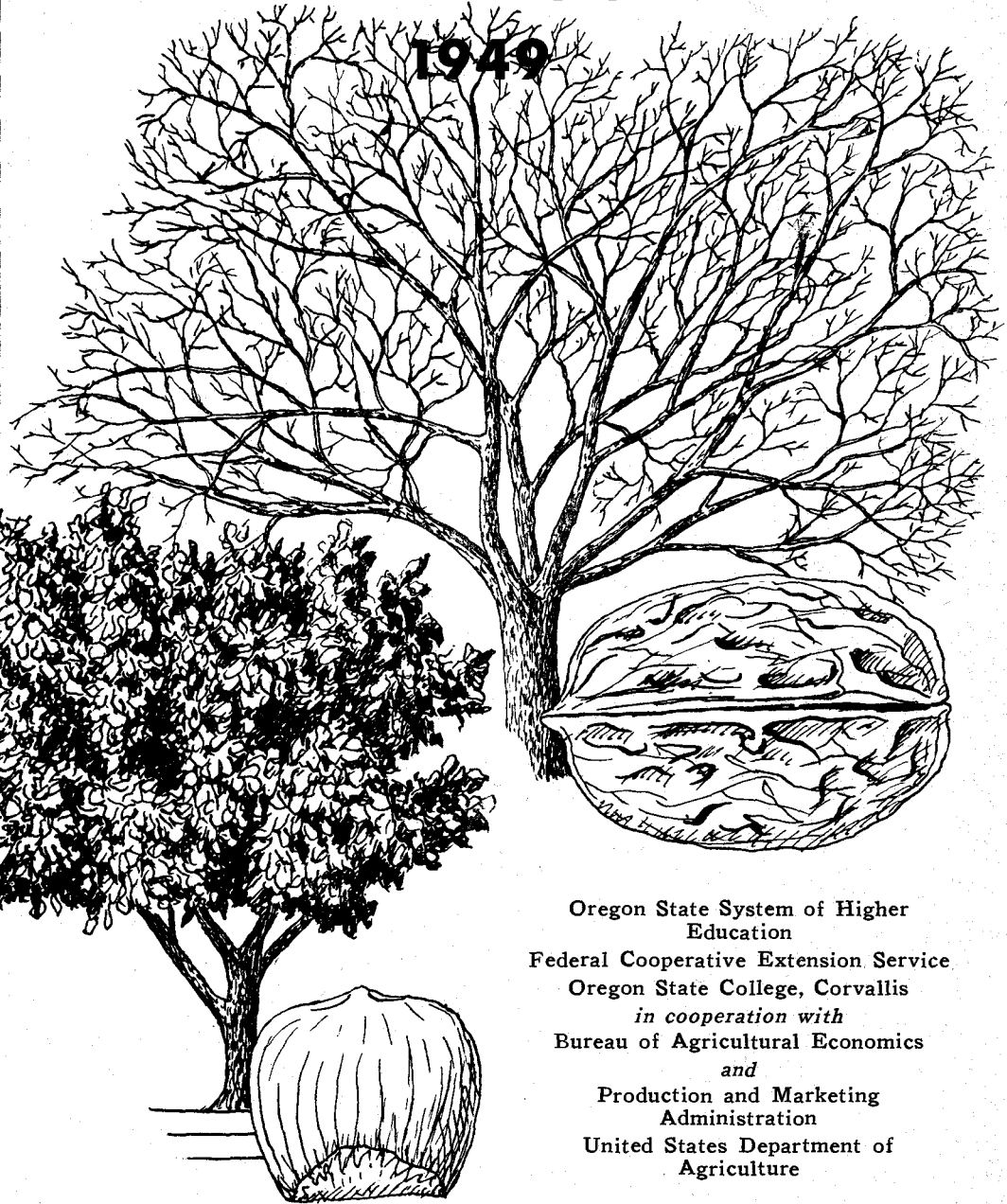


# Oregon-Washington NUT TREE SURVEY

1949



Oregon State System of Higher  
Education  
Federal Cooperative Extension Service  
Oregon State College, Corvallis  
*in cooperation with*  
Bureau of Agricultural Economics  
*and*  
Production and Marketing  
Administration  
United States Department of  
Agriculture

## Summary

► In 1949 there were nearly  $2\frac{1}{2}$  million filbert trees and 600,000 walnut trees in Oregon and Washington. The filberts stand on 29,300 acres of land; the walnuts on 31,100 acres. About 87 per cent of the filbert trees and 94 per cent of the walnut trees in the two Northwest states are in Oregon.

► The filbert trees are capable of producing much larger crops during the next decade. If present orchards are maintained, no removals occur, and growing conditions are similar to those of recent years, the Northwest filbert tonnage should average about 11,500 tons during the next five years, compared to 8,000 tons during the past five. By 1954, a crop as large as 15,000 tons could be produced under conditions as favorable as those which prevailed in 1949. Some filbert trees have been removed during the past five years but new plantings far exceed removals, at least up to 1948.

► Many of the filbert trees were not of full-bearing age in 1949 and few had reached the period of declining productivity. About two-fifths of the trees standing in 1949 have been planted since 1940. Another two-fifths were planted during the 1930's. Less than one-fifth are more than 20 years old.

► Nearly four-fifths of Northwest filbert trees are Barcelona variety. Around a tenth are DuChilly. The remaining tenth are mostly Daviana, Brixnut, Non-Pareil, and Royal varieties. The Non-Pareil and Royal varieties have been planted in increasing proportions in recent years.

► Northwest walnut trees are older and closer to full-bearing age than filberts. The bearing capacity of walnut trees standing in 1949 could increase 5 to 10 per cent during the next five years, but removals and less favorable growing conditions may offset this possible gain. Some plantings are beyond peak production. Only 7 per cent of the Oregon walnut trees have been planted since 1940; about 28 per cent were planted during the 1930's, and 40 per cent were planted during the 1920's. The remaining 25 per cent were planted before 1920 and are past 30 years of age.

