

The Willamette Valley Is the Best Walnut Country in the World, and Salem Is and Is to be the Center of the Industry of This State

AN EXHAUSTIVE STUDY OF THE WALNUT INDUSTRY AS APPLIED TO OREGON CONDITIONS

(The following exhaustive treatise on walnuts was written by Knight Peary, secretary of the Western Walnut association, who for the last six years has been developing Skyline orchards, a 200-acre walnut and grape property in the Liberty district. Mr. Peary with his brothers, all Oregon Agricultural college graduates who have had a wide orcharding experience, have recently organized a business in Salem as Peary Bros., in contracting the planting and care of orchards, renovating orchards that are not paying, and selling fruit, nut and berry properties.)

The United States annually imports between 45,000,000 and 55,000,000 pounds of English walnuts. These come largely from France, Spain, Italy and China, the latter country selling some 7,000,000 pounds of the so-called Manchurian walnuts. California produces between 20,000,000 and 33,000,000 pounds annually. Perhaps 75,000 pounds of Oregon walnuts reached commercial channels in 1917 and 300,000 pounds in 1918.

The three Pacific coast states are the only ones in the United States that can produce walnuts commercially. California has in bearing about 25,000 acres, with 20,000 acres non-bearing; Oregon probably has in the neighborhood of 8000 acres, 70 per cent of which is six years or older and which is of the age to get into the bearing column. Washington has between 200 and 225 acres of this nut.

Yamhill county is the leading Oregon county in respect to walnut acreage, having about 50 per cent of the total of the state. Marion is second with over 1000 acres, and Polk county third. Perhaps 25 per cent of the acreage of the state will never yield commercial crops and another 25 per cent will never reach over 50 per cent of the average of the other half of the orchards. Many causes contribute to this condition, among them being improper varieties, such as Santa Barbara soft shell seedlings, poorly chosen orchard sites and lack of proper care in developing the orchard.

Growers of few other orchard crops have as little cause for worry on the subjects of over-production and severe competition as have the walnut growers. Consumption of nuts is increasing rapidly in America, and will undoubtedly continue to increase as meat becomes higher in price and as the tendency to regard nuts as staple foods instead of luxuries, spreads. Importations will not be likely to increase materially. Production in this country is limited to certain favored areas of the three Pacific coast states. The almond, pecan, filbert and peanut will be the walnut's most serious competitors a decade from now.

Limiting Factors.
While the walnut can be successfully grown in every Oregon county west of the Cascades, yet there are only limited areas in each of these counties where maximum results can be expected. The selection of a site for a walnut orchard requires more judgment than does that of most other orchards.

Frost is perhaps the most important limiting factor in this state. Locations subject to late spring and early frosts should be avoided. The heavy frost that bit the valley in September, 1916, cost those growers who did not have good air drainage two crops of nuts. It froze most of the nuts on the fruiting buds for the following season to the extent that there was a very light crop in 1917. Other orchards located with due respect to air drainage were unharmed. It is because of the better frost protection of the hills that the bulk of the plantings of this state are there located. The walnut will endure heavy frozes while dormant, but when it once starts to grow it is very sensitive to extreme cold.

The French strains of walnuts only should be planted in this state as they are late in starting to grow and accordingly miss most of the frosts. The Santa Barbara, or California soft shell types, should not be planted here as they bloom too early. Varieties that bloom during the first half of May seem to do the best under Oregon conditions.

