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**COOPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS**

UNIVERSITY OF FLORIDA DIVISION OF AGRICULTURAL
EXTENSION AND UNITED STATES DEPARTMENT
OF AGRICULTURE COOPERATING

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PEACH GROWING IN FLORIDA

By W. L. FLOYD

The peach grows well on a sandy loam or sandy soil. Florida has, therefore, much land suitable for peach orchards. There

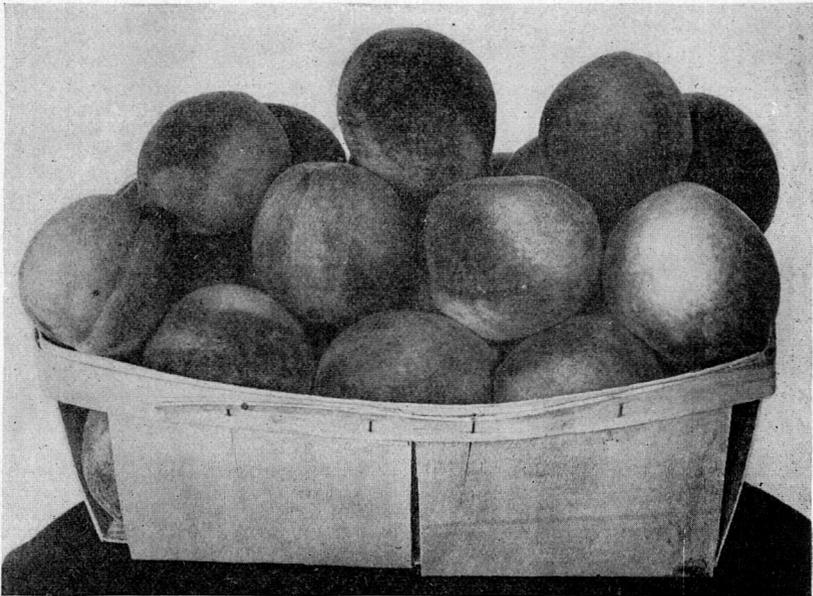


Fig. 1.—Basket of Florida grown peaches

should be present a good supply of humus and plant food. The coarse grained sandy soil with very porous subsoil is not satis-

factory because it does not hold water and plant food enough to insure a strong vigorous growth of the trees.

Peach blossoms open in Florida usually during January and February, and are consequently liable to damage from frost. The orchard should if possible be located on a slight inclination so that the cold air may drain down to lower levels. The gentle, almost imperceptible slopes found in Florida are to be preferred to the level areas. It makes but little difference in what direction the ground inclines, but it is important that the orchard is not at the bottom of a long slope, nor that there is any obstruction on the lower side of the orchard to bank up cold air.

A location on the south or southeast side of a lake is desirable because our coldest winds come from the north or northwest and are warmed as they blow over the water in winter and the blossoms are less liable to be damaged. If water protection cannot be secured, a windbreak of trees ought to be 50 to 60 feet away from the orchard on the north or northwest side. It is unwise to depend on a natural block of woodland owned by a neighbor as he may decide to cut it when the orchard most needs it. The slope may be such that the windbreak is on the lowest side of the orchard, and in such cases it is important that it be open at the bottom to allow the cold air to drain off.

PLANTING FOR HOME ORCHARD

Every home in Florida should have with it a small orchard of peaches. They can be so readily grown and so little difficulty is experienced in producing crops that no one should be without them. If it is not possible to buy trees, it is easy enough to get seed from good varieties in the neighborhood.

In selecting a site for peach trees in the home orchard, one has less choice in the matter than when selecting a site for the commercial orchard. It is necessary to have the trees convenient to the house and also to have them on a site that can be readily cared for, both in the way of fertilizing and cultivating. A long straight row will be found much more economical to take care of than several short ones. Special care needs to be exercised in selecting land that is pretty certain to be free from rootknot, as this is the greatest enemy of the peach tree, and it is so frequently present about the home site. If it is possible to do

so, a site should be selected where clay comes near to the surface of the soil, as this is less likely to be infected with rootknot and at the same time is more suitable to peach trees.