► About 84 per cent of Oregon walnut trees are of the Franquette variety. Another 5 per cent are Mayettes. Most of the remaining walnut trees are seedlings of soft-shelled varieties.

# *Oregon - Washington*

## **NUT TREE SURVEY - 1949**

### **Introduction**

Tree nut production in the Pacific Northwest has been expanding at a rapid rate in recent years. During the five-year period, 1945-1949, filbert production increased 50 per cent over the previous five years, while walnut production increased 40 per cent. Prices received by growers were quite favorable during the war years, but have since dropped rapidly. For the 1948 and 1949 crops, prices averaged less than 50 per cent of parity for both walnuts and filberts.

### **Industry requests survey**

In view of this situation, the tree nut interests of the Northwest requested that a survey be made to obtain basic information needed to make intelligent production and marketing plans for future crops. In response to these requests, a special survey of Oregon and Washington filbert and walnut plantings was authorized and undertaken in the fall of 1949. The survey and this report are concerned primarily with the following fundamental questions:

1. How many walnut and filbert trees are there in Oregon and Washington?
2. How old are these trees?
3. What varieties are they?
4. How much are they capable of producing during the next five or ten years?

No attempt has been made in this study to explore the probable effects of larger domestic supplies upon price; possibilities for influencing elasticity of demand for in-shell and shelled filberts and walnuts; methods of increasing consumer acceptance; effects of imports upon domestic consumption and prices; and numerous other factors that might help the industry develop more effective production and marketing plans for the years ahead.

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This report was prepared for publication by John R. Churchill, acting extension agricultural economist, under the direction of N. I. Nielsen, agricultural statistician, Bureau of Agricultural Economics, United States Department of Agriculture; and M. D. Thomas, extension agricultural economist, Oregon State College, in consultation with other specialists of the Bureau and the College. B. M. Graham, agricultural statistician, Bureau of Agricultural Economics, United States Department of Agriculture, did the work in the State of Washington.

Accomplishment of the walnut and filbert survey is due mainly to the excellent cooperation of the many growers who supplied information on their orchards. The county extension agents contributed to the survey by making available lists of names of growers and by publicizing the survey. The contribution of the processing firms and nurserymen who supplied names and addresses of growers is gratefully acknowledged. The farm editors of newspapers, farm periodicals and radio stations also aided in publicizing the survey.

### **Agencies cooperate**

This survey utilizes the cooperative effort of the Oregon State College Extension Service, the Washington State Department of Agriculture, and the Bureau of Agricultural Economics of the United States Department of Agriculture. In Oregon, the funds for the survey were provided jointly by the Oregon State College Extension Service and the United States Production and Marketing Administration under provisions of the Agricultural Research and Marketing Act of 1946. In the State of Washington, funds were provided jointly by the Washington State Department of Agriculture, and by the Federal Research and Marketing Act.

### **Growers provide basic data**

A questionnaire was designed to obtain complete information from growers on age, variety, and 1949 production of filberts and walnuts. In order to use the 1945 census of agriculture as a control factor, questions were included to obtain information on the number of trees planted prior to 1945 that were removed in the years 1945 through 1949.

A list of nut growers was compiled through the assistance of county extension agents, nut processors, and nurserymen. The first mailing of the questionnaire was in the middle of November 1949. A second mailing to non-respondents was early in December, and a third, followup mailing in January 1950. By February 1, 1950, about 4,500 Oregon and Washington nut growers had returned their reports. Based upon the 1945 census, these growers accounted for 73 per cent of Oregon and Washington filbert trees and 60 per cent of Oregon walnut trees.

### **Estimates made for non-respondents**

To determine characteristics of the unreported plantings, a 15 per cent sample was drawn from the list of non-respondents in the major nut-producing counties of Oregon. The number to be sampled in each county was determined by the relationship of the unreported county acreage to the unreported state acreage. Data were obtained from growers in the sample by visitations in February and March. Estimates of the age and variety of the unreported trees are made on the basis of this sample. The number of trees reported in the 1945 census of agriculture is again used as a control factor rather than the average number of growers. Estimates for the minor filbert counties are established on the basis of the mail survey. Estimates on the age and variety of Washington filbert trees are based entirely on the mail survey.

### **Possible sources of error**

Despite careful planning, good cooperation from growers, and thorough analysis, there are several possible sources of error in surveys of this kind. First of all, it is impossible to obtain a complete and accurate list of current growers due to continual change in owners and operators, duplications, etc. Second, errors in memory may be present. Plantings have been made over a long period of years, and not all new owners know exactly when their trees were planted. The results are also subject to sampling error, although the opportunity for and influence of such error is minimized by the large response from growers on the mailed inquiry. Nevertheless, estimates of tree numbers are preliminary and subject to revision when 1950 census data become available.

## **Northwest Filberts**

### **Filbert industry centers in northwest Oregon**

Nearly all of the nation's filbert plantings are located in the states of Oregon and Washington. Oregon grows approximately 87 per cent of the total number of trees in the two states. Most of the plantings in Oregon are in the Willamette Valley. While the plantings generally have followed the water courses, orchards are located on foothills as well as on river bottom lands.

Washington and Yamhill counties of Oregon are the most important filbert counties. Approximately 26 per cent of the Northwest filbert trees are located in Washington County; 15 per cent are in Yamhill, 14 per cent in Lane, 11 per cent in Clackamas, and 10 per cent in Marion. Growers in the other Willamette Valley counties account for 9 per cent and only 2 per cent of the trees are located in other western Oregon counties outside of the Willamette Valley. The State of Washington has 13 per cent of the Northwest filbert trees. Clark County in the southern part of western Washington grows the most filbert trees in that state, with 7 per cent of the Northwest total. The remaining 6 per cent are located in other western Washington counties.

### **Filberts occupy more than 29,000 acres**

In December 1949 there were 2,480,800 filbert trees standing on 29,271 acres in the Pacific Northwest, according to survey indications. Growers' reports indicated that plantings averaged 84.8 trees per acre. The survey shows that growers in the State of Washington have planted more trees to the acre than growers in Oregon. The average number of trees in the State of Washington is 97.1, while Oregon growers reported an average of 83.2 trees per acre.