Depth of soil is a factor: to be

more considered in the hills than along the river bottoms. The deeper at least above rock, and perhaps a little less above soapstone should be demanded. The walnut grows to be a very large tree and its roots spread far and deep. Being a heavy feeder, it does best on fairly rich, well drained land that is retentive of moisture. In such conditions it will grow a large tree with much bearing surface that will come into heavy bearing at an early age. The river bottoms and the well drained clay loams would be the ideal soils for walnut culture were it not for frost danger. Because of the frosts, however, we are forced to consider the hill locations. In the hills one must choose between the cleared lands and the timbered ones. The former are usually low in nitrogen matter, easily dried out by the winds that are usually prevalent in such localities and produce a slower growing tree and a smaller tree than can be had in valley conditions and one that comes into heavy bearing at a later age, since a large bearing surface is necessary before heavy bearing can take place. Where timber is standing on hill land that is otherwise good orchard land it is usually held at nearly the same price as adjoining, farmed out and cleared land is, hence it costs as much as the cleared stuff plus the cost of clearing, which puts the initial cost of the land rather high.

In the writer's mind the ideal walnut locations in the Salem country are newly cleared red hill lands, that have enough slope to insure water and air drainage, but not enough to make cultivation difficult or to encourage washing by the heavy winter rains. We know of one orchard with conditions much like these that yielded 25 pounds of nuts per tree when nine years old.

The walnut will not stand "wet feet." Even in the draws and little water courses in the hills, where it draws themselves have considerable slope, we have noticed that the nut trees do poorly. A high water table, even in winter time, is undesirable. It is on poorly drained soils that "dieback" is most common. This is a condition where the tips of the branches die back for a considerable distance, much as though they had been killed by frost, and is often confused with frost injury. Wet soils prevent air from entering the ground, which hinders spring foliage. Proper absorption of water and plant foods will not take place unless there is a certain amount of air in the soil about the roots. When the soil is waterlogged the water is transpired more rapidly from the upper part of the tree than it is absorbed by the roots. The inner parts of the tree get first chance at the water and the tips get what is left, and as a consequence many of them die back because of insufficient water.

Seedlings or Grafted Trees.
One will hear bitter discussions as to the comparative merits of the grafted and seedling trees. One man would have nothing but seedlings and another would grub out any seedlings that happened to be on his place and replace them with grafted trees. Men who make radical statements of this nature will usually be found to have acquired all their knowledge of nut growing within the narrow confines of their own farms.

The older orchards of the state, many of which are averaging around 800 pounds per acre, and whose performances have inspired the planting of some 8000 acres in Oregon, are all seedling trees. They are paying good profits on their investments and most certainly should not be grubbed out. The objection to the seedlings is that their trees show too much variation in every respect. No two trees in the planting will leaf out at the same time, nor will they produce the same size nuts nor the same shaped ones. Standard grades are demanded by the market in all kinds of fruits, and variation in shape, color or size is taxed. A box of Spys and a box of Newtons may be worth \$3 each, but make up a box of a mixture of all these and it will not sell for half the above price. Just so, only to a lesser degree, with walnuts. This market will pay a premium for uniform products.

About 25 per cent of the older trees in the Dundee district are worthless, because they come out too late to mature a nut, others because they come out too early and get frosted and others because the nuts are too small or too poorly sealed or blight too badly. To bring an orchard of this kind to its maximum production grafting will have to be resorted to. While the seedling trees are still young, the very early and the very late trees should be top-worked with clonions from desirable trees. A clonion from a Franquette that blooms in May can be grafted onto a tardy seedling that leaves out the fourth of July, and the tardy one will thereafter leaf out at the normal Franquette season. As the orchard comes into bearing the individual trees should be carefully observed and those producing fruit that has undesirable characteristics should be worked over.

Just as it pays to eliminate the "boarder" cows from the dairy herd, it likewise pays to eliminate the boarder trees in the seedling orchard. While the seedling orchard is a good paying investment, as we have above stated, still the grafted one

is so superior: in so many ways that we would never think of planting seedling trees.