If poultry can be kept penned around the peach trees the number of curculio will be greatly reduced, especially if the flock is large and has free range under the trees. Pigs will also eat many of the fallen fruits and thereby destroy many of the grubs of the curculio, which is one of the severe enemies of the fruit.

Thruout the entire state of Florida, even into the extreme southern part, there are a good many seedling peach trees which bear fine crops of fruit. For the most part, the late ones belong to Spanish varieties, also called native, and while not of especial value for commercial purposes, are quite useful in supplementing the fruit for the home. Waldo and Jewel are good early varieties, followed about a month later by Angel, Honey and Triana. Dorothy N makes a good peach for mid-season. There seems to be no good late peach that can be relied upon for the home orchard in Florida.

PREPARATION FOR PLANTING

Land that has been completely cleared of all trees and stumps and cultivated for a year in velvet beans or beggarweed is best for peaches. However, that which has not been completely cleared, or that which has been cultivated longer, will give good results if properly fertilized and cultivated. If a crop of velvet beans or other cover crop is grown it should be cut up with a disc harrow, then turned under with a turn plow in December. In a few weeks follow with the disc again; if it is run over with a planker after this it will be in better condition for laying off, and the ease in walking over the field as well as accuracy in locating the positions for the trees will pay for the extra trouble.

LAYING OFF THE LAND

Peach trees are short lived, therefore may profitably be grown as fillers in a young orange grove. A good arrangement in this case is to set the peach trees in rectangles 20 by 25 feet, with

young orange trees in the middle of the spaces between the rows. If planted alone a desirable spacing is 15 by 20 feet, which gives room for a wagon to pass between the rows one way when the trees are large.

If the plowman can run straight rows the ground may be checked off with the plow. Ordinarily, it is better to locate the tree positions by stakes, set by accurate measurement. To insure setting the tree just where the stake is placed the use of a planting board is recommended. Such a board is easily made by cutting a notch in each end of a board five feet long and six inches wide, and a third notch at its exact middle. This board is placed on the ground so that the stake where the tree is to be set comes in the middle notch, then a small stake is driven in the end notches, after which the board is removed and a hole is dug for the tree. When ready to set the tree the board is put back in place, the tree slipped into the middle notch and while held there the earth is shovelled in.

"HEELING IN"

Most trees are obtained from a nursery and must be cared for some days before planting. This is best done by "heeling in." To do this dig a trench in a shaded place and set the trees in this. The bundles should be opened and the earth worked down among the roots and packed well. All roots should be completely covered with moist earth. If they are to stand long and the earth is at all dry, they should be watered.

PROPAGATION

As the trees do not come true to seed, budding is generally practiced. The Shield bud is used, inserted in stock grown from seed planted in September or October, or buried in a cool shady place and planted in January or February. Budding is done in June and by the end of the growing season it has developed to a length of $2\frac{1}{2}$ to 4 feet, and is ready to be transplanted to the orchard in December or January.

When plum stock is used the seed are planted about the same time as peach seed, allowed to grow for a season and in winter are grafted below the ground.

PEACH ON PLUM STOCK

When they are to be planted on old land it is best to get trees that are grafted (not budded) on plum stock as the plum is not attacked by nematodes. These worms are present in most light soils that have been long cultivated and are a very serious enemy to peach roots. In setting such trees the union should be buried about four inches below the surface of the ground, which necessitates setting them somewhat deeper than they stood in the nursery row. On new land it is better to use trees on peach stock and avoid planting annual crops in the orchard that will harbor and spread nematodes, as the growth of peach on peach stock is a little more vigorous and uniform.

RACES AND VARIETIES

There are five general recognized races of peaches. They are the Peen-to, South China, Spanish, North China and Persian.

