

Site Preparation and Layout

Good site preparation and layout are extremely important in successfully establishing fruit plantings. Eliminating potential problems before planting will reduce money and effort needed in later management practices for this long-term investment.

Preparing the Site

The following suggestions about site preparation apply mainly to the commercial or hobby producer, but some have equal application to the home gardener.

- Sample for nematodes. If damaging nematodes are found, this site may have to be avoided for a period of time until it can be placed into a grass or other plant rotation for 1 or more years. There are no longer any chemicals registered to kill nematodes in home gardens. Home gardeners may try solarization of site during summer months, using plastic. Commercial growers do have nematicides available for use but are also using nonchemical control methods.

- Remove stumps, large rocks, and other debris from the site.

- Plow and subsoil the area to remove as many roots and smaller rocks as possible. Roots left in the soil can contribute to root-rot problems in fruit trees.

- Test the soil, and apply lime, phosphorus, and other fertilizer nutrients according to soil test recommendations. Apply lime and fertilizer if needed in the fall. Lime is very seldom needed for blueberry plantings because blueberries require a strongly acid soil with a pH of 4.0 to 5.5.

- Apply about 50 to 75 percent of the lime, phosphorus, and other elements on the surface, and plow as deeply as possible to get them into the root zone. Deep-plowing of lime and fertilizer is especially important for tree fruit. After deep plowing, apply the remaining 25 to 50 percent of these chemicals according to soil test recommendations, and disc them into the surface 6 to 10 inches.

Determining Home Orchard Size

Not all people enjoy all fruits. Evaluate your family situation, and plant those fruits that best meet your needs. The number of plants that will supply the annual needs for fresh and processed fruit for a family of five is listed in Table 1.

Table 1. Number of Fruit Plants to Meet Annual Needs of a Family of Five

Fruit Type	Number of Plants
Tree Fruit	
Apple, semidwarf	5 to 8
Pear and Asian pear	3 to 5
Peach and nectarine	5 to 8
Plum	5 to 8
Cherry	4 to 6
Persimmon	3 to 4
Fig	3 to 5
Small Fruit	
Bunch grape	4 to 6
Muscadine grape	4 to 6
Blackberry, upright or trailing	12 to 15
Raspberry	12 to 15
Blueberry	8 to 12
Strawberry	200 to 300

If you choose to produce several fruit types, you will most likely have more fruit than your family can use. For example, just five semivigorous apple trees 10 years of age can easily produce 35 bushels annually. Therefore, only plant what you enjoy eating, and avoid the chore of caring for more plants than you really need.

Laying Out the Tree Fruit Orchard

After preparing the site and determining the size of the orchard, you must next decide on a plan or arrangement for the orchard. For a fairly level site, use the rectangular or square design. If the land is rugged and steep, follow the contour of the hillside.

The square and rectangle are the most commonly used systems for laying out orchards (Figure 1). In the square design, a tree is set in each corner of a square, using the recommended spacing. The rectangular design is used to set trees at unequal distances, as for example with dwarf apples, using a 9- by 15-foot rectangle to set trees 9 feet apart in one direction and 15 feet in the other.

Most growers prefer to arrange their orchards in straight rows for ease of working, but in some cases, contour systems may be needed (Figure 2). On steep or rugged sites, contour systems help prevent or reduce erosion and conserve moisture. Since rainfall,

