Managing Young Prune Orchards

Prepared by ROBERT L. STEBBINS
Extension Horticulture Specialist
Oregon State University, Corvallis

This fact sheet is intended to give information that may be of use to growers with young, nonbearing prune orchards in western Oregon. After the site has been selected and the trees planted, the principal difference between a successful orchard enterprise and an unsuccessful one lies in the degree to which proven practices of good management are applied. For maximum benefit, the application of skillful management should begin at planting.

Soil Management

The basic objective of soil management is to maintain an environment favorable to vigorous root growth. Ample moisture, oxygen, and mineral nutrient supplies are the most important aspects of such an environment. Good soil structure, where the soil tends to be in small crumbly aggregates with much pore space, helps to provide these three basic requirements. Cultivation is detrimental to soil structure, and it should be done only for the following reasons: (1) to incorporate a cover crop; (2) to suppress weed growth; (3) to prepare for harvest; and (4) to plant a cover crop.

Since cultivation is detrimental to soil structure, less frequent and more shallow cultivation permits the maintenance of better soil structure. Also, due to the greater availability and concentration of mineral nutrients in the surface soil, shallow cultivation is preferred because it permits “feeder root” development in this zone. Use of a harrow, roto-tiller, or knife weeder for weed suppression is less damaging than disk ing.

Very little moisture is lost from the soil because of direct evaporation. Almost all of the moisture lost is by passage through plants. Therefore, the theory that a “dust mulch” will save soil moisture is a false one.

A winter cover crop is desirable for the following reasons:

• It prevents soil erosion.
• By slowing water run-off, it increases penetration.
• The decaying cover crop improves soil structure.
• When well decayed, it adds some nitrogen and other nutrient elements.

Weed Control

If not suppressed, weed growth in the summer around prune trees will seriously retard growth and may delay the beginning of commercial cropping by several years. The two principal means of weed suppression are cultivation and herbicides. Because hoeing around nonbearing trees is a laborious and costly method of weed suppression, use of the following herbicides might be considered:

<table>
<thead>
<tr>
<th>Weeds</th>
<th>Material</th>
<th>Rate</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Grasses</td>
<td>Dalapon</td>
<td>10 lbs. of</td>
<td>Spring—once</td>
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<tr>
<td></td>
<td></td>
<td>85% in 60-100 gal. water per acre</td>
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<tr>
<td>Most non-grasses</td>
<td>Karmex</td>
<td>5 lbs. of</td>
<td>Early fall</td>
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<tr>
<td></td>
<td>Duiron or Simazine</td>
<td>80% in 20 gal. water per acre</td>
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<tr>
<td>All</td>
<td>Weed oil</td>
<td>(for a short time)</td>
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Caution: Use herbicides only in the areas around young trees not readily accessible to tillage equipment. Spray the soil surface; avoid spraying on trees. Be careful not to exceed the rates given.

Mulches can be used to suppress weed growth but they often harbor rodents. Sawdust 3 to 4 inches thick, plastic, or even tar paper can be used.

Training and Pruning

The objective of a training system for young prune trees is to develop a tree which has a sturdy framework and one which is easy to spray and harvest. The development of only three main scaffold limbs will greatly simplify mechanical shaking by reducing the number of points of attachment. For maximum crotch strength, the main scaffold limbs should originate 4 inches or more apart on the trunk. All pruning has a dwarfing effect and tends to prolong the nonbearing period in proportion to the amount of wood removed. It is best to select the main scaffolds in the first growing season and remove or severely head-back all other shoots. If the shoots that are to form scaffold limbs are 20 to 24 inches long and still growing in the first summer, it would be advisable to prune off the tip 4 to 5 inches in order to promote lateral branching. After the main scaffold limbs are selected, only a light thinning out is required to maintain a reasonable balance between the growth of the three main limbs.

Fertilizers

Fertilization can be considered to be of minor importance in the management of young prune orchards. Usually the young trees make a sufficient amount of growth without application of fertilizer.

The risk of "burning" young trees with fertilizer in the first season is great, and for this reason it is not advisable to apply fertilizer in the season of planting. If the trees make no more than 10 to 12 inches of new shoot growth in the first season, and if the poor growth cannot be attributed to other factors such as weed competition or drouth, a light application of fertilizer in the dormant season might be helpful. In western Oregon fertilizer trials, nonbearing prune trees have failed to show a response to potash or phosphate fertilization. Usually the only element which increases the growth of nonbearing trees is nitrogen.

Nitrogen deficient trees will cease growth early in the summer. They will have small, pale leaves and the surrounding weeds will be stunted. If these symptoms are noticed, about $\frac{1}{2}$ pound of actual nitrogen per tree applied in the dormant season will suffice for trees 1 to 2 years of age, and $\frac{3}{4}$ pound per tree for trees 3 to 4 years old.

Pest Control

Young orchards frequently are attacked by rodents, insects, deer, and occasionally rabbits. Often these pests attack suddenly, inflicting serious damage and materially delaying the first commercial crop.

Sometimes deer can be discouraged by hanging bags of raw blood and bone meal in the trees. These often work effectively when fresh, but they should be replaced two or three times a year. Numerous scents that can be sprayed on or around trees have failed, but a few success stories are reported.

Vigilance will detect the work of gophers before they become a problem. Baiting and trapping are the common means of control.

The flat-head apple tree borer generally enters the trunk of young trees through sunburned areas. Protecting the trunk with a board, cardboard tree protector, or white wash on the southwest side is an effective preventative measure.

The peach and prune root borer can be a very serious pest of both peaches and prunes. The presence of the insect larva is indicated by blobs of pitchy sawdust about the base of the tree. The insect can be controlled by an application of a recommended insecticide to the ground around the trunk about July 15 and a second application 3 to 4 weeks later.

Disease Control

If bacterial canker (Pseudomonas syringae) attacks young prune trees, areas of dead bark will appear on the trunk. The cankers are usually on the south side of the tree and appear as dark sunken areas with occasional cracks. A fall spray of 12-12-100 Bordeaux mixture may be of some benefit in the control of this disease.

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