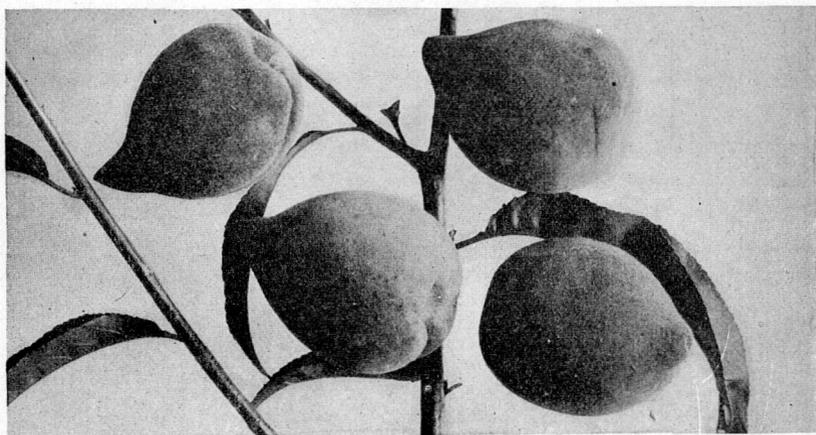


Fig. 2.—Jewel Peach, the leading commercial variety for Peninsula Florida

The races best adapted to Florida are the Peen-to and South China.

The Peen-to gets its name from the original variety, the Peen-to, which was introduced into this country by P. J. Berkman in 1859. A number of varieties have originated in Florida

from crosses of Peen-to with descendants of the peaches introduced by the Spaniards. These varieties are adapted to the subtropical conditions which prevail in Florida. Some of the most important are Angel, Bidwell's Early, Bidwell's Late, Hall, Jewel, Maggie, Millen's Favorite and Waldo.

The leading commercial variety for East and South Florida is the Jewel. (See Fig. 2.) This was originated by T. K. Godbey at Waldo about 1892, being selected as the best in an orchard of 500 Waldo seedlings. It is of medium size, creamy color, washed with red, flesh whitish, freestone, flavor sweet and of good character, season May 20 to June 1.

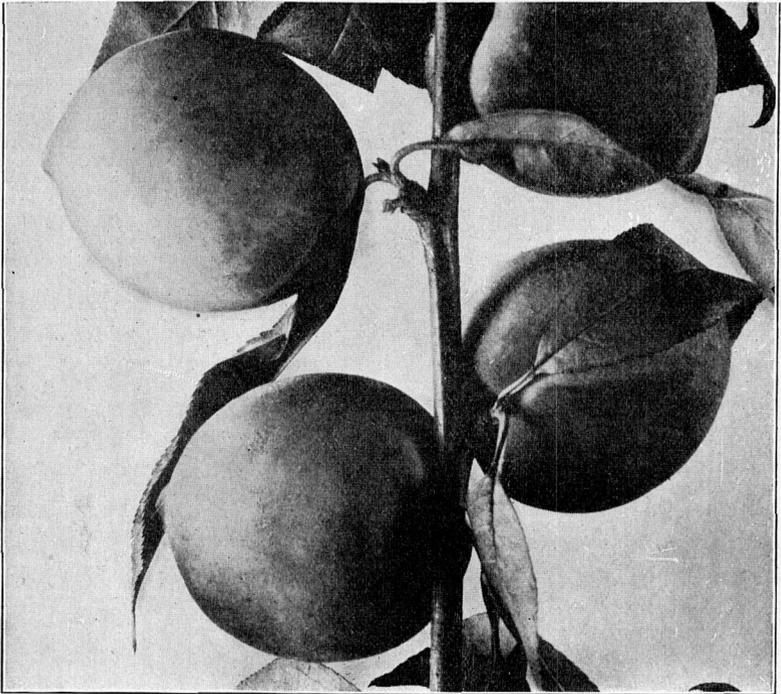


Fig. 3.—Waldo variety, a good peach for commercial purposes .

Waldo (see Fig. 3) is second in commercial importance for this section, tho not nearly so important as Jewel of which it is the parent. The varieties are similar in many respects. The Waldo is from 10 days to two weeks later in ripening, which accounts largely for its secondary place. It was also originated

by T. K. Godbey at Waldo as a seedling of the Peen-to. The seed was doubtless produced from a cross fertilization of the Peen-to by pollen from some old Spanish variety.

Angel (see Fig. 4), Suber, Hall's Yellow, Imperial and Taber are some other varieties desirable for home planting. These are too late for the attractive price received on the market for the earlier kinds.



Fig. 4.—Angel variety of peach, recommended for the home orchard

The South China race is often called the Honey group, because the first variety grown in the United States bore this name. Most of the varieties which now compose this group originated in Florida. They are well adapted to subtropical conditions, but their range is farther north than is the Peen-to. Some of the important varieties of this race are the Colon, Florida Gem, Imperial, Oviedo, Pallas, Taber and Triana.