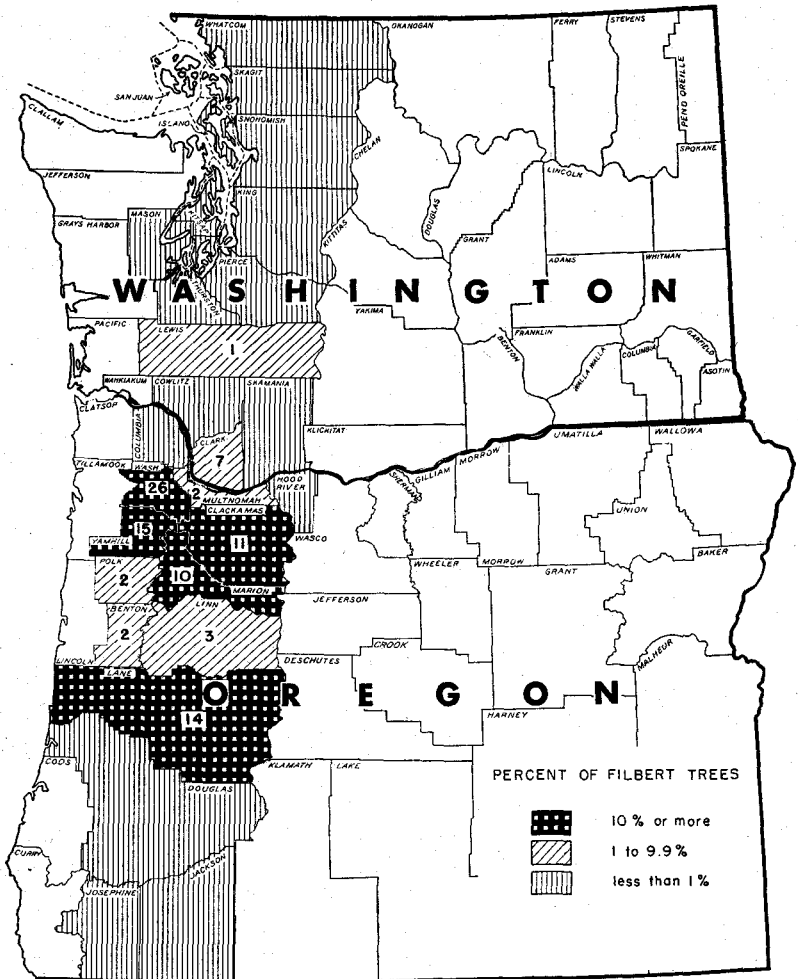


Figure 1. Location of filbert trees standing in Oregon and Washington in December 1949.

The number of trees per acre also differs greatly between counties. In Washington County, Oregon, the average number of trees per acre is 88.9 while growers in Marion County, Oregon, have only 76.2 trees per acre. The survey indicates that growers in Clark County, Washington, have 101.5 trees to the acre, while in other Washington counties the average is only 92.4 trees per acre.

Table 1. INDICATED ACREAGE AND NUMBER OF FILBERT TREES BY AGE GROUPS  
(Standing in Oregon and Washington in December 1949)

Age group and year planted	Area in planting	Trees per acre	Total number of trees standing	Per cent of all trees
<i>Oregon</i>				
<i>Acres</i>				
1-2 years (1948-49) .....	455	82.9	37,690	1.7
3-4 years (1946-47) .....	2,771	82.0	227,158	10.5
5-9 years (1941-45) .....	7,970	82.3	656,036	30.2
10-14 years (1936-40) .....	5,921	83.8	496,413	22.9
15-19 years (1931-35) .....	4,424	83.6	369,734	17.0
20 years and more (1930 and before) ..	4,543	84.6	384,322	17.7
Total all age groups .....	26,084	83.2	2,171,353	100.0
<i>Washington</i>				
1-2 years (1948-49) .....	94	95.1	8,935	2.9
3-4 years (1946-47) .....	241	95.4	22,993	7.4
5-9 years (1941-45) .....	608	91.7	55,738	18.0
10-14 years (1936-40) .....	825	101.2	83,510	27.1
15-19 years (1931-35) .....	845	98.3	83,042	26.8
20 years and more (1930 and before) ..	574	96.2	55,229	17.8
Total all age groups .....	3,187	97.1	309,447	100.0
<i>Total Oregon and Washington</i>				
1-2 years (1948-49) .....	549	84.9	46,625	1.8
3-4 years (1946-47) .....	3,012	83.1	250,151	10.1
5-9 years (1941-45) .....	8,578	83.0	711,774	28.7
10-14 years (1936-40) .....	6,746	86.0	579,923	23.4
15-19 years (1931-35) .....	5,269	85.9	452,776	18.3
20 years and more (1930 and before) ..	5,117	85.9	439,551	17.7
Total all age groups .....	29,271	84.8	2,480,800	100.0

A survey of Northwest nut trees, made in 1936, indicated that the average number of trees per acre in Oregon was 98.3. Since that time, considerable thinning has been done in older orchards. In most recent plantings, the trees have been set farther apart. Some growers have planted trees at a rate of 108 to the acre, however, and plan to thin later. The closer planting is done to obtain a higher yield per acre while the trees are young. In other cases, young filberts are set farther apart and the orchard is usually interplanted with other trees or berries which are removed after the filbert trees become mature and need more room.

