5
1949p	3,600	19.4r
Loganberries		
1936-1939 average	2,120	4.1
1940-1944 average	1,480	8.1
1949p	1,000	7.6r
Boysen and Youngberries		
1936-1939 average	1,720	4.7
1940-1944 average	2,680	8.4
1949p	3,200	7.4r
Tame blackberries		
1936-1939 average	790	3.8
1940-1944 average	760	8.5
1949p	1,150	9.0
Gooseberries		
1936-1939 average	320	4.3
1940-1944 average	530	6.4
1949p	400	7.0
Cranberries		
1936-1939 average	140	11.8
1940-1944 average	150	14.9
1949p	320	7.7r
Grapes		
1936-1939 average	730	1.6
1940-1944 average	690	3.0
1949p	800	3.4
		Cash receipts from farm marketings
All small fruits		
1936-1939 average	22,330	$ 3,402,000
1940-1944 average	21,545	5,370,000
1945-1949p average	22,255	11,313,000
1949p	27,025	9,970,000

r Revised.
p Preliminary.

of it is sold for processing. The leading counties are Clackamas, Marion, Washington and Multnomah. In 1949 Coos County had three-fourths of the cranberry acreage.

STRAWBERRIES. More than half of the total income from small fruits grown in Oregon originates with strawberries, as did half the acreage. Nearly all of the strawberry crop is handled by processors. Strawberry acreage dropped sharply during World War II but has come back to higher than pre-war levels.

RED RASPBERRIES. The acreage of this crop has declined since the 1936-39 average of about 3,000 acres down to 2,450.

BLACK RASPBERRIES. Black raspberry acreage has shown a trend just the opposite from red raspberries, having increased from 1,620 acres for the 1936-39 average to 3,600 for 1949. Cash receipts have also increased steadily to a high slightly more than $1,000,000 for each of the years, 1948 and 1949.

LOGANBERRIES. Acreage of this crop showed a sharp drop to nearly half in the early 1940's or about 1,000 acres for the past several years.

BOYSEN AND YOUNGBERRIES. The total acreage of these two berries has shown a steady increase since 1936 from less than 2,000 acres up to 3,200 in 1949. The Boysen is much the more important with the bulk of the acreage devoted to it. Winter injury, frost, and low prices have reduced this acreage recently.

TAME BLACKBERRIES. Beginning with 1947 the acreage of tame berries has been above 1,000 increasing to that figure from the 1936-39 average of 790 acres. In the five-year period following 1945, the cash receipts for this crop hit above half a million dollars yearly and in 1946 it was a little above $1,000,000.

GOOSEBERRIES. During the war years, the gooseberry acreage climbed from about 300 to over 700 acres, then began to drop in 1948 to 400 acres in 1949. Nearly half the acreage was in one county, Marion.

CRANBERRIES. This crop has maintained a steady increase since 1936 from around 140 to 320 acres in 1949. Coastal counties carry the acreage of this crop with three-fourths of it being in Coos County and about 15 per cent in Clatsop County and the rest in nearby counties. Most of the increases in acreage have come in Coos County. The favorable price in the 1946-47 period stimulated increased plantings.

GRAPES. The plantings of grapes have remained steady at around 700 acres during the past fifteen or twenty years. Some California types are grown in the Grants Pass area. Eastern type

grapes are grown in counties near Portland. Recently a few acres of the Concord variety have been planted in northern Umatilla and Morrow Counties.

For those interested in more detailed statistics of production, prices, incomes and county acreages of small fruits, the Committee would like to refer them to Oregon State College Extension Bulletin 710 published in August 1950.

Committee Recommendations*

TREE FRUITS

Apples

1. Maintain close to present commercial acreage.
2. Further reduce non-commercial acreage.
3. Make increased planting of good varieties only on a specialty basis, where the orchard will be properly cared for and is close enough to a big population area so that they will be consumed close to where they are grown.
4. Storage decay problems constitute one of the limiting factors in accomplishing satisfactory marketing and grower return of the packed apple crop. More attention should be given to the study and control of the diseases involved.
5. Twenty acres of tree fruits are recommended as a minimum economic unit.