Greensboro, of the Persian race, is the leading variety for West Florida, and has been planted in large orchards.

The Elberta, of the North China race, is also popular for this section.

PLANTING

The best time to plant is in December or January as trees are more completely dormant at this time. All bruised, broken or very long roots should be cut back with a sloping cut of a sharp knife just before trees are set. Care should be exercised that the roots be kept covered while out of the ground to prevent drying out.

When digging the hole the top soil to a depth of four or five inches should be placed to one side by itself. The hole should be deep and broad enough to receive the roots without crowding. It is better for two men to work together in planting. While one holds the tree in place with one hand, with the other he can arrange the roots in their natural position. The second man shovels in the dirt, putting in the top soil first, as this contains more plant food, and is thus placed where it may be more readily taken up. When the hole is half filled the planting board may be removed, the earth well packed, then completely filled and packed again. If earth is somewhat dry a half bucket of water should be poured in the half filled hole. After it is filled another half bucket should be poured in a saucer shaped basin about 2 feet in diameter made about the tree. After the water has soaked in the basin should be filled with dry earth. A good practice is to mound up earth 8 to 10 inches high about the tree whether or not it is watered at setting. This helps to hold the moisture; it should be pulled down about time growth starts.

PRUNING AT TIME OF SETTING

Trees are often pruned some before leaving the nursery. This is a good thing to do as the bundles are easier handled and transportation charges less. They are seldom cut back enough, however, so the planter should do his part. The trees usually planted are 3 to 4 feet high in the nursery and have grown from

scions or buds less than one year old. These should be pruned back to straight sticks 18 or 20 inches high at the time of setting. Three or four branches well spaced around the stem near the top should be allowed to grow on these; all others should be rubbed off as rapidly as they develop. If the large grade trees, 5 to 6 feet high are used, it is well to leave from three to five branches well distributed about the main stem. These should be cut back to stubs containing three or four buds, and the top above the uppermost stub cut off

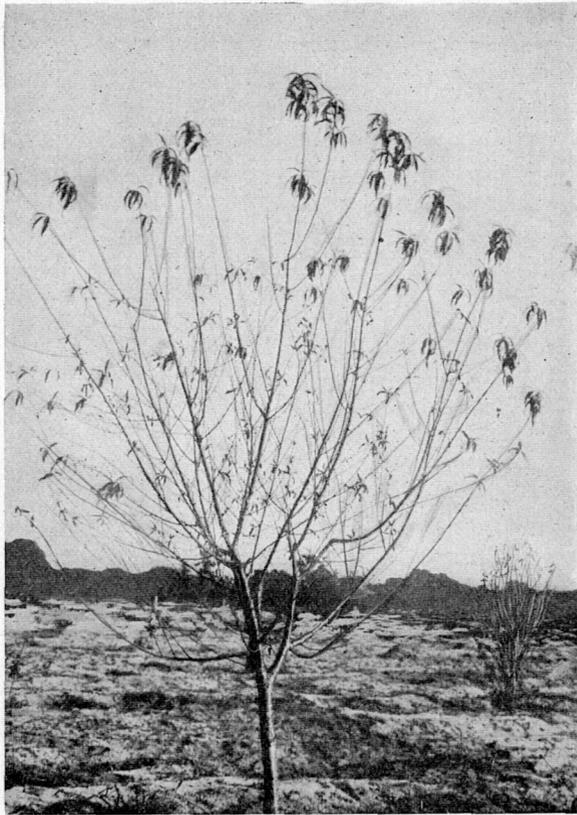


Fig. 5.—Properly pruned peach tree on the horticultural grounds of the College of Agriculture

SHAPING THE HEAD AND LATER PRUNING

The branches which grow during the first year will each be 3 or 4 feet long at the end of the season and have on them a number of small branches. These main branches should be cut back severely taking off about a third of their length, and all lateral branches removed to but three or four on each. This will form a framework or scaffold of from nine to ten branches of nearly uniform size and spacing on which the low spreading top is developed. Fig. 5 shows a well pruned

peach tree, while Fig. 6 shows one where pruning has been badly neglected. The third year and afterwards much of the pruning should be done in summer as soon as possible after the fruiting period is over. Especial attention should be given to leaders or branches that outstrip others about them and grow to undesirable heights. These should be cut back, giving the nourishment to the weaker branches that they may grow strong