Grafted trees cost more and are worth more. The grafted orchard will have uniformity in all its characters. The nuts will be quite uniform in size and shape and the trees will bloom at approximately the same time, and will shed their nuts in the autumn at the same time. All the trees will come into bearing within a few years of each other, while in the seedling orchard one tree may commence bearing at six years and its neighbor not until 15 years of age. However, the mere fact that a tree is a grafted one will not insure its crop as being of good size or shape, nor will it necessarily insure that the tree will come into bearing young. These characters are altogether dependent upon the parentage of the clon with which the graft was made. If the clon were taken from a Mayette the resulting tree will be Mayettes and will show all the characters of that variety. If, on the other hand, they are taken from a seedling that had leafed out in July, the grafted trees resulting therefrom would likewise leaf out in that month. It is not the mere grafting that will improve the character of a tree, but instead, the introduction of clons from trees having superior qualities that may result in improvement.

Nursery grafted trees are usually grown on California black walnut roots. The black seedlings are grown for two years in the nursery, being crowded into heavy growth by constant cultivation. The seedlings are grafted at the beginning of their third year. Nursery grafting the walnut is a most difficult operation than is ordinary nursery grafting, and the percentage of success is much less, running ordinarily from 85 to perhaps 80 per cent. The trees that grow from these first grafts are dug in the fall, when their tops are one year old and the roots three years old. Those trees that failed to set grafts are kept in the nursery another year, when they are re-grafted. These old roots, of course, result in a very vigorous growth with the result that the nursery tree is often ten feet high or higher, making large, fine looking trees.

However, the root system, which is four years old by this time, is likewise very large and much of it is left in the ground in digging, hence the tree is given more of a shock in transplanting to the orchard. The stub of the seedling which is grafted at the end of the third year is likewise much larger than it was when the first attempt to graft was made. The walnut is very subject to heart rot, and these large stubs naturally heal over more slowly than do the smaller ones, hence offering more of a chance for heart rot must to obtain entrance into the tree.

We have received some trees from the nursery with exposed stubs two inches in diameter, while others have been completely healed over in the nursery. The latter type invariably are the smaller trees with smaller root systems. For these reasons we would advise against buying trees merely because they are extremely large, but instead would demand those worked on two year-old roots. If it were possible to buy trees worked on year-old roots, as are pines, we would prefer such trees, but none are on the market. The ideal free would be a budded one in which the bud was placed a foot or so above the level of the ground. Reasons for this are discussed under the topic of diseases.

Varieties.
The Franquette is the leading grafted variety in the state. It is probably the most desirable of any of the varieties generally planted at present and is certainly the most thoroughly tried out. It is a very handsome nut of the highest quality. It will produce scattering nuts as young as three or four years, but cannot be expected to do anything commercially until the seventh or eighth year, or often ninth year, where all conditions have not been the most favorable. This variety, while probably the most desirable that we now have, is not an ideal one for our conditions. It blights a little too much, does not yield quite as heavily as we would like, and does not come into bearing soon enough.

The Mayette is second in popularity. It has not been tried out as extensively as has the Franquette. Further trial may rank it ahead of the Franquette. It is possible that there are several strains of this variety being propagated, some being superior to the others, since conflicting reports as to the merits of the variety are heard.

Maylan is a pretty nut that is being planted somewhat, especially by those that feel that another variety should be planted with the Franquette for pollination purposes. It is a heavy producer of pollen and sheds its pollen at the time the Franquette pistillate flowers are in. It is said to be a hard tree to nursery graft.

Clady is a large, rough nut that is planted some. It is not a particularly desirable one, as it has a tendency to bear in clusters and the size of the nuts is not uniform.

Probably 95 per cent of the grafted trees planted in the state during the past six years are Franquettes. None of the above mentioned varieties was originated in this state, the Mayette and Franquette being old French varieties. Just as growers of Oregon produced a cherry and a gooseberry better suited to



A Young Grafted Walnut Tree in the Skyline Orchards, near Salem

WALNUTS AND WEALTH

By S. H. Van Trump, County Fruit Inspector

(Written for Oregon Statesman.)
Sunshine and soil are becoming intensely valuable in the Willamette valley.

More and more as the years roll by are we going to seek out those congenial rural industries whereby man can make a good living out of an ever-decreasing area of the earth's surface.