### Filbert trees are young

The average age of all Northwest filbert trees is about 13 years. Almost all of the filbert trees have been planted during the last three decades. Of the 2,480,800 filbert trees standing on farms in the two states in December 1949, only 34,330 trees, or 1.4 per cent, were planted prior to 1921. Some 16 per cent were planted during the 10-year period, 1921-30. The survey indicates that the number of filbert trees doubled during the next 5 years, 1931-35, when about 18 per cent of the trees were planted. The rate of new plantings

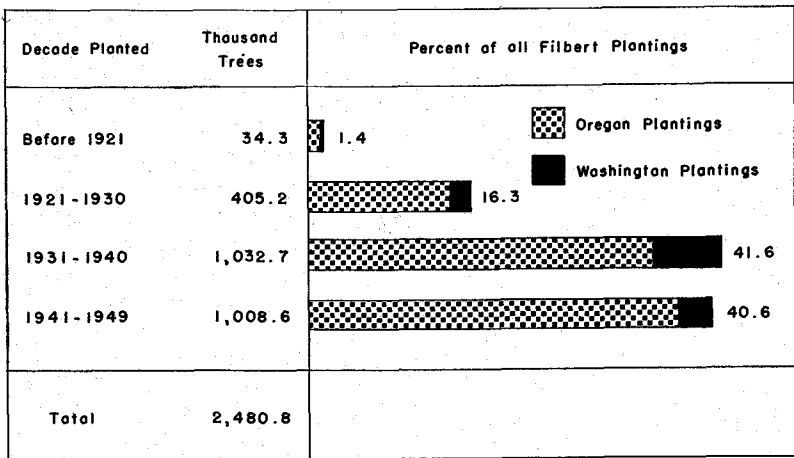


Figure 2. Oregon and Washington plantings, by decades, of filbert trees standing in December 1949.

continued to increase between 1936 and 1940, as more than 23 per cent of the Northwest trees were planted during this period. From 1941 through 1945, annual plantings varied between 4 and 8 per cent and a total of nearly 29 per cent of all trees standing now were planted in this period. The years 1946 and 1947 showed continued expansion of the filbert industry with plantings averaging about 5 per cent for each year. A sharp decrease in annual plantings started in 1948. The survey indicates only 36,728 or 1.5 per cent of the total trees were set out in 1948 and only 9,897 in 1949.

The survey shows that the annual rate of plantings was not the same for all sections of Oregon and Washington. Expansion in tree numbers during the last 9 years has been much greater in Oregon than in Washington. Over 42 per cent of Oregon's filberts were planted between 1941 and 1949, while in the State of Washington only some 28 per cent of the trees were planted during this period. Lane and Washington counties in Oregon showed the largest increase in plantings. Benton and Linn counties showed the smallest increases. Fifty-one per cent of all plantings in Washington County were made during the last 9 years, but only 22 per cent of all plantings in Linn County were made during this same period.

In the State of Washington the survey shows that only 24 per cent of Clark County plantings were made between 1941 and 1949. In other Washington State counties, 33 per cent of the trees were set out during this period.



Table 2. FILBERT TREES—INDICATED VARIETY AND AVERAGE AGE  
(Standing in Oregon and Washington in December 1949)

Variety	Total trees	Per cent of total	Average age
<i>Years</i>			
<i>Oregon</i>			
Barcelona .....	1,796,569	82.7	12.6
DuChilly .....	149,334	6.9	13.5
Brixnut .....	88,332	4.1	17.4
Daviana .....	88,270	4.0	12.3
Non-Pareil .....	12,331	0.6	6.0
Royal .....	12,052	0.6	5.7
Others .....	24,465	1.1	12.3
Total, Oregon .....	2,171,353	100.0	12.8
<i>Washington</i>			
Barcelona .....	144,980	46.9	14.0
DuChilly .....	125,680	40.6	14.8
Brixnut .....	6,719	2.2	15.4
Daviana .....	9,699	3.1	16.3
Non-Pareil .....	4,497	1.4	6.5
Royal .....	4,296	1.4	6.6
Others .....	13,576	4.4	10.1
Total, Washington .....	309,447	100.0	14.0
<i>Oregon and Washington</i>			
Barcelona .....	1,941,549	78.3	12.7
DuChilly .....	275,014	11.1	14.1
Brixnut .....	95,051	3.8	17.3
Daviana .....	97,969	3.9	12.7
Non-Pareil .....	16,828	0.7	6.1
Royal .....	16,348	0.7	6.0
Others .....	38,041	1.5	11.5
Total, Oregon and Washington .....	2,480,800	100.0	12.9

**Barcelona most important variety**

Most filbert trees are nearly self-sterile, which makes it necessary to plant, in addition to the main variety, one or more varieties as pollenizers. The Barcelona variety is the most common and accounts for nearly four-fifths of the total trees in the Northwest. The varieties Daviana and DuChilly are commonly planted with the Barcelona for pollenization. In the State of Washington the DuChilly has been planted to a large extent and accounts for nearly 41 per cent of all trees in that state. The Brixnut has been planted to a limited extent in the Northwest, but less than 4 per cent of the total trees are of this variety. It is most commonly pollenized with the Halls Giant. Non-Pareil, Royal, and Fitzgerald are newer varieties which have increased in importance during the last decade, but they account for less than 2 per cent of the total trees. Although planting was light during the last two years (1948-1949), these three varieties accounted for 14 per cent of all trees planted during the two-year period. This trend suggests that these varieties will become of greater importance in years to come.

Table 3. FILBERT TREES—INDICATED VARIETY AND YEARS PLANTED  
(Standing in Oregon and Washington in December 1949)