Pears

1. Maintain a conservative attitude toward expansion.
2. Northwest canneries use a large percentage of Bartlett pears.
3. It is estimated that the pear-growing districts may plant and graft a substantial acreage of Red Bartletts for fresh shipment. This could reduce the volume of the standard Bartletts shipped from this district and thereby increase the total available for canneries.
4. The future for winter pears is less clear than for Bartlett pears.
5. The number one fact of life on winter pears seems to be the loss of the export market and importation of foreign pears.
6. During the war years the domestic market absorbed domestic production to good advantage, but the domestic market has been erratic since then.

* Note: See General Recommendations later in this report for general suggestions that cut across most of these crops.

7. The consumer-acceptance price limit and the proper conditioning of winter pears are the big factors pear growers have been operating under.

8. Oregon growers should keep up the present production of Anjou, Bosc, and Comice varieties in the best growing districts by limited new plantings in favorable localities. Special varieties such as Seckel and P. Barry probably should be maintained, but may be superseded by newer varieties.

9. World production of pears rose from about 100 million bushels in 1930 to an average of about 175 million bushels in 1949, 1950, and 1951. In the United States production of all pears has risen only slightly in this time.

Prunes (Western Oregon)

1. Recommend maintenance of present acreage of approximately 25,000 acres.

2. There is a limited market for dried Italian prunes of good quality.

3. Canneries require approximately 30,000 tons per year. Adequate acreages required to supply this tonnage in years of low yields. In years of heavier crops, surplus may be dried where drier capacity is available.

4. An estimated 55 per cent or more of prune acreage is 30 years old or older. Replacement age for prune trees should generally begin at about this age.

5. Only virus-indexed trees of the Italian variety are recommended for new plantings.

6. There are too many marginal orchards that throw a burden on the better growers in years of heavy production. We recommend their removal.

7. Construction of new prune driers not recommended; however, we believe present driers should be maintained.

8. Mechanical harvesting equipment appears to be the best solution to the labor problem. Continued research for improved machines suggested. Caution advised in using mechanical equipment. Must harvest fruit at proper stages of development to insure highest quality.

9. The Committee believes continued effort should be made to improve the quality and size of fruit by better pruning, spraying or dusting, tree removal in overcrowded orchards, better methods of harvesting, and better cultural practices such as fertilization and irrigation. However, we suggest continued experimental work for both fertilization and irrigation of prune orchards.

10. There is a need for a hormone spray to hold fruit on trees in connection with mechanical harvesting.

11. Consideration of the development of a sales-promotion and education campaign for the Northwest including Washington and Idaho is suggested. It should be similar to, or in cooperation with, the Washington State Fruit Commission.

12. Continued emphasis on search for new prune products necessary.

13. The Committee believes moderate new planting should be done to maintain acreage. This will have a favorable influence upon regularity of production as well as improve the quality of fruit. However, we believe growers should carefully consider the market outlets for cannery prunes and also the availability of adequate drier space for processing in those years when production is heavy.

14. The Committee does not recommend prunes alone as a farm enterprise in Oregon. However, a tract of 10 acres or more, where equipment is available for other enterprise or on a cooperative basis with neighbors, can be profitable.

Note: See general horticultural recommendations.

Prunes (Milton-Freewater District)

1. In the fresh market prune shipping district around Milton-Freewater, the Committee recommends at present that prune plantings be made only on soils of the Yakima cobbly and Yakima gravelly soils types.

2. Consideration must be given to the utilization of the late-maturing acreage of the district for processing.

3. The Committee believes that the profitable productive life of Italian prunes in the Milton-Freewater conditions to be thirty years. In general, orchards over that age should be removed. Growers should seek an average yield of 8 to 15 tons per acre to stay in business under current conditions.

