

Growing Peaches in Mississippi



Peach production in Mississippi can be profitable. Your success with fruit planting will depend largely on site, variety, soil management, pruning, fertilization, pest control, and other cultural practices.

Commercial Orchard Size

The size of a commercial orchard depends mainly on market outlets. For local markets, a small orchard of 1 to 5 acres can be highly profitable. This size orchard will justify buying a small power sprayer and other needed equipment.

A commercial orchard of 10 to 40 acres will justify a more efficient power sprayer and other equipment, such as grading and packing machinery.

Orchard Soil Types

Peach trees will grow well on a wide variety of soils if they have adequate water drainage, both surface and internal. The red and yellow soil types grow peaches well, provided adequate moisture is available. Since the heavier silt loams grow a vigorous tree, orchards on this type of soil should have wide spacing, both between and within the rows. Adequate water drainage may be a problem on these heavier soils.

Never select soils with a high water table, a natural hardpan, or subsoils of either deep sand or tight clay for a peach orchard. Such soils have poor internal drainage and are more subject to drought.

Have your soil tested. Soils used for peach production should not have a pH higher than 6.5 for best results. Peaches thrive best at a pH between 6.0 and 6.5.

Orchard Site

Site selection can greatly influence the success of an orchard. Cold air flows downhill, so avoid low frost pockets. The most desirable orchard site in the hill area is a turtle-back rising from northwest to southeast, sloping to the northeast and southwest, and having no natural barriers in any direction. Locating such a site of considerable acreage, however, is almost impossible. Most any orchard site will contain undesirable areas. You can offset these site disadvantages to some extent by locating varieties having different chilling requirements and different degrees of cold hardiness in the proper positions on the site.

A small difference in orchard temperature of 2 to 3 degrees may mean the difference between a partial or full crop and no crop at all. The situation and location of a site may mean a much greater difference than 2 to 3 degrees.

For instance, buds or blossoms on trees located on a northwestern slope may survive a severe cold wave, provided there are no natural barriers such as a forest or hills, while those on a southern slope may be destroyed. There are two reasons for this happening especially at, or just before, blooming:

1. Many of the spring freezes in Mississippi move in from the northwest and are usually accompanied by winds or at least a slight breeze. At the same time, the orchard soils are usually warmer than the cold air above. These soils are continually giving off heat, which tends to rise above the level of the orchard. Cold air, which is heavier than warm air, tends to move in under the warmer air unless breezes create turbulence. This air movement causes a mixture of warm and cold air to stay within the orchard. This usually happens on a northwest slope. On a southern slope, however, the cold air moves over the higher ground on the north or northwest side and then settles within the orchard on southern slopes. It displaces the warmth that is radiated from the soil while the northerly breezes are passing above the orchard.
2. Trees on a southern slope may be more advanced and more susceptible to low temperatures. These trees receive more heat during daylight than those on the north or northwestern slopes. During blossoming, the sun is to the south. Its rays are cast directly upon a southern slope, causing several-degrees-higher day temperatures than those on the northern slope in the same orchard. The additional heat causes more rapid swelling of the buds and a speeding of tree growth.

Variety Selection

Consider these factors when choosing varieties:

- **Chilling Requirements.** Dormant peach trees require a certain number of hours of cold at 45°F or lower during the winter, and before about February 15, to grow normally in the spring. The chilling-hour requirements vary widely with varieties. In general, growers in south Mississippi (south of US Highway 84) should plant only varieties with a short chilling requirement of 750 hours or less. In central Mississippi (between Highways 82 and 84), growers should include both long- and short-chilling varieties (950 to 750 hours). In north Mississippi, they should select long-chilling varieties for most of their plantings.

- **Ripening Seasons.** The dates in **Tables 1 and 2** are for the Mississippi State University area. The ripening dates at Holly Springs, which is 100 miles north, are usually 10 days later. The ripening dates south at Crystal Springs are about 10 days earlier. A succession of varieties may provide fresh peaches for 8 to 10 weeks.

Tree Sources and Tree Care Before Transplanting

Buy trees only from reliable nurseries. If you do not know of a nursery, ask someone at your county MSU Extension office. Even though you buy your trees from a reliable nursery, this does not mean your trees will always arrive in good condition.