Variety	Total trees all ages	1948-49 1-2-years	1946-47 3-4 years	1941-45 5-9 years	1936-40 10-14 years	1931-35 15-19 years	Before 1930 20 years and over
<i>Oregon</i>							
Barcelona .....	1,796,569	28,171	194,998	558,207	412,214	297,655	305,324
DuChilly .....	149,334	1,915	11,435	42,344	37,517	24,787	31,336
Brixnut .....	88,332	321	2,280	6,050	21,106	30,127	28,448
Daviana .....	88,270	1,073	9,519	31,237	19,097	12,158	15,186
Non-Pareil .....	12,331	2,898	1,211	7,498	724	.....	.....
Royal .....	12,052	1,919	3,836	5,435	572	287	3
Others .....	24,465	1,393	3,879	5,265	5,183	4,720	4,025
Total, Oregon .....	2,171,353	37,690	227,158	656,036	496,413	369,734	384,322
<i>Washington</i>							
Barcelona .....	144,980	4,445	16,921	24,091	37,711	28,386	33,426
DuChilly .....	125,680	1,810	4,175	16,675	38,592	47,514	16,914
Brixnut .....	6,719	63	23	687	2,141	3,037	768
Daviana .....	9,699	84	1,138	1,100	2,078	1,483	3,816
Non-Pareil .....	4,497	818	.....	3,583	96	.....	.....
Royal .....	4,296	584	63	3,649	.....	.....	.....
Others .....	13,576	1,131	673	5,953	2,892	2,622	305
Total, Washington .....	309,447	8,935	22,993	55,738	83,510	83,042	55,229
<i>Oregon and Washington</i>							
Barcelona .....	1,941,549	32,616	211,919	582,298	449,925	326,041	338,750
DuChilly .....	275,014	3,725	15,610	59,019	76,109	72,301	48,250
Brixnut .....	95,051	384	2,303	6,737	23,247	33,164	29,216
Daviana .....	97,969	1,157	10,657	32,337	21,175	13,641	19,002
Non-Pareil .....	16,828	3,716	1,211	11,081	820	.....	.....
Royal .....	16,348	2,503	3,899	9,084	572	287	3
Others .....	38,041	2,524	4,552	11,218	8,075	7,342	4,330
Total, Oregon and Washington .....	2,480,800	46,625	250,151	711,774	579,923	452,776	439,551

Variety	Thousand Trees	Percent of all Filbert Trees
Barcelona	1,941.6	78.3
DuChilly	275.0	11.1
Ooviano	98.0	3.9
Brixnut	95.1	3.8
NonPoreil	16.8	0.7
Royal	16.3	0.7
Others	38.0	1.5
<b>Total</b>	<b>2,480.8</b>	

Figure 3. Oregon and Washington filbert plantings by variety of trees standing in Oregon and Washington in December 1949.

The Barcelona variety will continue to account for the major portion of the filbert trees in the Northwest for many years. Over 43 per cent of the total Barcelona plantings are less than 10 years old and are not yet in full production. This variety is of greater importance in Oregon than in Washington as nearly 83 per cent of all Oregon trees are Barcelona while only 47 per cent of all the Washington trees are Barcelona.

Only 29 per cent of the DuChilly are less than 10 years old. Over one-half of this variety was planted between 10 and 19 years ago and some 17 per cent are over 19 years old. During the 30's, 52 per cent of all trees planted in the State of Washington were DuChillys. Of all Washington plantings between 1941 and 1949, DuChillys accounted for only 26 per cent.

The planting rate of the Daviana variety has remained fairly constant during the last three decades. It accounts for approximately 4 per cent of the total trees standing in 1949. In 1949, the Daviana showed a slight decline in importance and accounted for only 2.5 per cent of all plantings. In future years, it is likely that Daviana will become less important.

Nine-tenths of all Brixnut filberts were planted before 1941. Thirty per cent are over 19 years old and 66 per cent are more than 14 years old. This variety has not proved to be as satisfactory as other important varieties now being grown.

The Non-Pareil variety is relatively new. About 95 per cent of the trees of this variety have been planted since 1940. Eight per cent of all plantings in 1948 and 1949 were Non-Pareils, but the planting has not been general throughout the entire Northwest. More than one-third of all Non-Pareils are located in Clackamas County, Oregon. The State of Washington accounts for over one-fourth of this variety.

The Royal variety is another recent introduction. This variety accounted for 5 per cent of all plantings during 1948 and 1949. The survey indicates that nearly one-third of the Royal plantings in the Northwest is in Marion County, Oregon.

Although the Fitzgerald variety has not been planted quite as extensively as the Royal or Non-Pareil, it is similarly becoming of greater importance. Nearly all of the Fitzgerald plantings have taken place during the last decade. Nearly one-third of the plantings is located in Lane County, Oregon.

#### Production will increase

Bearing capacity of filbert orchards will increase as the trees grow older. By 1954, the survey indicates, the bearing surface of

Table 4. OREGON-WASHINGTON FILBERT PRODUCTION TREND  
(1930 Through 1949 and Indicated 1950-1959)

Period	Production	Index <sup>1</sup>
	<i>Tons</i>	
<i>Annual</i>		
1930 .....	300	12
1931 .....	420	17
1932 .....	490	20
1933 .....	1,070	44
1934 .....	1,210	49
1935 .....	1,240	51
1936 .....	2,100	86
1937 .....	2,570	105
1938 .....	2,440	100
1939 .....	3,890	159
1940 .....	3,210	131
1941 .....	5,750	235
1942 .....	4,270	174
1943 .....	7,030	287
1944 .....	6,520	266
1945 .....	5,320	217
1946 .....	8,450	345
1947 .....	8,800	359
1948 .....	6,440	263
1949p .....	11,240	459
<i>5-year average</i>		
1930-1934 .....	698	29
1935-1939 .....	2,448	100
1940-1944 .....	5,356	219
1945-1949p .....	8,050	329
1950-1954 <sup>2</sup> .....	11,500	470
1955-1959 <sup>2</sup> .....	13,500	551

p Preliminary.

<sup>1</sup>Base period 1935-1939=100.

<sup>2</sup>Indicated production based on trees standing in 1949 assuming average growing conditions and no removals or new plantings.

present orchards is likely to be about 35 per cent more than the 1949 bearing capacity. If present orchards are maintained, no removals occur, and growing conditions are similar to conditions between the years 1940 through 1949, production should average around 11,500 tons a year during the next 5 years, 1950-1954. Crops during the period 1945-1949 averaged a little more than 8,000 tons. Under average seasonal conditions, production during the 5-year period 1955-1959 should average about 13,500 tons. See Table 3 and Figure 4.

Under conditions as favorable as those in 1949, Oregon and Washington filbert trees could produce a crop as large as 15,000 tons in 1954 and as large as 16,500 tons in 1959.