4. The Committee recommends that prune growers of the Milton-Freewater district review the long-time market outlet before making extensive plantings.

5. In general the standard Italian prune is the best variety for this district.

6. Plant only virus-indexed trees.

7. Harvest labor is absolutely necessary for picking and packing prunes of this district. We recommend that grower organizations continue their cooperation with labor recruitment agencies.

8. Emphasize research programs to develop new products such as fresh frozen prune concentrates for juice, and also research on freezing and canning.

9. Fruit growers of the Milton-Freewater district must maintain and improve the quality of their product if this area is to continue in the business. In order to accomplish this goal it will be necessary to have a well-planned research program. Therefore, the work of the Milton-Freewater experimental area must be continued. It is estimated that the orchardists of the Milton-Freewater district have been saved at least 135,000 dollars due to the research which has been conducted in this area.

10. Continue the research work on insect and disease control and management practices.

Cherries

1. Enough new plantings should be made to replace the old orchards in order to maintain the present production.

2. Imports, large plantings in Michigan, and our general economic condition all help to determine the volume of cherries Oregon should produce.

3. Even though the cherry market is not firm at the present time, it does not indicate that acreage should be decreased.

4. The Royal Ann has been the leading variety and will probably continue to hold that position as it is suited to both canning and brining. The dark varieties such as Bing and Lambert are excellent canning varieties, but they are more susceptible to "cherry crack" causing decreased interest in them in western Oregon.

5. The work already accomplished in obtaining virus-free stock has been a great help to the future of the cherry industry. This work should be continued and an up-to-date catalogue maintained on sources of virus-free trees from which scion wood can be obtanied.

6. Most Oregon fruit tree nurserymen now have virus-indexed trees. Use only the virus-indexed scion wood for establishing cherry orchards.

7. Every effort should be made to prevent the spread of "Little Cherry" and any known destructive virus disease to the disease-free areas.

8. Cherry fruit fly must be kept to the lowest possible point.

9. A method to control cherry splitting is needed.

10. The sour cherry is a canned or frozen product and will have to not exceed that which can be consumed on the Pacific Coast on account of eastern competition. Increased acreage should be confined to areas where there are canning or freezing plants.

Peaches

1. Maintain sufficient acreage for local fresh fruit market.

2. Limited trials of the new improved early varieties for local markets seem justified.

3. For most locations in western Oregon the risk is great to depend on peaches alone for a main money crop.

4. Piece work harvest usually decreases the number of workers required and therefore it is suggested where possible.

5. In years when a large crop is in prospect, the large growers should explore the possibilities of setting aside a portion of their crop for processors rather than waiting until mid-harvest and then attempting to deliver the lower grade surplus to the processors.

6. The Improved Elberta still leads as the principal variety in the Willamette Valley.

7. Some local fresh markets accept Rochester, Early Crawford, and others.

8. J. H. Hale is recommended for the Medford area but not the Willamette Valley.

9. The Fertile Hale and other off-type Hales are not recommended for the Medford area.

SMALL FRUITS

Strawberries

1. If Oregon can lower its production costs by better and cheaper methods of weed control, obtain better planting stock, and increase yield it will hold its own in the strawberry field.

2. From the grower's standpoint, fertility, soil selection, and adequate soil moisture should be prime factors in considering starting or maintaining a small fruit venture.

3. A second prime consideration would be selection of a sound marketing program, either cooperatively or with private industry.

4. Production for fresh fruit sales, while increasing, is still limited.

5. The frozen fruit market, along with berry preserves and jams, is steadily increasing, but is held down by high prices.

6. The Marshall variety is still the leading variety.

7. In the field of concentrates such as juice, the possibilities for any sizeable market are an unknown quantity.

8. To continue strawberry production on any farm a rotation is recommended so that not more than one-third of all crop land be

used for strawberry production at any one time, exclusive of land in permanent crops such as orchard, cane fruit, etc.