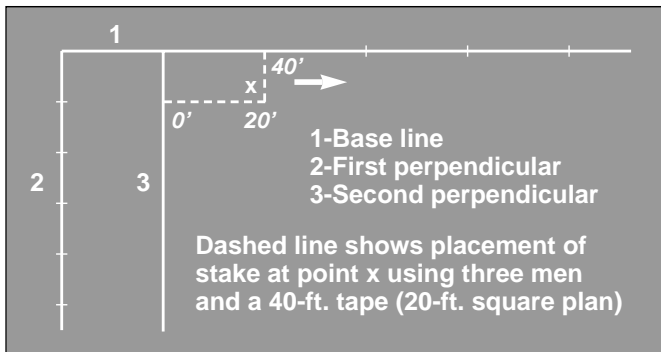


Figure 1. Laying out a square or rectangular orchard

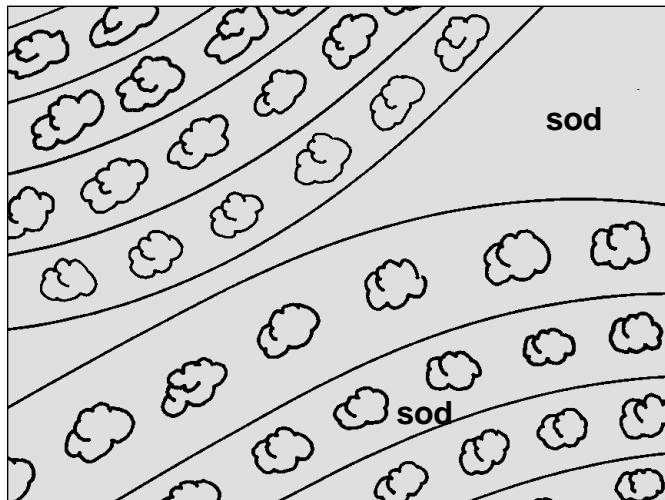


Figure 2. Contour planting using parallel rows or terraces should be used where soil erosion may be a problem.

slope, soil, and other conditions vary in different parts of the country, growers use various arrangements. At the present time, growers use terraces in contour systems when additional erosion control is needed.

In commercial operations, no matter which orchard layout is used, a minimum 25- to 30-foot turnaround should be left at the ends of rows to allow easy movement of any equipment and machinery.

Laying Out Small Fruit Plantings

Many of the same guidelines for laying out a tree fruit orchard also apply to small fruit plantings, such as grapes, blackberries, and blueberries. Straight rows are preferred, although the contour system and terraces, where needed, work equally as well. Strawberry plantings are laid off with tractors, using beds spaced 5 feet apart when plasticulture is used. Matted-row systems are generally laid off using 3½- to 4-foot rows with or without bedding.

Determining Planting Distances

Proper spatial arrangement is very important in new plantings. Aligning the trees carefully not only improves the orchard's appearance, but it also makes orchard operations easier.

Individual tree or plant sites can be indicated with a stake. Use the recommended planting distances in Table 2 to help determine spacing of trees within the layout you plan to use for planting.

The number of plants required to plant an acre can be determined by multiplying the distance between trees in the row by the distance between rows and then dividing the figure into the number of square feet in an acre (43,560).

Table 2. Recommended Planting Distances

Fruit Type	Planting Distance (in feet)
Tree Fruit	
Apple, semivigorous, freestanding (MM106)	Nonspur: 15 × 20, 15 × 25 Spur: 10 × 18, 10 × 20, 12 × 20
Apple, semidwarf, freestanding (M7A)	Nonspur: 12 × 20, 15 × 20 Spur: 9 × 18, 10 × 20
Apple, semidwarf, trellised (M26 and M7A)	Nonspur: 8 × 16, 10 × 16 Spur: 6 × 16, 8 × 16
Apple, dwarf, trellised (M9)	Nonspur: 8 × 12, 9 × 14 Spur: 6 × 12, 7 × 14
Pear, common (hard) and European hybrids	20 × 20, 25 × 30
Asian pear	12 × 20, 15 × 20
Peach	20 × 20, 15 × 20
Plum	20 × 20, 15 × 20
Cherry	20 × 20, 25 × 25
Oriental persimmon	12 × 20, 15 × 20
Fig	15 × 15, 15 × 20
Small Fruit	
Bunch grape	8 × 10, 8 × 12
Muscadine grape	12 × 20
Blackberry	Space rows 10 to 12 feet apart. Space rooted plants 2 to 4 feet apart, or root pieces (erect types) 1½ feet apart within rows.
Raspberry	4 × 10, 6 × 10
Blueberry, highbush	5 × 10, 6 × 10
Blueberry, rabbiteye	6 × 12
Strawberry	Hill system: 1 × 3½ Matted-row system: 1½ × 3½ Plasticulture: 2-row, 5-foot bed with 26- to 30-inch crown. Space plants 12 inches apart within and between rows.

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