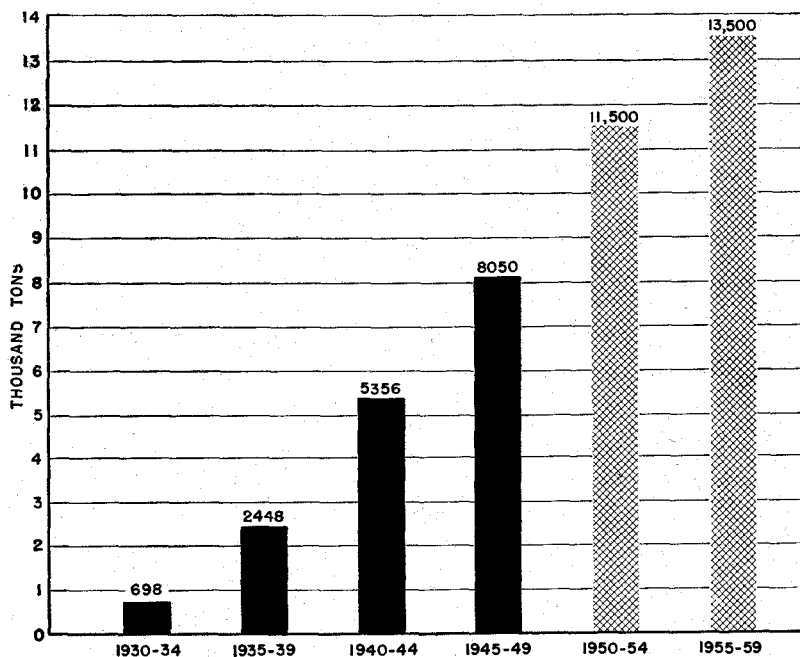


Figure 4. Filbert production trend in Oregon and Washington; actual, in black, 1930-1949; indicated, cross-hatched, 1950-1959.

## Oregon Walnuts

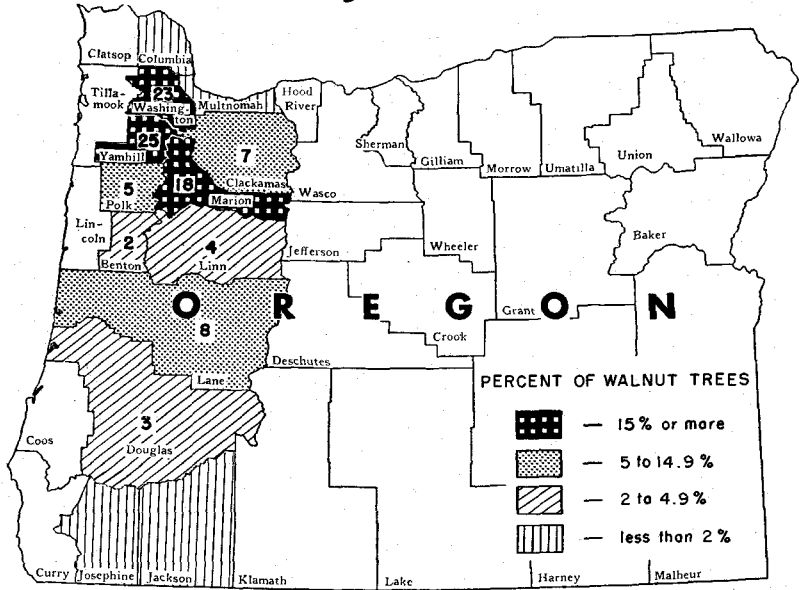


Figure 5. Location of walnut trees standing in Oregon in December 1949.

### Oregon has small part of nation's walnut trees

More than four-fifths of the United States walnuts are grown in California, with most of the remainder in Oregon. The survey indicates that there were 573,625 walnut trees standing in Oregon and 33,732 in Washington in 1949. Approximately 93 per cent of the Oregon walnut trees are planted in the Willamette Valley. Yamhill and Washington are the leading walnut counties in the state with 25 per cent of the walnut trees located in Yamhill County and 23 per cent in Washington. Marion is the third largest walnut county and has 18 per cent of the walnut trees. The six other Willamette Valley counties account for another 27 per cent. Six per cent are located in the southern Oregon counties of Douglas, Jackson, and Josephine, and one per cent in other counties of the state. Most of the walnut trees in the State of Washington are in Clark County.

### Walnut acreage

As shown in Table 4, Oregon walnut plantings occupy an estimated 29,728 acres. Those in Washington stand on about 1,387

acres. The survey shows an average of 19.3 trees to the acre in Oregon. The planting rate varied significantly between counties, however, as the average number of trees per acre ranged from a low of 17.1 in Lane, Clackamas, and Multnomah counties to a high of 22.6 in Washington County. A survey of the Northwest nut industry made in 1935 and 1936 showed that plantings averaged 23.5 trees per acre. Since then, considerable thinning of old orchards has taken place and trees in new orchards have been set farther apart.

Table 5. INDICATED ACREAGE AND NUMBER OF WALNUT TREES BY AGE GROUPS<sup>1</sup>  
(Standing in Oregon in December 1949)

Age group and year planted	Acres in planting	Trees per acre	Number of trees	Per cent of all trees
1-2 years (1948-1949) .....	319	19.4	6,190	1.1
3-4 years (1946-1947) .....	547	20.0	10,918	1.9
5-9 years (1941-1945) .....	1,291	20.0	25,822	4.5
10-14 years (1936-1940) .....	2,541	18.5	47,014	8.2
15-19 years (1931-1935) .....	5,871	18.8	110,574	19.3
20-29 years (1921-1930) .....	11,514	19.9	228,775	39.9
30 and over (1920 and before) .....	7,645	18.9	144,332	25.1
Total all age groups .....	29,728	19.3	573,625	100.0

<sup>1</sup>The estimated total number of walnut trees in the State of Washington is 33,732. No estimates were made for variety or age of Washington walnut trees.