Late delivery, poor transportation, unreliable nurseries, and diseases present before shipping can cause trees to arrive in poor condition, or occasionally dead or low in vitality. When your trees arrive, do not accept the shipment until you have carefully examined every tree. Open the package and examine the trees for any diseases, insects, or injuries common to nursery stock. Cut some of the twigs and see if the wood is green. Buy only sound, vigorous trees.

Get your trees as soon as you are notified of their arrival. Do not be responsible for their drying out and dying because you have neglected to call for them.

After examining the trees closely, heel them in, even if you expect to set them the next day. Dig a trench 10 to 12 inches deep and long enough to accommodate all of the bunches without opening them. Remove all packing and burlaps. Stand the bunches in, and lean the tops over halfway to the ground. Sprinkle loose soil over the roots and work it well through them first. Then finish filling the trench. Be sure all roots are covered, and then tramp lightly. **Never allow the roots to dry out.**

Site Preparation

It is desirable to turn under a cover crop in the fall before planting the orchard. In the fall, subsoil and pulverize thoroughly. This fall preparation will make planting easier and give the trees a well-prepared soil to grow in.

Terrace a hillside before or during the final soil preparation. Build broad-based terraces 15 to 20 feet wide. Their maintenance is essential to erosion control and good management.

Laying Out the Orchard

Contour System. Lay out the orchard by using stakes to mark all of the tree locations. In the contour system, first establish the tree rows on top of the terraces. They should be no closer than 8 to 12 feet to the terrace channel. Line the trees up as much as possible following the contour of the terrace. Make the curves as gradual as possible, avoiding abrupt angles that would interfere with cultivation. Place a tree row on each terrace.

The rows between terraces may be laid off with a measuring tape. Locate the first tree on the row below the terrace the desired distance from the upper row (assume 25 feet) and about half that distance from the edge of the orchard. Place a stake at this location. While one person holds the end of the tape at this stake, let a second individual take the tape on 25 feet and measure off this distance on the new row. A third person will take the tape

Table 1. Varieties recommended for areas in Mississippi north of Hattiesburg.

Variety	Freeness of Stone	Chilling Requirement (hours)	Average Ripening Date in Mississippi
Springold	Cling	850	May 30
Bicentennial	Cling	700	June 4
Surecrop	Cling	950	June 10
Sentinel	Semi-Free	850	June 17
Harvester	Freestone	700	June 29
Redhaven	Freestone	950	June 27
Majestic	Freestone	800	July 9
Ruston Red	Freestone	850	July 20
Dixieland	Freestone	750	July 22
Redskin	Freestone	750	July 25
Quachita Gold	Freestone	850	August 3
La Jewel	Freestone	850	August 8

Table 2. Varieties recommended for areas in Mississippi south of Hattiesburg.

Variety	Freeness of Stone	Chilling Requirement (hours)	Average Ripening Date in Mississippi
Florida King	Cling	450	May 18
Bicentennial	Cling	750	May 26
June Gold	Semi-Free	600	May 30
La Pecher	Semi-Free	450	June 6
Idlewild	Semi-Free	550	June 9
Harvester	Freestone	750	June 15
La White	Semi-Free	650	June 18
La Gold	Freestone	700	June 19
La Festival	Freestone	450	June 25
La Feliciana	Freestone	550	July 5
Dixieland	Freestone	750	July 20

on 50 feet and thus measure 25 feet from the upper row. The angle formed should be an approximate right angle. The measurement must be from the upper row and not necessarily from another tree in the upper row. Repeat this process until the entire orchard is laid out. It is a good idea to walk down each row and move any stakes that form abrupt angles.

There are almost always some areas between terraces that cannot be filled by full-length rows. Put in short rows to fill the space as completely as possible. It will sometimes be necessary to space the trees a little farther apart or a little closer together to use these areas properly.

Square System. About the simplest way to lay out an orchard by the square system is to establish a base line on one side of the orchard. Place a tall stake at each end where the first row of trees is to be located. Then measure the distance for the trees along this line and place a stake for each tree. Be careful to place the stakes in a straight line. Then establish border rows at each end and on the opposite side of the orchard.

Number of Trees per Acre

A standard practice is to have 100 or more trees per acre. Peach trees in high-density plantings will require irrigation. **Table 3** will help you determine the number of trees per acre.

Spacing in Feet	Number of Trees per Acre
15x15	193
16x16	170
16x18	151
16x20	136
18x18	134
18x20	121
18x22	110
20x20	108
21x20	103
22x20	99

Planting the Trees

Trees can be set anytime between December 15 and February 15. Be sure, however, that the ground is in suitable condition for planting. The latter part of January is probably the best time.