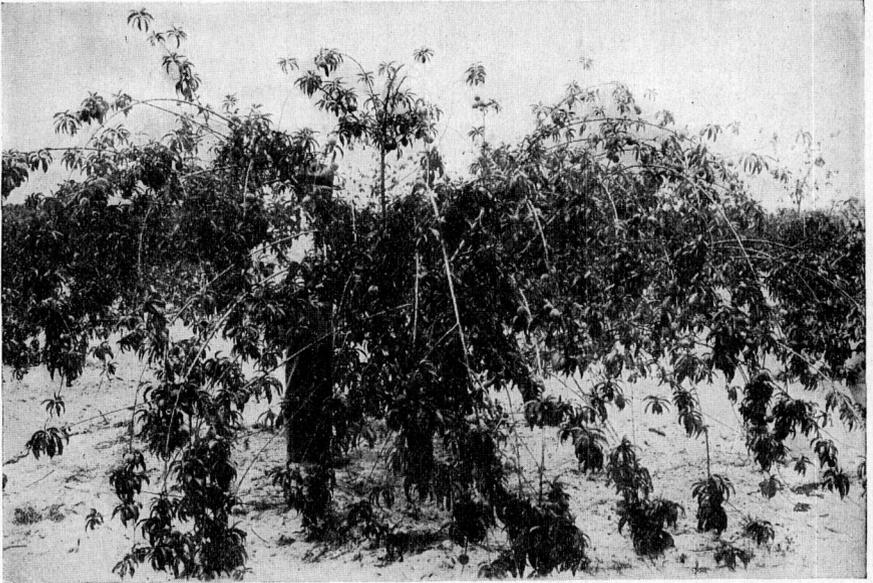


Fig. 6.—Improperly pruned peach tree. Note long slender branches bent to the ground by weight of fruit borne near the ends

and develop flower buds before growth stops in late summer. Trees should be gone over again in winter, and all leaders cut back, crossed, injured and dead branches removed, and the interior branches thinned out when so thick that sunlight and fresh air cannot readily enter.

Pruning is a very important operation in peach culture. The fruit is borne on wood of the preceding season's growth and to secure satisfactory crops a quantity of new branches must be developed each year. Proper pruning stimulates the trees to do this. If the pruning cannot be done in early summer in time for the flower buds to form before growth ceases, better postpone

the operation until winter. Thinning the fruit is an important part of pruning. Trees often set much more than they can ripen into large, well developed marketable fruit. Therefore, part of it should be taken off when about a half inch in diameter, so that what remains shall be 5 or 6 inches apart. It is best not to thin too early as late cold snaps or insects may cause many young tender fruit to drop.

CULTIVATION, FERTILIZATION AND COVER CROPS

The year the trees are set each one should receive, soon after growth starts in spring, one to two pounds of a well balanced complete fertilizer. This should be scattered in a circle about 3 feet in diameter with the tree at the center and cultivated in with a rake or hoe. A second application in June is desirable on most soils. A truck crop such as beans, tomatoes or melons may be planted between the rows, leaving a space of at least 3 feet for the tree row. An advantage of growing such a crop is that the soil will be given the cultivation it needs thru the spring and early summer, which it might not otherwise receive. After the crop is harvested a cover crop, preferably a legume, should be planted and allowed to grow without cultivation during the rainy season. This will aid in taking up from the soil the surplus water, and will throw it back into the air as vapor thru its leaves, and later add humus and nitrogen when the plants are returned to the soil.

One of the most desirable plants for this purpose is beggar-weed. Once established, it reseeds itself, thereby reducing the annual expense of seeding. Velvet beans are good if one takes the trouble to keep them from climbing into the trees. If cow peas are planted only the Iron or Brabham variety should be used, as the others will aid the development and spread of nematodes, which attack the roots.

The second year three or four pounds of fertilizer per tree should be used at each application, beginning at a distance of a foot from the tree and applying it in a circular band about 2 feet wide. Truck and cover crops may be grown as during the first year.