### Most walnuts bearing age

Twenty-five per cent of Oregon walnut plantings were set out prior to 1921. The greatest expansion in planting occurred during

Decade Planted	Thousand Trees	Percent of all Walnut Plantings
Before 1921	144,332	25.1
1921-1930	228,775	39.9
1931-1940	157,588	27.5
1941-1949	42,930	7.5
Total	573,625	

Figure 6. Oregon plantings by decades of walnut trees standing in December 1949.

the decade 1921 through 1930. The survey indicates that about 40 per cent of the walnut trees were planted during this period. The decade of the 30's showed a decline in annual planting of walnuts, as only 28 per cent of the standing trees were set out from 1931 through 1940. Between 1941 and 1949, the rate of new planting declined substantially; only 7 per cent of the total trees were planted during that period.

The annual planting rate since 1935 has steadily decreased. The average annual planting during the 1931-1935 period was 22,623 trees. Between 1936 and 1940 the average yearly planting rate dropped to 9,403. Between 1941 and 1944, the survey indicates a further decline to a yearly average of 5,467 trees. The survey shows that more trees were removed than were planted during the 5-year period 1945-1949. The average new plantings were 4,212 trees per year while the average annual removals were 7,727 trees. Only slightly more than one-half as many trees were planted as were removed.

No estimates were made of the age of walnut trees in the State of Washington.

#### **Franquette variety maintains lead**

More than four-fifths of the walnuts standing in Oregon are Franquettes. A little more than 5 per cent of the total trees are Mayettes. Other improved varieties account for less than 1 per cent of the standing trees. Seedling trees producing soft-shelled nuts account for nearly 10 per cent of the state's total. The importance of the Franquette variety has continued to increase since 1920. Of the plantings made prior to 1920, about 66 per cent were Franquettes. Between 1921 and 1930, more than 87 per cent of the plantings were Franquettes. During the ten-year period 1931-1940 this variety accounted for some 92 per cent of all plantings, and in the past nine years Franquettes have continued to increase in importance as compared with other varieties until they now account for 95 per cent of the new plantings.

The survey indicates that 84 per cent of Mayette plantings now standing were set out before 1931. Of all trees planted before 1930, 7 per cent were Mayettes. From 1936 to date, less than 2 per cent of all plantings have been Mayettes.

The survey also indicates a downward trend in the importance of soft-shelled seedlings. Of the total trees planted in Oregon before 1921, 27 per cent were seedlings. From 1921 through 1930, 4 per cent of all plantings were seedlings, and from 1931 through 1935, 5 per cent were seedlings. From 1936 through 1940, seedling plantings



Table 6. INDICATED AGE AND VARIETY OF WALNUT TREES  
(Standing in Oregon in December 1949)

Age group and year planted	All varieties		Franquette		Mayette		Seedling		Others	
	Trees	Per cent	Trees	Per cent	Trees	Per cent	Trees	Per cent	Trees	Per cent
1-2 years (1948-1949)....	6,190	100.0	5,873	94.9	51	0.8	155	2.5	111	1.8
3-4 years (1946-1947)....	10,918	100.0	10,396	95.2	19	0.2	280	2.6	223	2.0
5-9 years (1941-1945)....	25,822	100.0	24,016	93.0	573	2.2	573	2.2	660	2.6
10-14 years (1936-1940)....	47,014	100.0	44,259	94.2	744	1.6	1,851	3.9	160	0.3
15-19 years (1931-1935)....	110,574	100.0	100,291	90.7	3,424	3.1	5,928	5.4	931	0.8
20-29 years (1921-1930)....	228,775	100.0	201,057	87.9	15,493	6.8	9,838	4.3	2,387	1.0
30 and over (1920 and before).....	144,332	100.0	94,904	65.8	10,354	7.2	38,562	26.7	512	0.3
Total all age groups..	573,625	100.0	480,796	83.8	30,658	5.3	57,187	10.0	4,984	0.9

17

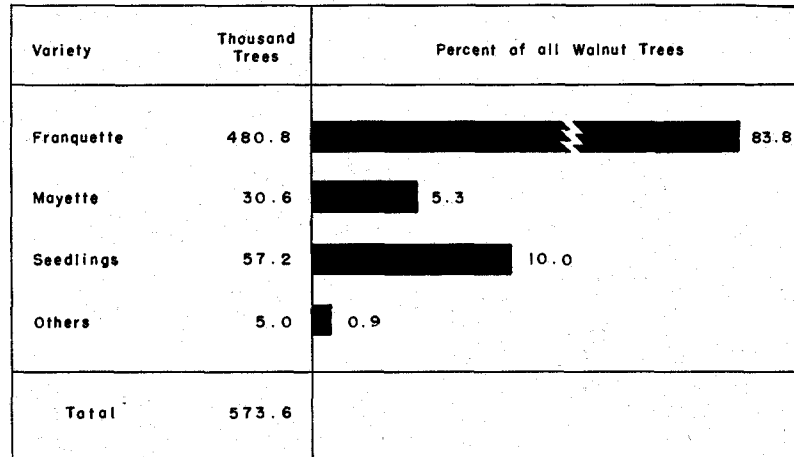


Figure 7. Oregon walnut plantings by variety of trees standing in December 1949.

were 4 per cent of total but declined to less than 3 per cent in the 9 years from 1941 through 1949.

No estimates were made of the variety of walnut trees in Washington.

### Walnut production will level off

Considering the number of trees in each of the various age groups, the total bearing capacity of the walnut trees standing in Oregon in December 1949 could increase 5 to 10 per cent by 1954. This means that the total bearing capacity of the trees now standing is nearing its peak, and the prospective increase may be offset by additional removals and by less favorable growing conditions than prevailed during the last five years. Due to the severe cold of January 1950, walnut trees are starting into the 1950-1954 period in much poorer condition than five years earlier.

If present orchards are maintained, no removals occur, and growing conditions are similar to those of the past decade, the average production of walnuts during the next five years would not be greatly different from the 7,680-ton average of the past five years.