9. The problem then is what crop can be used in a rotation to maintain our soil on an equal or higher level of productivity. Most producers are not satisfied with the fall-seeded cover crop for this purpose. A continuous cover crop program throughout the years intervening between strawberry crops may accomplish the purpose but with little or no cash returns to the grower.

A pasture livestock program, a grass seed crop program, or a grain legume program with straw residues and cover crops, all with adequate fertilizers, show promise now and in the future to best suit the needs of a soil-building rotation crop with strawberries.

10. The Committee believes irrigation will continue to play an increasingly major role in small fruit production.

11. The Committee believes in a state-wide group to develop a program in advertising and education developing grade and label requirements and advise on needed research.

12. If growing the Marshall variety is to be continued in the main producing areas, a control program for strawberry aphis should be in operation at the same time indexed disease-free planting stock is made available to fruit growers.

13. A second alternative is to rapidly develop and completely test new varieties of strawberries which are tolerant or resistant to virus diseases. The Committee recommends the addition of a research horticulturist by the State College to work on basic horticultural research on berry crops.

14. Research and demonstrations are needed on ridging strawberries for better drainage, spacing, number of strawberry plants per acre, and contour planting.

Other berries

1. In general the needs of these crops are much the same as with strawberries; that is, soil conservation, establish plantings only on best suited soils, maintain high quality packs, and insect and disease control.

2. Acreage of red raspberries needs to be increased on well-drained soils properly conditioned.

3. A slight increase in the blackberry acreage might be justified paralleled to population increases.

4. Boysen, Logan, and Youngberries vary in demand and production under Oregon conditions. They are subject to winter injury with yields showing great variation. High cost of establishing fields with doubtful life makes these a less profitable crop than other trailing berries.

5. Some expansion in the cranberry acreage by established growers is expected in the next ten years. Established research facilities should include cranberries in their research program, covering fertilizer, irrigation, insect and weed control, and plant diseases, as security insurance for the future of the new industry.

6. The present outlook for gooseberries and currants does not suggest an acreage increase.

TREE NUTS

1. Enough new walnut plantings on good soil to maintain present acreages seem justified at this time.

2. More attention should be given to the selection of suitable soils than was done in the early history of the industry. Soil maps are available at most county Extension offices and these should be checked along with the general crop history in the area before setting an orchard.

3. Walnuts require deep soils that are naturally well-drained.

4. The market outlook for filberts at present is too uncertain for further plantings.

5. If conditions are favorable it is possible that the next five-year average production of filberts could be twice any crop that has occurred to date.

6. Barcelona is the leading filbert variety; Franquette, the walnut variety.

7. The volume of other nuts arriving at the market, or potentially arriving there, has more bearing on the price of both walnuts and filberts than the total production of these.

8. Experiments are needed to establish the value of irrigation for larger and higher quality nuts as well as yields.

9. Irrigation of both filberts and walnuts has been more or less spasmodic. In fact, practically no growers have consistently irrigated any tract or orchard. There are some indications that irrigation of walnuts is possible. However, until more of it is done and more data obtained, it is difficult to recommend irrigation on either of these crops. The Committee would offer a word of caution against excessive irrigation because it has been found that heavy flood irrigation around the trunks of walnut trees in California and in at least one case in Oregon has predisposed the rootstock to serious damage by root rot.

10. The Committee suggests that where irrigation is economically available and filbert yield is falling off, it should be tried as a possible help to increasing and maintaining yields. Growers are cautioned to go into irrigation only after carefully considering the

cost of equipment and power for doing the job, so that they will be reasonably sure the costs will not exceed the benefits received.

11. Permanent sods are not recommended for young dry-land orchards. Also, experience indicates that growing intermediate crops under dry-land conditions with filberts frequently has, for each year the intermediate crop was grown, set the trees back one-half year. Permanent sods are still in the experimental stage and, therefore, until their values are demonstrated, this Committee does not make any recommendations.