Ten or 15 acres of the soil of this valley, when wisely planted and industriously tilled, ought to sustain the average family in comfort, even in luxury.

I know of no horticultural enterprise open to the young or middle-aged planter that promises better for the future than an orchard of English walnuts.

The walnut is at present easily the most popular nut in the markets of this country; some dealers reporting aggregate sales of ten times as many walnuts as all other nuts together.

During the year 1915 more than forty million pounds of walnuts were imported into this country. Importations have continued to increase from year to year, and notwithstanding greatly increased home production, all are consumed, and prices continue to advance. Thirty and forty years ago millions of pounds of native nuts were produced in the United States, especially in the eastern, northern and middle western states.

Within recent years these nut forests have practically all been cut down and the soil brought into agricultural tillage. Many of the chestnut groves of the Atlantic coast have been destroyed by chestnut blight. But the demand of the American consumer of nuts has not abated, and that demand, a constantly growing one, must be largely supplied from the cultivated nut groves of the Pacific coast.

At present we have more than 1000 acres planted to English walnuts in Marion county.

This acreage does not include the numerous plantings, and, in the aggregate, very considerable acreage found growing on city lots and about farm homes. Many of the walnut orchards in this county have not paid, owing in some instances to inferior varieties being planted, in other cases failure is due to poor soil or location, or both. Not all our soils or situations are suited to the walnut, but we have plenty of good walnut lands to meet the demands of all planters for years to come.

Many growers have planted worthless seedlings on congenial soils, and all these plantings require to make our climatic conditions than any of the imported varieties, so we can expect that the nut men will produce better varieties of walnuts than any of the above varieties now being propagated. In fact it is very probable that a superior variety is now growing among our thousands of seedlings, and that fame awaits the grower who is observant enough to detect its superiorities.

them highly profitable is that they be grafted over to several of our standard commercial varieties.

Including worthless English seedlings and American blacks there are more than 10,000 walnut trees in Marion county that should be grafted to improved varieties at the earliest possible date.

This is a work that ought to appeal to the bright young men of the farms and the high school boys of the cities.

In planting a walnut orchard the first and most essential point is to secure a suitable soil and location.

This having been determined, to get good stock of the best varieties is next in importance. Many walnut growers of considerable experience still adhere to the notion that seedling trees grown from a good strain of nuts bear better and blight less than grafted trees of standard varieties of Franquette and Mayette.

This is certainly an erroneous view—a view that is doing great injury to the walnut industry in the northwest.

Of 100 seedlings grown from nuts of the same tree, no two will be identical in growth, fruitfulness and type or quality of nut. It is practically impossible to get a uniform grade of marketable nuts from even the best seedling orchard. A serious drawback to the expansion of the walnut business at this time is the impossibility of getting good grafted Oregon grown trees.

Perhaps the best recourse of one who is now ready to plant and cannot secure grafted trees is to plant California black stock and top-work them in the orchard after several years.

The profits in walnut culture are sufficiently attractive to interest the average investor who has the necessary capital to carry the business and is willing to wait a few years for returns. The oldest and most productive walnut trees in Marion county are seedlings which do not bring the highest market price, and yet returns from some of these old trees are very satisfactory. I have seen a number of these trees this fall that have given yields of nuts of from 100 to 200 pounds per tree. Twenty such trees per acre would give a yield of from one to two tons per acre. At \$600 per ton, the average price today, the crop certainly would be profitable.

We know of no earthly possession that can bring greater joy and security into the declining years of the farmer than a flourishing and fruitful walnut grove. Dr. Holmes in his ripe old age said: "I have written many verses, but the true poems that I have produced are the trees that I planted in my youth."

tree is found that is believed to have qualities superior to the named varieties now propagated, it should be reported to the secretary of the Western Walnut association, who will have an examination made by a committee of experts from the association.

THE ACTUAL EXPERIENCES OF SOME OF OUR WALNUT GROWERS

Senator Lachmund's Experience With English Walnuts.