The third and succeeding years at least four to five pounds of fertilizer should be applied broadcast about the trees, beginning about 2 feet from the tree and extending a little further than the spread of the branches. Growing crops between the rows after the third year will probably be unprofitable, but cultivation during the spring and early summer, followed by a legume during the rainy season, should be kept up. If a good cover crop is secured the summer application of fertilizer may be omitted. The cover crop should be cut with a mower in September and left to decay on the ground. The latter growth should be disced late in November if rank, and in December or early January turned under with a turn plow.

INSECTS

CURCULIO—This little beetle is about 3-16 of an inch long. It passes the winter in the adult stage under trash or elsewhere where it may be protected. In spring it becomes active and is ready to lay eggs in peaches by the time the blossoms fall. The eggs hatch in three to five days, and the "worms" bore into the fruit, feeding as they go.

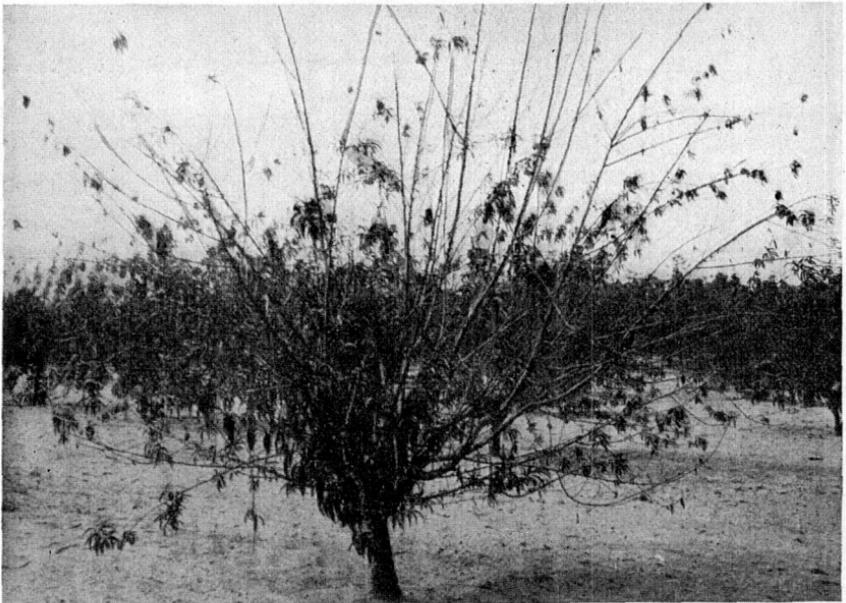


Fig. 7.—Tree badly attacked by scale insects and disease

Since the adult beetle feeds on the fruit and leaves it may be poisoned by spraying the trees with arsenate of lead at the rate of two pounds to 50 gallons of water.

The **BORER** does its damage in the larval stage by attacking the tree at or near the ground, working under the bark and seriously weakening the tree. Sometimes if several are present the tree may be entirely girdled. The adult is a moth which makes its appearance about July 1, and individuals may be found after this until October 1. The presence of the larvae in a tree is shown by a mass of gummy material which exudes at the surface of the ground from the channels they make. If the grower will go over the trees in the fall and carefully scrape away the gummy material with a knife the burrow may be easily found. Then by cutting back in the sapwood the channels may be followed until the larvae may be seen and killed. It is well to go over the orchard again in the spring to destroy any that may have been missed in the fall.

SAN JOSE SCALE—When abundant these give a greasy-ashen appearance to the branches of the trees. The individuals are less than the size of a pin head, but multiply rapidly and soon are as thick as shingles on a roof. They suck the juices from the tree which naturally weakens it. This insect passes the winter on the tree, therefore spraying with a strong lime-sulphur spray during the dormant season is best. During the spring and summer, if abundant, they may be sprayed with miscible oil emulsion. The red headed and black fungi do much to keep this pest in check, but are not always sufficient.

DISEASES

BROWN ROT (*Sclerotinia Fructigina*)—This probably causes a greater loss to the grower than any other disease. It appears on the fruit as a small brown spot, which under warm moist conditions enlarges rapidly, due to the growth of the filaments of the fungus in the tissues. After a little time the fungus breaks thru the skin and forms grayish tufts of spores which are scattered by the wind and by insects to start new infections. This process is very rapid, only a few days being necessary for a spore to lodge on a fruit, germinate, make its growth in the tissues, come to the surface and develop another crop of spores.