12. There is need for humus in almost every orchard.

13. Light fall applications of fertilizer to establish the cover crop are suggested. Heavy nitrogen fertilizer applications should not be made in the fall because of the risk of increasing winter damage.

14. Results of fertilizer applications in nut orchards are not clear, especially on good soil. Fertilizer experiments now in progress should show results soon and are commended.

15. Avoid excessive or over-application of borax in walnut orchards.*

16. Heavy pruning is not recommended for nut trees.

17. Where trees are closely planted on shallow soil and where an acute shortage of soil moisture occurs in mid-summer with a resulting poor growth and yields have begun to level off or drop down, thinning out trees from the orchard is suggested.

18. Mechanical harvesting is recommended.

19. Filberts and walnuts should be harvested at the earliest possible date for best quality, early marketing, and to avoid "bottle necks" at processing plants.

20. There is a definite need for more drying space, especially since much heavier filbert crops are anticipated.

21. Sacked filberts should be dried as soon as possible, especially in wet years.

22. The concentration of filbert production in the Willamette Valley and western Washington, and walnuts in Oregon and California, gives growers an unusual opportunity to establish the sales prices and policies. It is becoming evident that marketing improvements must be made if the nut industry in Oregon is to survive.

23. Further work on rootstocks of walnuts is needed to solve the black-line problem, reduce the risk of root rot, and for more tolerance of wet soil.

24. Research for a walnut equal to Franquette but earlier maturing should be continued.

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* Station Circular of Information No. 363, *Progress Report on the Use of Boron in Walnut and Filbert Orchards.*

General Recommendations

Several suggestions applicable in a general way to most of the fruit and nut crops have been put in this section to eliminate duplication.

Supply, demand, and price

1. Imports or the uncertainty of the disposal of a potential import supply often lowers the price or demoralizes the market to the extent of creating hesitancy of purchase by wholesalers, jobbers, and retailers. This situation is notably with filberts and cherries.

2. Curtailment of exports, especially of production previously built up for the export market, creates a burdensome supply and a resultant low price in domestic markets.

3. To lessen the repercussion of abrupt changes, as noted in one and two above, it is respectfully urged that changes in policies be anticipated as far in advance as possible and publicized.

4. Use every effort within means to create consumer demand and good will.

   a. Produce high quality, harvest and deliver high quality, pack and sell high quality.
   b. Use correct grading and labeling.
   c. Within the scope of an appropriate budget, develop programs for advertising, distributor and consumer education.
   d. Be alert for new packages and packaging methods.
   e. Continue the search for new and improved products.

Sites and soils for fruit and nut plantings

1. Plant on soils best suited to the crop.
2. Know soil type or examine soil map before planting.
3. Plant on good, well-drained soil.
4. Select site that is as free of frost hazard as possible.
5. Establish acreage in best adapted district.

Soil management

1. Practice shallow cultivation—depth gauges on disks are usually desirable.

2. Use best methods known for soil erosion control. Fall cover crops, biennial cover crops, and annual cover crops are desirable when possible in orchards. Experiments and field trials are needed to determine best use of contour plantings.

3. For orchards, especially walnuts, pears, apples, and sweet cherries, in areas subject to flood erosion, be alert to the possible use of permanent sods of the lawn-grass types that are frequently clipped, irrigated, and nitrogen fertilized.

4. Fertilizer experiments on major soil types in the fruit producing areas are needed. These experiments, as well as others suggested in this report, to be held within the limits of a sound and sensible budget in relation to the value of the horticultural industry to the economy of the state.

Production and distribution costs

Keep production costs and distribution costs as low as possible consistent with good business.

1. Get high yields.
   a. Provide for good pollination—protect the bees by not spraying in blossom with poison; encourage the bee-keepers.
   b. Establish fruit and nut plantings on best soils and sites as noted above.
   c. Plant best nursery stock.
   d. Control pests that reduce yield or increase cullage.
   e. Secure a sufficient acreage to be an economic unit for the particular locality and crops to provide a satisfactory standard of living for a family.