Editor Statesman:
About 13 years ago an active effort was made to encourage the planting of English walnuts in the Willamette valley. Many walnut groves were started only to be abandoned on account of neglect in the care and cultivation and failure to select the proper varieties. All reliable authorities on walnut culture are agreed that the best tree to plant is the one grafted on black walnut stock, as nuts produced therefrom not alone run true to name, but the trees are hardier and come into bearing much earlier than seedlings.

In establishing my orchard of 27 acres in the Kiezer bottom, I first planted black walnut trees, and a few years later grafted them to Franquettes, the scions of which were taken from the famous Vrooman walnut grove of Santa Rosa. While the Franquette is a self-fertile tree, I nevertheless grafted a number of my trees to the Mayette and Eureka varieties for cross-pollination purposes to insure proper and complete fertilization. This season I harvested about one ton of dried walnuts of fancy quality, which I sold to the Roth Grocery company at three cents per pound above the top selling price established by the California Walnut association for its best grade of grafted walnuts.

The ideal land for walnuts is on the first bottom lands and where the top root can reach moisture. Cultivation and pruning is necessary for the first five years, after which they take pretty good care of themselves. I like the Franquette because it does not bloom until the danger of frost is practically over, and, while a somewhat shy bearer, is nevertheless a nut of such fine quality that the additional selling price overcomes its lack of productivity which, however, can be largely overcome through cross-pollination.

Walnuts live to a grand old age. There is a tree in the Vatican at Rome which is 600 years old and bearing a bumper crop. None of us can hope to compete with Methuselah when it comes to longevity, and that being true, my advice to the fathers or sons would be to interest their boys in walnuts and in their dotage they will have a stake, not alone for themselves, but a heritage to pass along to generations to come.

—Louis Lachmund.
Salem, Nov. 5, 1919.

Mr. Flint Would Plant California Native Stock and Graft.

Editor Statesman:
In the spring of 1914 we set out four acres of "nursery four-year-olds" of the Franquette second generation type. Trees made magnificent growth so that during the summer of 1916 we had as fine an orchard as one could wish. October 2 of that year came a hard frost that proved disastrous to trees in full vigor of growth. All the new growth of that year—in many instances four and five feet in length—was entirely killed. The north side of the trunk of the trees was also frozen so that in many instances new trees had to be formed from shoots starting somewhere within 10 inches of the ground, which section of the trunk was not affected, even on the north side.

While only two trees out of 104 were killed outright, the setback to the orchard was most marked. It was not until the end of 1918 that trees began to look once more like real trees. This present year nearly every tree in the orchard showed from 15 to 18 nuts in the spring. I have every reason to believe that had it not even for that untimely and disastrous frost, these trees would now be producing from five to ten pounds of nuts each.

Were I to start another orchard I believe I should secure nuts of

the California native stock, plant where I expected them to remain and grow for about six years, then graft to some well known and tried stock. Personally I believe this to be the better plan for this section.

—Frank Flint.

Mr. Spranger Will Put Out Thirty Acres More.

Editor Statesman:
In regard to your letter and my opinion:
Walnuts would make a long story. We had 200 trees and they are nine years old this January 1, 1920. We gave them the very best care. We had lots of trouble keeping the sprouts down (that is limbs) till they were five years old. The varieties are Franquettes and Mayettes. At five years old, some (about 13 to 15 trees) began to bear nuts; that is, four to 20 nuts to the tree, and in 1918 we got from 100 trees about 300 pounds of Franquettes and a few Mayettes. We sold them at 30 cents a pound. Of course, we cannot talk of a profit—the only profit is raising the orchard.

This year, 1919, we got 1700 pounds, but we have not sold them yet; got them in the dryer at present.

But the walnut price is lower this year on seedling Franquette nuts. So this year I began to graft the trees which had small nuts; and I had good success in grafting. I got better than 80 per cent, and some growth is over nine feet long. Some experiment I made with chicken manure: From those trees around which I put the last three years 50 pounds of chicken manure we got a very good crop; about 30 to 40 pounds to the tree.

