

Among the Orchards of the Northwest

Timely Talks on Subjects of Interest to the Horticulturist

 In an introduction to this article Mr. Thornber said it was intended as a general guide for the many prospective apple orchard planters who have recently come into Washington and Oregon from the east, or have changed their vocation and now need definite advice upon apple orchard work. The essential factors are well worth the consideration of all readers.

By W. S. THORNBUR
 Horticulturist, Washington Experiment Station, Pullman.

AND that is slightly higher than the surrounding country is best for orchard purposes, since it affords better drainage, thus lessening the danger of late spring frosts and usually provides good soil drainage. A south or southern slope is better for early or highly colored fruits, while a north or northeast slope is better for late or winter fruits.

Practically all kinds of land in the state are being used for orchard purposes; and while the apple is very cosmopolitan in its choice, yet the deep rich loamy or basaltic soils, free from alkali, hardpan or substratum of shale rock are producing the best and most productive trees. Very sandy, light, dry or even rocky soils will produce short-lived, unproductive trees, while heavy wet clay soils produce large hardy bearing trees.

The greater part of the semi-arid soils of Washington and Oregon, while rich in mineral plant foods, are frequently deficient in nitrogen and humus. These deficiencies should be arranged for if not provided before planting the trees by means of cover crops, green manure or commercial fertilizers.

A good orchard soil possesses at least three strong characteristics: good water drainage; good texture and plenty of available plant food.

Preparation of the Soil

Before starting to plant, the soil should be deeply plowed, thoroughly subsoiled in perfect tillage, as it is very expensive to prepare land or subsoil it after it is planted to trees. If the orchard is to be irrigated, it is an excellent plan to run the water over the land after the treading and leveling is done to determine if it will irrigate as it is intended.

While many orchards are being planted on raw sage brush land and a few on land that is not even cleared yet, it is the experience of the majority of our best fruit men that in the long run it pays to till or even crop the land for one or two years or at least plow under a green crop of rye or Canada peas before planting the trees.

When it is necessary to plant trees on poorly prepared land a small amount of nitrate of soda mixed with the soil as the trees are being planted adds very materially to their growth during the first year after planting.

Nursery Stock

Only one year old, well-grown, but not overgrown trees should be planted. Older trees increase the cost of transportation and planting and are usually headed too high for the best results.

Medium size, not too small a tree, has many advantages over the large or overgrown tree. One of its chief advantages is in having active buds on the lower part of the stem from where we desire our branches to spring.

The difficulty of getting trees true to name has caused many planters to consider the advisability of growing their own trees. Where the person has the necessary knowledge, time and land he can usually grow trees cheaper than he can buy them, however, this is a business of its own and requires more skill, time and patience than the average grower can give to it. Consequently, it is generally cheaper to buy exactly what is wanted than it is to grow it.

Other things being equal, it is best to buy from the nearest nursery as the stock is usually acclimated and better adapted to the location than stock grown under different conditions. Buy only the very best; second class stock and culls are dear at any price and should never be used in commercial orchards. A diseased, stunted or injured tree rarely if ever develops into a first class tree.

It matters little whether a tree has been propagated by budding or by

root grafting so that it is a healthy well grown tree. Usually a budded tree is taller than a grafted tree, but one is as good as the other if the individual is well grown.

Distances Apart to Set the Trees

The soil, the variety, and the section of the state all materially aid in determining the distance at which apple trees are to be planted. In Western Washington and Oregon on rich deep soil where there is abundance of rain, large growing trees like the Northern Spy require at least 35 feet and should have 40 feet.

In Eastern Washington and Oregon in sections where the trees do not grow so large but the question of moisture is paramount, the trees should be set from 28 feet without fillers to 35 feet with fillers. While in

inch wire rings and two pieces of light wire, securely fasten one end of each wire to one of the rings and the other rings one to each of the free ends of the wires. When stretched out these rings must measure from center to center exactly the same length that the trees are to stand apart. After the exact position of the first row is determined and each tree in the row is located by a stake then by means of the above described device a man and two boys can readily locate the rest of the trees by slipping a ring of one wire over the first stake in the row and the other ring over the second stake, then by pulling the two wires taut by the third ring the first tree of the second row is located and by changing the rings to the second and third stakes of the first row the

low notch in each end. By placing the middle notch against the tree stake and driving a stake in each notch at the end of the planting board the tree stake can be removed and the hole dug. Then by placing the board in position again the center notch of the board shows the exact location for the trees. The tree can be planted and the board removed and the tree will align with the rows as the stake did before it was disturbed. The size and depth of the holes depend entirely upon the size of the roots of the trees. A hole less than 18 inches in diameter makes it difficult to tramp the soil as firmly as it should be tramped.

Fillers

Whether or not it is advisable to use fillers in an orchard depends entirely upon the ability of the planter to remove them before they do serious if not permanent injury to the trees. Fillers never do any damage in an orchard until they begin to contend with the permanent trees for food, moisture, sunlight or space. This being true, it is possible to grow fillers in an orchard for several years and do no injury, and at the same time harvest good crops of fruit that will help maintain the necessary expenses. Many growers have been able to pay for their land and all expenses of caring for the orchard by means of the fruit from the fillers before the permanent trees came into full bearing.

Any early bearing good commercial variety of apples would make an excellent filler for the orchard. Almost any variety can be used as a filler; however, it would be of no advantage to use a tardy or shy bearer as a filler. The varieties that are most commonly used are the Wagener, Winesap (common), Wealthy and Mo. Pippin. But since the Wealthy is an early variety in most sections of the state and not considered a first class fruit, it is best not to use it. The Mo. Pippin, while a good bearer and good shipper, lacks quality, hence ability to sell well. This leaves only the Wagener and Winesap as first class commercial apples that are well adapted to use as fillers.