Table 7. OREGON WALNUT PRODUCTION TREND  
(1930 Through 1949 and Indicated 1950-1959)

Period	Production	Index <sup>1</sup>
	<i>Tons</i>	
<i>Annual</i>		
1930 .....	900	23
1931 .....	2,600	66
1932 .....	3,200	81
1933 .....	1,300	33
1934 .....	3,100	79
1935 .....	4,100	104
1936 .....	1,600	41
1937 .....	2,600	66
1938 .....	6,300	160
1939 .....	5,100	129
1940 .....	4,400	112
1941 .....	7,000	178
1942 .....	3,600	91
1943 .....	5,300	135
1944 .....	6,800	173
1945 .....	6,900	175
1946 .....	8,900	226
1947 .....	5,600	142
1948 .....	9,100	231
1949p .....	7,900	201
<i>5-year average</i>		
1930-1934 .....	2,220	56
1935-1939 .....	3,940	100
1940-1944 .....	5,420	138
1945-1949p .....	7,680	195
1950-1954 <sup>2</sup> .....	7,500	190
1955-1959 <sup>2</sup> .....	8,000	203

p Preliminary.

<sup>1</sup>Base period 1935-1939=100.

<sup>2</sup>Indicated production based on trees standing in 1949, assuming average growing conditions and no removals or new plantings.

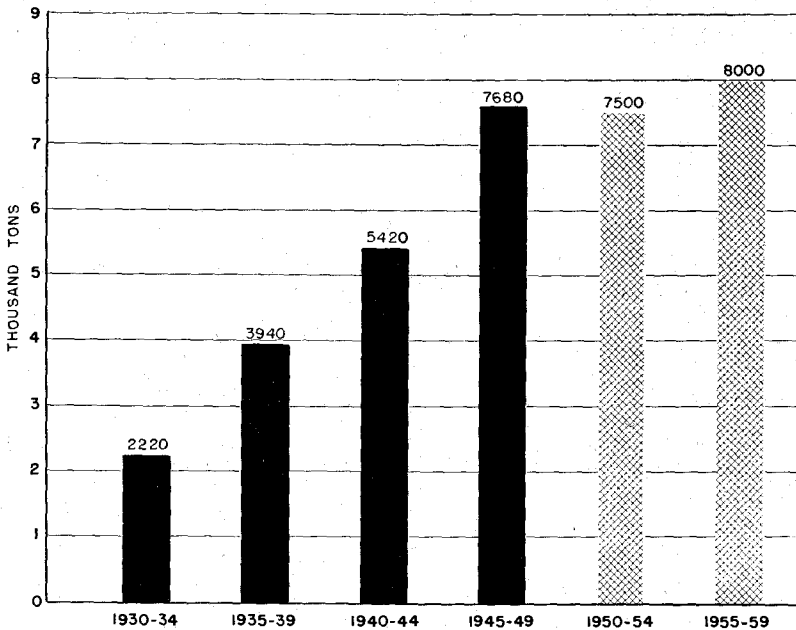


Figure 8. Oregon walnut production trend. Actual, in black, 1930-1949; indicated, cross-hatched, 1950-1959.

With the same assumptions, production can be expected to average about 8,000 tons during the 5-year period 1955-1959. Under very favorable growing conditions, however, a crop approaching 10,000 tons could be produced in Oregon during this period.

#### California has large nut acreage

Besides filberts and walnuts grown in Oregon and Washington, almonds and walnuts grown in California are an important part of the Pacific Coast nut industry. As shown by data in Table 7, which was compiled from a report by the California Cooperative Crop Reporting Service, there were 111,170 acres of almonds and 127,589 acres of walnuts in California in 1949. About 27 per cent of the almonds have been planted during the last ten years. About 22 per cent are 11 to 20 years old and 51 per cent are over 20 years of age. The most important varieties are Non-Pareil, Mission, Ne Plus Ultra, and the Drake. Of the walnuts, about 19 per cent of the California acreage have been planted during the last 10 years; 21 per cent are 11 to 20 years old; and 60 per cent have been planted more

than 20 years. Until recently, Placentia has been the most important variety in California, but Franquette now leads. The importance of the early-maturing Payne variety has also increased rapidly during the last 25 years and it is now in third place. Some Mayettes are grown, but several other varieties not commonly grown in Oregon are more important in California.

Table 7. ALMOND AND WALNUT ACREAGE IN CALIFORNIA<sup>1</sup>  
(By variety and age groups in 1949)

Crop and variety	Total all ages	1-5 years	6-10 years	11-15 years	16-20 years	21-25 years	Over 25 years
<i>Almonds</i>							
Drake .....	10,830	232	487	770	627	679	8,035
IXL .....	7,582	159	235	361	235	393	6,199
Jordanola .....	2,986	1,665	1,072	164	18	11	56
Lewelling .....	326	9	29	2	3	6	277
Mission .....	19,972	3,216	4,039	3,309	1,076	695	7,637
Ne Plus Ultra .....	14,116	1,457	1,927	2,287	939	646	6,860
Non-Parcil .....	45,609	6,526	6,459	8,109	4,030	2,284	18,204
Peerless .....	6,212	851	882	931	613	431	2,504
Other almonds .....	3,537	264	435	285	223	221	2,109
Total, all almonds .....	111,170	14,379	15,565	16,218	7,764	5,366	51,878
<i>Walnuts</i>							
Concord .....	7,595	77	104	212	933	2,007	4,262
Eureka .....	14,110	1,174	1,233	1,147	1,790	2,763	6,003
Franquette .....	32,981	6,090	4,961	4,088	4,837	4,601	8,404
Hartley .....	2,292	1,411	423	147	123	72	116
Mayette .....	5,253	358	472	505	721	844	2,353
Payne .....	20,099	2,305	2,531	2,506	3,637	3,907	5,213
Placentia .....	32,081	756	496	844	2,927	8,722	18,836
Other varieties .....	9,932	1,287	764	647	1,035	1,628	4,571
Seedlings .....	3,246	118	11	42	123	80	2,872
Total, all walnuts .....	127,589	13,576	10,995	10,138	16,126	24,624	52,130

<sup>1</sup>Compiled from reports by the California Cooperative Crop Reporting Service.

Cooperative Extension Work in Agriculture and Home Economics

Wm. A. Schoenfeld, Director

Oregon State College and United States Department of Agriculture Cooperating  
Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914