2. Harvest, handle and deliver crops in best possible condition to reduce cullage.

3. Save labor.
   a. Use labor-saving machinery where acreage is large enough to justify it and it is practical.
   b. Harvest on piece work basis where practical—to reduce chance of crop loss and make more efficient use of harvest equipment.
   c. Experienced help is limited. Therefore, more patience, supervision, and instruction are required for the available harvest labor.
   d. Strive for improved labor relations.

4. It is risky to try to cut the corners too much on dusting or spraying; such action is likely to prove a false economy. The yield can be cut severely and the cullage increased greatly by so doing.

Part-time farming

The Committee recognizes that some part-time farmers have sizeable acreages but there are many—particularly with berries and filberts—who have small acreages. The Committee believes that many of the recommendations set forth in this report apply to part-time farming.

In addition to the main report the following points are offered for consideration:

1. Get acquainted with your county agricultural agent.

2. Usually there are several soil types in any community—sometimes three or four even on the same farm. Know which soil types are present. Examine a soil map or check with your county agricultural agent to find out what crops will grow best on the land before going into growing some kind of a crop.

3. If the land is not well adapted to the crop, do not attempt to grow it. If you are set on a certain crop, go where that crop will do well.

4. Check on the market outlook for the crop. See if there is a demand for it and learn where the crop must be delivered.

5. Some of the more common problems met with are:

   a. Wrong choice of land or too small an acreage for the crops to be grown.

   b. Inadequate or too costly machinery for small acreage.

   c. Insufficient working capital, and/or no others with whom to exchange labor or machinery use.

   d. Over-optimism as to the financial return.

   e. More hard work than the operator's physical endurance and age can withstand.

   Know the answers to the above problems before investing in the venture.

6. County agricultural agents have circulars on many different crops, pests, animals, etc., copies of which may be obtained without charge.

The Committee offers these suggestions to part-time farmers in a spirit of neighborliness and helpfulness.

Pest control

1. The control of major insects and diseases was mentioned throughout the subcommittee reports many times. For some of these the Committee recognized the known controls as adequate while on others more careful applications of the control method are needed for

the general advancement of the industry. Notably among the latter are filbert worm and cherry fruit fly. Experimental work is needed to improve or determine control methods for several of these pests and the committee suggests research on them to the extent of available funds.

2. Spraying or dusting thoroughly and at the right time is required for success.

3. Formula and quantity of materials per acre for effectiveness are needed.

4. Timing and notification of insect emergence should be continued.

Miscellaneous

1. In cost-of-production circulars, if other state figures are available, give abstracts of comparative costs, yield, and outlook of competing districts.

2. Development and study of new varieties and new process outlets should be continued. Commercial plantings should not be encouraged until the shipping qualities and consumer acceptance of these new varieties have been proved satisfactory.

3. Remove filler trees in crowded fruit orchards before permanent trees are seriously weakened.

4. Continue research of proper and best ways to use the irrigation water.

5. Use weed control chemicals with care. They are not a substitute for good culture.

6. To maintain best quality fruit and stabilize the industry, keep young orchards coming along to replace old ones.

7. Yield is one of the very best ways to cut cost of production per ton.

8. Reduction of production and handling prices is expected to lag behind sale prices if and when a recession occurs. Therefore, it seems wise for growers to reduce or eliminate indebtedness and maintain reserves.