Be sure to keep varieties separate. It is best to plant each variety in one row or block. The varieties should usually be arranged in the orchard according to the time they ripen. This will aid in spraying and harvesting.

Once the rows have been prepared for planting, the trees must be spotted on the row. In level orchard sites where rows are of uniform width, the trees should be located on a check and in line from all directions. Usually three people are needed to keep the trees in line and stake

locations. With the contour system, the trees cannot be placed in line, one row with the other, but should be given uniform distance between trees within the row.

Dig holes large enough for the complete root system of the trees. Remove all broken roots before planting. Cut them cleanly so they will heal readily. Plant the trees about the depth they grew in the nursery or 1 to 2 inches deeper. A good planting method is to put some loose soil in the bottom of the hole, place the tree in the hole, fill the hole about three-fourths full of soil, pour in water so the soil settles evenly around the roots, and finish filling the hole with soil. These are two important points to remember when transplanting:

1. Do not let the roots dry out. Keep them covered with burlap.
2. Do not put nitrogen fertilizer in contact with the roots.

Fertilization

Fruit trees generally have a deeper root system and draw plant food from a much broader soil area than most annual crops. The perennial growing habit of fruit trees and their ability to store nutrients from one year to the next, coupled with a greater need for specific elements, demand fertilization practices differing considerably from those used for field crops.

Fruit trees require the major elements of nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur. Minor elements needed include manganese, boron, iron, zinc, and copper. Many of these elements are deficient in commercial orchards at differing times and places. Since you can detect the usual deficiency signs, a few of these symptoms will be mentioned here.

Nitrogen is the element most often deficient in orchard soils. Lack of nitrogen can cause pale green and smaller leaves than usual, lack of terminal shoot growth, small and highly colored fruits, and early fall coloring and loss of foliage. Frequently, the current season's bark growth in the peach exhibits a reddish fall tinge.

Excessive nitrogen may cause excessive shoot growth, with very large green leaves and poorly colored fruits that ripen late and are of poor quality. The lighter soils in areas of high rainfall or that receive irrigation may require more applications of nitrogen than the heavier soils. The lighter soils are usually lacking in organic matter, which is needed for nitrogen storage.

Phosphorus deficiency in the peach causes a purplish-bronze leaf color. This condition has been found in trees where cultural practices and fertilization have been completely neglected.

Potassium deficiency is not found in the peach as often as nitrogen, but it is fairly common, especially in the lighter soil types. The lack of potassium greatly reduces the quality of the fruit. Symptoms of this deficiency generally appear in late summer. They are intensified by heavy bearing. There is a longitudinal upward rolling of leaves, which is most evident on terminal growth. The first few basal

leaves on a shoot are frequently normal. Rolling is more definite and distinct nearer the terminals. Leaves are pale green and show some scorch along edges when rolling is severe. Fruit is small, poorly colored, and ripens earlier than on normal trees.

Since flowers and fruit are produced on the previous season's growth, it is desirable for them to make at least 18 to 24 inches of new shoot growth each year.

Ordinarily in the Delta, nitrogen alone is considered sufficient. Unless soil tests indicate a need for phosphorus and potassium, apply one-fourth pound of 33 percent nitrogen fertilizer, or its equivalent, per tree, per year of age, up to 3 pounds for mature trees. In other areas, apply at least one-half pound of 13-13-13 (or its equivalent in higher analysis fertilizer) per tree, per year of age, until 10 years. Add one-fourth to one-half pound of 16 percent nitrogen, or its equivalent, per tree, per year of age. After 10 years, continue to apply the maximum rate.

Apply all of the complete fertilizer and two-thirds of the nitrogen in late February or early March, before growth begins. Apply the rest of the nitrogen in early July. Broadcast all fertilizer around the tree, extending well beyond the spread of the branches.

Weed Control

Clean around newly transplanted trees through the spring and early summer. You can accomplish this by chemical weed and grass control or by cultivation. Shallow cultivation of the row middles together with chemical control of weeds and grasses in the vicinity of the tree trunk seem ideal during the first year. After the first year, chemical weed control within the tree row and sodded middles gives the best results. See your county MSU Extension office for recommended herbicides.

Chemical recommendations may change from year to year. For this reason, neither specific chemicals nor rates are recommended in this publication. Please check with your Extension county office for weed control recommendations for Mississippi.

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