To make a long story short: I think of planting 30 acres of black walnut seedling trees, and whenever the best suited time comes I will graft them to the best genuine Franquettes.

—John Spranger.
Salem, R. F. D. No. 6, Box 19.

Mr. Bitney's Seedlings Do Pretty Well.

Editor Statesman:
I have two acres of walnuts. They are 18 years old and seedlings. I harvested 2000 pounds this year, and they are quoted 35 to 36 cents a pound.

If you want information for the new beginner:
Advise grafted trees, and be very choice where you get the grafts or scions. Be sure to get your scions from the tree that is a producer.

Get the scions from the tree that produces quantity and quality and you will be started off right.

—L. M. Bitney.
Woodburn, Or., Nov. 10, 1919.

\$175.50 From Half Acre of Twelve-Year-Old Trees.

Editor Statesman:
I received your letter in regard to the walnut industry. I have found it a good paying investment, for no pests to fight; only have the late variety to escape the early frosts.

From our half acre of 12-year-old trees, which are seedlings, we harvested 400 pounds of first grade nuts, selling at 30 cents per pound, and 150 pounds of seconds at 25 cents per pound. Yours respectfully,
—J. A. Zelnick.
Salem, Or., Nov. 10, 1919.

"The Lazy Man's Crop."

Editor Statesman:
You ask me to tell you by return mail my experience in walnut culture. I am young yet in the business. I have about 250 trees old, ranging from two to four years old. Last year, on three-year-olds, I allowed 12 nuts to mature. This year 14. Rather have growth of timber than nuts up to the present time. A great many of my trees have taken six feet of a growth this year, and are looking fine. Varieties, Franquette.

(Continued on page 6.)

IMPORTANT MEETING OF THE WESTERN WALNUT ASSOCIATION

The Western Walnut association is holding its fifth annual meeting at the Multnomah hotel, Portland; it convened yesterday morning and will hold over today.

C. A. Reed, nut culturist for the United States department of agriculture, Washington, D. C., is present and, besides his address, 22 others are scheduled by experts.

Many exhibits of nuts are shown. This association will soon publish a printed report of the present meeting, and it will be the best thing out in nut literature.

Knight Peary is secretary of the association, and his address is Salem, R. F. D. No. 3. Membership is

the association is \$1, and this includes a copy of the report.

As the walnut industry is one of the foundation primary industries of this section, The Statesman, in its Salem slogan issues, and at other times, will frequently revert to it, in the coming weeks and months and years; and the walnut grower or prospective grower, if not already a subscriber, should subscribe, now, to the Daily. The price is \$5 a year by mail; and The Pacific Homestead, the great western farm paper, will be sent a full year to anyone paying a year in advance to the Daily Statesman.

Strawberries will be the slogan subject next Thursday.

DATES OF SLOGANS IN DAILY STATESMAN (In Twice-a-Week Statesman Following Day)

Loganberries, Oct. 9.
Prunes, Oct. 16.
Dairying October 22.
Flax, October 30.
Filberts, Nov. 6.
Walnuts, Nov. 13.
Strawberries, Nov. 20.
National advertising, Nov. 27.
(And turkeys)
Angora goats, December 4.
Hops, December 11.
Dehydration, December 18.

Sheep, December 25.
Lard, January 1, 1920.
Great cows, January 8, 1920.
Paper mill, January 15, 1920.
Cherries, January 22, 1920.
Apples, January 29, 1920.
Mint, February 5, 1920.
(Back copies of Salem Slogan editions of the Daily Oregon Statesman are on hand. They are for sale at 5c each, mailed to any address.)

HOTEL MARION
SALEM, OREGON

The Largest and Most Complete Hostelry in Oregon Out of Portland

GILE MERCANTILE CO.
Corner Trade and High Streets
Wholesale

Grocery Specialties, Fruit Produce, etc.