Horticulture Committee

E. Riddell Lage, Hood River, Chairman

C. O. Rawlings, O.S.C., Corvallis, Secretary

Tree Fruits

J. Robert Nunamaker, *Chairman,* Rt. 2, Box 887, Hood River
C. O. Rawlings, *Secretary,* O.S.C., Corvallis
*W. R. Bagley, Box 41, Talent
*Donald Bailey, Route 2, The Dalles
W. R. Berndt, Route 3, Box 444, Salem
*Darrel Carter, Riddle
Gerald Detering, Harrisburg
Kenneth Elliott, Route 1, Dallas
Darrell Evans, Mosier
Eugene H. Fisher, Oakland
Phil Gibbons, Sr., Route 2, Freewater
Thomas J. Harper, Route 2, Box 692, Junction City
Archie Harris, Route 1, Milton
*Paul H. Helweg, Riverside Drive, Roseburg
Harris Higgins, Parkdale
E. Riddell Lage, Route 1, Box 335, Hood River
Chester A. La Mar, Route 1, Gervais
David B. Lowry, P.O. Box 464, Medford
Frank Neufeld, Rickreall
*Robert W. Root, c/o Myron Root Company, Medford
Keith Schrepel, Route 2, Gaston
*Milton Simon, Forest Grove
*Bernard Smith, Route 2, Woodburn
R. M. Weber, Route 2, The Dalles
*Grant York, Milton

Small Fruits

Glen T. Schaeffer, *Chairman,* Route 1, Box 91, Boring
Leon Garoian, Jr., *Secretary,* County Extension Agent, Oregon City
Robert D. Allegre, Route 2, Box 378, Troutdale
Ray W. Bates, Box 574, Bandon
*Joe Buckley, Route 1, Box 200, Gresham
*Robert DeSantis, Star Route, Silverton
Sumner Fish, Bandon
*LeRoy Mills, Route 3, Hillsboro
*Raliegh Robinson, Route 1, Corvallis
Elmer E. Schaad, R.F.D. 2, Box 288, Newberg
Irwin Schlegel, Banks
Stanley Sneed, 2520 Blossom Drive, Salem
Eldon Snider, Route 2, Box 358, Troutdale
Cedric H. Stone, Route 2, Troutdale
*Alan Weisner, Route 2, Silverton

Nut Crops

Gordon Goodpasture, *Chairman,* Leaburg
P. S. Torvend, *Secretary,* County Extension Agent, Hillsboro
*Tommy Abraham, Route 4, Albany
P. J. Blake, Route 2, Box 166, Salem
F. B. Harlow, 3690 County Farm Road, Eugene
Allan R. Joy, Route 2, Box 260, Oregon City
W. D. Loffelmacher, Junction City
W. R. Powell, Route 3, Corvallis
*Claude I. Sersanous, 240 S.E. Clay, Portland
John E. Trunk, Dundee
*Bert M. Wepster, Sunridge Grove, Sheridan
Milburn Ziegler, Route 1, Newberg

Register of Those Attending the Horticulture Forum, March 27, 28, and 29, 1952

W. R. Bagley, Talent
Ray W. Bates, Bandon
W. R. Berndt, Salem
Leroy Childs, Hood River
W. L. Close, Salem
Dean Collins, Portland
G. B. Davis, Corvallis
Mrs. E. R. Fatland, Condon
E. T. Finegan, Cornelius
Sumner Fish, Bandon
Eugene H. Fisher, Oakland
Lee R. Foster, Hood River
R. E. Gannon, Salem
Leon Garoian, Jr., Oregon City
Louie H. Gross, McMinnville
F. B. Harlow, Eugene
Tom Harper, Junction City
R. W. Henderson, Corvallis
Ed Hughes, Coquille
Mrs. L. M. Kranick, Bandon
E. Riddell Lage, Hood River
C. A. LaMar, Gervais
Gene McNulty, Portland
Don C. Mote, Corvallis
E. M. Nelson, The Dalles
L. F. Newkirk, Cornelius
J. Robert Nunamaker, Hood River
G. E. Page, Corvallis
A. W. Parker, Gresham
J. Roland Parker, Roseburg
C. L. Pierce, Salem
Mrs. Arthur Randall, Bandon
C. O. Rawlings, Corvallis
Glen T. Schaeffer, Boring
Norton Taylor, Milton-Freewater
Mrs. Dewey Thompson, Moro
Palmer S. Torvend, Hillsboro
John Trunk, Dundee

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* Unable to attend committee meetings.