Site Selection and Planting of Prune Orchards

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This fact sheet is designed to give information that may be helpful to growers intending to plant prunes in western Oregon.

As with most orchard crops, returns to the prune grower increase in direct proportion to per-acre yields at any given price level. Although high price levels may occur in years of small crops, net returns to growers who have small yields often are still poor. Since the orchard site greatly influences yield in most years, site selection should be a prime consideration for anyone planning a new orchard.

The depth of the soil, the distance from the surface to an impervious layer or an area of poor drainage, is one of the most important factors for determining the success of an orchard. For profitable prune growing, the soil depth should not be less than 3½ feet.

To determine soil depth it is necessary to dig holes (using a soil auger, post hole digger, or shovel) and examine the soil removed from them. The soil should be examined to a depth of 4 feet and in enough spots in the field to discover variations in soil depth. Poor drainage is indicated by a greyish, yellowish, or reddish mottling of the soil.

The soil type may be indicated on soil maps in the county agent's office. Generally prune trees grow well on the following soil types: recent sedimentary soils of the Newberg and Chehalis series, old sedimentary soils of the Willamette and Salkum series, and the deeper soils in the Melbourne, Olympic, and Aiken series. Soils of the Salkum series are frequently shallow, but some excellent prune orchards are growing on them. The Melbourne, Olympic, and Aiken series are residual soils sometimes called the "red hill soils." The hills soils have often been eroded so that in places they are quite shallow.

Oregon State University Station Circular 175, Identification and Productivity of Western Oregon Soil Types, gives more detailed information concerning these soil types. Young prune trees may grow well on shallower soils or soils which are too heavy such as the Amity series, but as the orchards mature in years of low rainfall and large crops, the fruit may be too small to market.

Root rots, nutritional disorders, and diseases often have been associated with trees growing on poorly drained soils. Within any given field, large areas of shallow soil or poor drainage may occur. If such areas cannot be improved by tilling, they should not be planted to trees because the crops harvested from the trees will not pay for management costs.

A record of previous crops grown on the land might give warning of possible future problems such as oak root fungus (Armillaria root rot). Armillaria fungus will persist as a saprophyte living on dead organic matter in the soil for many years after an orchard is removed. However, its concentration will decrease as the organic matter decays. When replanting orchard sites, it is best to plant in the former row middles, thus avoiding the old tree roots which may be infected with oak root fungus or other disease organisms.

Although spring frosts do not occur frequently in western Oregon, it is nevertheless advisable to avoid "frost pockets" or areas of poor air drainage. For this reason orchards on hillsides escape spring frosts more often than those on the valley floor.

The square system using a planting distance of 20 to 25 feet is commonly used. On rich river bottom land or deep soil where irrigation is used, a 25-foot planting distance is desirable. Planting on a rectangular system with trees closer together in the rows and more space between rows will permit more efficient mechanized harvesting. In orchards with long tree rows, less time is wasted in turning at the ends.

One-year whips generally survive the first summer better than 2-year-old trees, and due to their more rapid growth they usually begin bearing after the same number of seasons in the orchard. Nursery trees with a caliper of 1 to 3 inches and up are excellent.

When trees are received from the nursery but cannot be planted in the orchard at once, they should be removed from their original package and heeled in. This consists of digging a trench, placing the tree roots...
in the trench in a row, and covering them with moist but well-drained soil or sawdust. The trees should never be exposed to freezing temperatures and the roots should be kept moist.

Details of laying-out and planting a prune orchard are essentially the same as described for pears in Extension Circular 672, Laying Out the Pear Orchard. Prune trees may be planted in winter or early spring whenever the soil is not too wet. Planting with the bud union 4 to 5 inches above the ground level will prevent rooting of the scion variety. Also, the Pacific peach tree borer is less likely to become a problem than if the union is below ground.

Often the trees will settle in the holes; so that if the bud union is at ground level at planting, it will be below ground level later. Scion rooting is undesirable because the desirable characteristics of the rootstock may be lost. Scion roots often send up many suckers which are a nuisance in the orchard. If scion rooting occurs with prune on peach roots, the trees will lose the resistance to bacterial gummosis imparted by the peach roots.

After planting, trees are headed back to a height of 24 to 30 inches in order to balance the top with the roots. One advantage of lower heading is that fruiting limbs will be lower and consequently easier to spray and prune. Higher heading facilitates movement of equipment under the trees which is particularly important with mechanical harvesting. Trees headed too high lean with the wind too easily. If branched trees are planted, the branches should be cut back to stubs or removed entirely.

Fertilization in the first year of growth is not normally recommended because of the possibility of root burning and the fact that it tends to favor top growth more than root growth.