

# Soil Preparation

Many aspects of soil preparation are important to the vigor and longevity of blueberry plantings. The management of soil pH is important throughout the life of a blueberry planting. Blueberry plants are more vigorous, have more uniform color, and are more productive when growing in acid soil conditions - below pH 5.0. Since pH is frequently between 7 and 8, or even higher in many potential California blueberry-growing areas, careful attention to soil pH management is important. In those instances where soil pH is above 8.4, excess sodium may also be a problem,

Blueberries do not tolerate poor drainage and root rot diseases and overall poor vigor will adversely affect blueberries in poorly drained soils. Fruiting blueberry plants are intolerant of drought or moisture stress for even short periods, and overall most consistent yield and quality come from fields with consistent moisture supply. Blueberries should be planted on raised beds in most soil situations. In well-drained sandy soil, beds may not be needed but organic matter should be added. For sandy soils, apply 5 tons per acre of compost or dried manure in 3-4 ft wide bands over the rows and incorporate the material to a 6-8" depth with a disk or rotovator. This organic material may be combined with sulfur additions used to acidify the soil (see acidification section).

For clay loam or clay soils, additional soil amendment material should be incorporated into the raised bed to help improve porosity, aeration, and drainage. Coarse wood-waste, saw dust, or rice hulls are used successfully in California as a soil amendment. In extreme examples - as in Florida where pine bark mulch is plentiful - the plants are established in windrows of pure mulch. In California, liberal amounts of coarse wood waste are routinely applied and incorporated into the soil for blueberries on heavy soils. A minimum of 100 cubic yards of coarse wood waste should be applied and incorporated in a band 3-4ft wide over the row. Some growers have also successfully used wood waste filling a V slit opened in a raised bed and the plants established in the furrow. As with the compost additions in sandy soils, the wood waste can be combined with the sulfur applied to acidify the soil.



Figure 1. Raised beds and incorporation of wood waste improves soil drainage for blueberries.

The soil should be sampled and analyzed by a reliable soil-testing laboratory prior to planting. The soil analysis will determine the optimum amounts of major and minor elements to apply. All of the major and minor elements with the exception of nitrogen should be incorporated into the beds using fertilizer in granular form prior to planting. This will be the most cost effective method of assuring adequate fertility for the new blueberry planting. It is only necessary to add fertilizer, sulfur, and other amendments in the 4 ft wide strip of bed centered over the plant row.

The optimum amounts of major and minor nutrients, the sulfur required for acidifying the soil, and any woody amendments can be incorporated into the beds when the beds are prepared prior to planting. This can be done as early as possible prior to plant establishment to allow time for the sulfur to acidify the soil. Preparing the beds ahead of time will also allow time for initial weed control. Irrigate the beds and then allow 2-3 weeks for weeds to emerge spray with glyphosate (Roundup) or a similar broad spectrum systemic herbicide. Repeat this a second time and few if any further weeds should emerge if the soil surface is not disturbed. At planting, only disturb the soil in the planting holes and mulch the entire surface after planting and few weed problems will follow.

Soils should be retested every 3-4 years for nutrient availability. Additional amounts of major or minor nutrients may be required in later years. Fertilizers can be applied to established plantings by incorporating granular fertilizer under the surface mulch (more economical) or injecting through the irrigation system (greater ease of application and more rapid availability).



Figure 2. Wood waste can be applied over the soil surface as an organic mulch.