Pears, either on dwarf roots or as standards, make good fillers for apple orchards, in most parts of the state.

In sections where the peach is a commercial success it makes an excellent filler and can be used advantageously in this way. The cherry should never be used as a filler for the apple orchard since it requires entirely different methods of cultivation and irrigation.

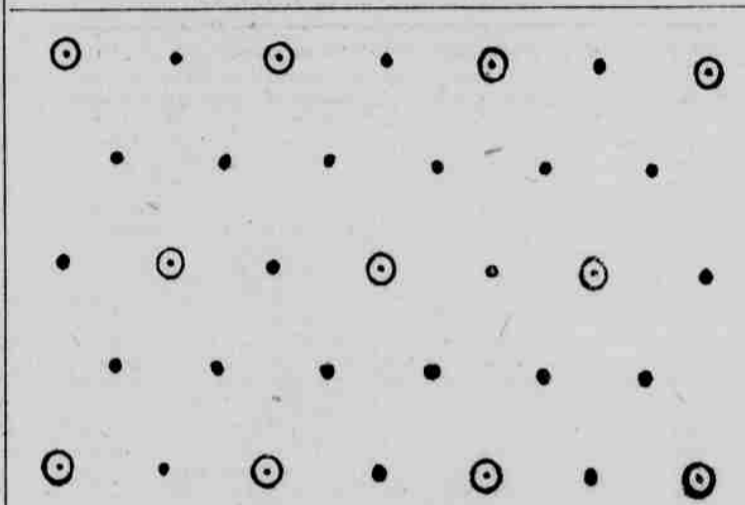


Figure 1. A Good Planting Plan. Circles Represent Permanent Trees, Dots Represent Fillers.

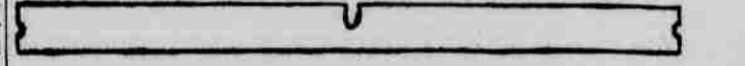


Figure 2. Planting Board

irrigated sections where the moisture element is under the control of the grower, they may be planted at from 25 feet without fillers to 33 feet with fillers.

Planting Plans

There are many planting plans in use in the state at the present time; the square and hexagonal plans are more commonly used than all the rest together. Each of these plans has advantages that the other has not and should be adapted to their special use. The chief advantages of the square plan are that when there is more room between the rows for the growing of cultivated crops and after the trees are grown up they do not form a canopy over the soil so early as when planted by the latter plan. Some growers contend that these openings or "wells" formed by the crowns give healthier trees and more and better colored fruit than where these do not exist in the orchard.

The hexagonal plan gives the greatest number of trees per acre and equally divides the soil area and air space among the trees. In our opinion it is far the most satisfactory planting plan to use for apple orchards.

Locating Positions of the Trees

After thoroughly preparing the ground and all is ready for planting it is best to locate and stake the positions for the trees. This may be done in a number of different ways; however, for the inexperienced planter one of the following plans may be best: For laying out the square and alternate plans secure a No. 100 gauge galvanized wire long enough to reach the entire length of the field; have a tinner solder small washers on to this wire at exactly the same distances apart that the trees are to stand in the rows. Some planters tie pieces of rags or wrap with fine wire and succeed fairly well, but there is too much danger of these markings slipping. Establish a base line to work from and stretch the wire where the first row is to be planted. Set a stake 15 to 18 inches long opposite each washer or marker and move the wire to the next row, being sure always to stretch it the same each time, thus continuing over the entire field. If the square plan is used this is simple enough; but if the alternate plan is used have twice as many washers soldered to the wire and set stakes at alternate marks for each row, thus avoiding pulling the wire back and forth.

In staking for the hexagonal plan take three two to two and one-half

second tree is located, and so forth until the entire field is staked.

A stake about one inch square and 15 inches long will be found very convenient as a marker for locating trees and if six inches of the upper end be dipped in common white wash it will make it easier to see in case there is any aligning to be done.

Digging the Holes

Before digging the holes two position stakes for each tree stake by means of a planting board. This is a 1x4 inch board, six feet long, with a deep notch in the center and a shallow

Appreciations of

SULPHURRO

I had Rheumatism in every joint in my body—tried all remedies—went to several hot springs, but only received partial relief. A friend from Seattle mentioned Sulphurro. I tried it and haven't had an ache or pain since. In three days a catarrhal affection of the throat of years standing was relieved.
N. P. R. HATCH, National, Nevada.

THE Sulphurro Baths I found especially delightful and relief-giving. The Sulphurro foot baths seemed to drive the Rheumatism out of my feet.
H. B. PETRIDGE, Seattle, Wash.

SULPHURRO is a wonderful medicine for Constipation and Indigestion. I would think it a sin not to tell of its merits.
MRS. J. R. SHARP, Mukilteo, Wash.

AFTER using Sulphurro, my hands, which for months had been cold and numb, took on renewed circulation, and my general health improved. I have returned to my work a new man.
JUDGE C. PATTERSON, Rushville, Neb.

I CONTRACTED Rheumatism in the Yukon, having lived there fourteen years. Nothing helped me. Coming outside to Seattle I heard of Sulphurro and it cured me in less than a month.
W. P. BRAYTON, Bellingham, Wash.

I took Sulphurro for Stomach Trouble when I lived in Seattle and it fixed me up fine, that is why I have recommended it to my friends here.
W. G. KENT, Boston, Mass.

Sulphurro is an antiseptic and germicide for internal and external uses. By its use the system is thoroughly cleansed of impurities and germs of disease. A thirty-two page booklet, explaining HOW and WHY, with each 50c and \$1 bottle.