The use of self-boiled lime-sulphur spray is the best remedy.

PEACH SCAB (*Cladosporium Carpophilum*) often known as freckles and black spot, attacks not only the fruit, but also the leaves and twigs. It produces circular dark brown spots one-eighth inch or less in diameter. These may run together forming large scab areas. Fruit infections begin to take place three to four weeks after the petals fall.

Spraying with self-boiled lime-sulphur is the best remedy for this also. The standard self-boiled lime-sulphur mixture is composed of eight pounds of fresh stone lime and eight pounds of sulphur to 50 gallons of water. Any finely powdered sulphur (flowers, flour or "commercial ground" sulphur) may be used in the preparation of the mixture.

In order to secure best action from the lime, the mixture should be prepared in rather large quantities, at least enough for 200 gallons of spray, using 32 pounds of lime and 32 pounds of sulphur. The lime should be placed in a barrel and enough water (about 6 gallons) poured on to almost cover it. As soon as the lime begins to slake the sulphur should be added, after first running it thru a sieve to break up the lumps, if any are present. The mixture should be constantly stirred and more water (3 or 4 gallons) added as needed to form at first a thick paste and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked water should be added to cool the mixture and prevent further cooking. It is then ready to be strained into the spray tank, diluted and applied.

Nearly all of the peach orchards of Florida should be given the combined spraying for curculio, brown rot and scab. The spraying calendar should be about as follows:

1. With arsenate of lead about 10 days after the petals fall.
2. With arsenate of lead in self-boiled lime-sulphur about two weeks later.
3. With self-boiled lime-sulphur alone from four to five weeks before the fruit ripens.

There are a number of other diseases sometimes found attacking the trees or fruit, but usually they are of minor importance.

PICKING, PACKING AND MARKETING

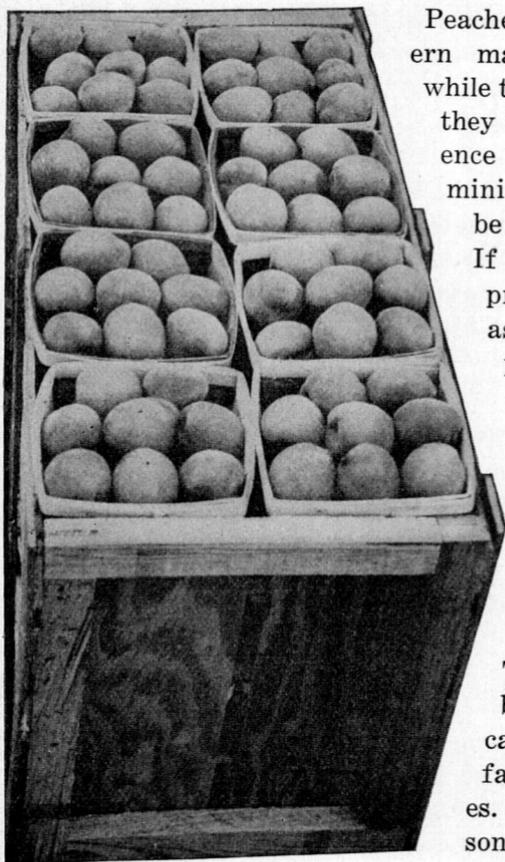


Fig. 8.—Peaches in one-quart baskets as packed for early shipment

markets. These should be shipped by express or in refrigerator cars.

Peaches for shipment to northern markets should be picked while they are still firm, but after they have colored well. Experience alone can guide in determining just when the fruit may be picked to best advantage. If it feels slightly elastic to pressure, gently applied so as not to bruise, it is in proper condition. The peach is one of the most perishable of fruits, therefore too careful attention cannot be given to picking, grading and packing. It should be marketed as soon as possible after maturity. The four-quart veneered basket, crated six to a carrier, is the most satisfactory container for peaches. Very early in the season, however, the one-quart strawberry basket (see Fig. 8) packed in a carrier holding 24 or 32 is preferred in some