

ORCHARD MANAGEMENT



Orchard Management

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ONE-HALF to one acre planted to a variety of fruits chosen to ripen in succession will supply a family of five with fresh fruits in season and a surplus to can, dry, preserve and pickle for the winter. It costs only a few dollars to prove that you can produce fruit on a small scale, at least. One must, of course, have some land, either his own or a willing landlord's. With this as a start, and with a willingness to spend a few odd hours during the year attending the trees and plants, almost any Texas farmer or farm wife may have home-grown fruit in abundance, a quantity that will provide each family member the two servings daily or 300 pounds yearly needed for good nutrition.

Fruits help to make the diet satisfactory by supplying iron and calcium and other minerals for blood and bone and body processes. Some fruits supply Vitamin A, which helps maintain a healthy condition of the eye and of the thin layer of skin covering all the internal parts of the body. They give Vitamin B, which makes for normal, steady nerves, and helps

the body efficiently use the energy secured from starches and sugars. They give Vitamin C, necessary for good strong blood vessel walls and normal growth and maintenance of bones and teeth.

Fruits are a pleasing addition to the food supply. Because of their fine color, texture, aroma, and flavor, they lend themselves to being served in a variety of ways from cocktail to dessert.

Choose Your Location Carefully

Some spots on the farm are better than others for growing fruit. If possible the orchard should be located within easy reach of the house, and laid out so as to add attractiveness to the home grounds. In areas of heavy rainfall, the orchard should be located on a hillside to provide good drainage. In areas of limited rainfall, the orchard should be planted where it will "catch" water. Livestock quickly ruin trees, which suggests that some places should be avoided as orchard sites, and most places fenced.

Select healthy soil and avoid old orchard sites, be-

cause serious diseases may often be found in stumps of old trees. During the growing season prior to setting the orchard, pull up and examine the roots of plants growing where the trees are to be planted. If bead-like knots are found on the roots, it will indicate the presence of nematode (a tiny worm) in the soil. When nematodes are found in soils, do not plant fruit trees there, as most of the trees will be killed by this pest. Avoid planting the orchard where cotton dies. This disease (root rot) attacks most fruit trees.

Look for a Light Soil

Fruit trees will grow in many types of soil, but if it can be found, a deep sandy loam is the choice. Heavy soils bake, crack, and become very dry, while loose soils of reasonable fertility hold moisture more uniformly throughout the season to promote root, top and fruit development. Heavy soils may be improved by plowing under a green manure crop of some sort, even of weeds, and by spreading manure before the trees are set. This treatment should be repeated every two or three years during the life of the trees.

Buy From Reliable Nurserymen

The first consideration in buying a tree is to get a vig-

orous one. The second is to get one grafted onto the right kind of root stock. The cheapest and most profitable trees in the long run are those of medium to large size, thrifty and free from disease, when planted. Runty or weak trees are expensive at any price. No better general suggestion for buying fruit stock can be given than to get it from a recognized, reliable nurseryman.

Select Varieties Adapted in Your Locality

In selecting kinds and varieties of fruit for the home orchard, consider varieties adapted to local conditions of soil and climate, preference of different members of the family and a succession of ripening fruits. So wide is the range of climate and soil in Texas that the choice of the proper kind to plant is an important factor of success.

Extension Service Circular No. C-150, "Fruit Varieties for Texas," gives detailed information on the kinds and varieties of fruit to plant in the different parts of the state.

Treat Trees Carefully On Arrival

It is preferable to plant trees during January and February. Trees should be unpacked immediately upon receipt from the nurseryman.

Every precaution should be exercised to prevent the roots from becoming dry. If the trees cannot be planted at once, they should be "heeled in" by digging a trench sufficiently wide and deep to receive the roots. In covering the roots with soil, care should be taken to work the soil into the spaces where the roots are massed together; otherwise there is danger of drying out, even though the tops of the roots are apparently well covered. If the soil is dry, a few pails of water poured into the trench may prevent the roots from drying out. Occasionally the trees may be frozen in transit. Upon arrival such trees should be completely buried (tops and roots) in most soil so that they may thaw slowly. Avoid wet spots where the soil is poorly drained as a site for heeling in trees.

Plow Soil Deep Before Planting

The soil where the trees are to be planted must be thoroughly prepared, even though the planting be delayed in order to do so. Deep plowing is advocated, and should be done in the fall or early winter, at which time a cover crop such as vetch, clover, rye or oats may be sown. The hole should be wide and deep enough to accommodate the entire root system of the tree easily. Broken or

torn roots should be removed before the tree is set in the hole. Plant the tree at the same depth that it was in the nursery. In filling in the hole, spread the roots of the tree normally and pack the soil firmly around it.

Let Soil, Rainfall and Slope Determine the Planting Plan

In laying out even a small orchard, spacing between the trees should be decided carefully. Where terraces are needed, they should be prepared some time before the trees are planted to allow the soil to settle. A terrace for each tree row is a sure way to avoid loss of moisture and plant food. Trees planted on top of terraces do especially well. If the trees are not to be planted on terraces, the rows should follow the contour of the terraces.

In areas where the topography of the land is level, the trees may well be planted by the square method. Where the trees are planted in squares, cross cultivation may be employed thereby making the task of cultivating the orchard much easier.

Suitable planting distances and the number of trees or plants that may be planted per acre by square or triangular methods according to planting distances are shown in the accompanying table.

Give Plants Enough Room

Apples	30 to 40 feet apart
Pears	30 to 40 feet apart
Pecans	40 to 60 feet apart
Peaches	25 to 30 feet apart
Plums	20 to 25 feet apart
Cherries	20 to 25 feet apart
Cherry-Plums	20 to 25 feet apart
Figs	20 to 25 feet apart
Grapes	12 to 16 feet apart
Berries:	
Blackberries	Plants 3 feet apart in row Rows 6 feet apart
Dewberries	Plants 4 feet apart in row Rows 6 feet apart
Strawberries	Plants 10 inches apart in row Rows 2½ feet apart

Number of Plants Per Acre

Distance Apart (No. Feet)	Square Method (No. Trees)	Triangular Method (No. Trees)
10x10	435	500
15x15	194	223
20x20	108	124
25x25	69	79
30x30	48	55
35x35	35	40
40x40	27	31
60x60	12	13

Cut Back Trees at Time of Planting

Trees should be cut back at the time they are planted to more nearly maintain a balance between the roots and tops. Cutting back should be done to the height at which the permanent branches are expected to develop. (Exceptions to this rule are pecans, figs, citrus and grapes.) Small trees 12 to 14 inches in height do not need to be pruned when planted. Medium to large trees should be

pruned at planting time as follows:

Apples—cut back to 30 inches.

Cherries—cut back to 18 to 26 inches.

Citrus—(bare root trees) cut back to 26 to 30 inches.

Figs—cut back one-third to one-half of top.

Grapes—cut off all except one branch leaving two to three buds.

Peaches—cut back to 18 to 20 inches.

Pears—cut back to 30 inches.

Pecans—cut back one-third of top of tree.

Plums—cut back to 18 to 20 inches.

Prevent Rat and Rabbit Damage

Damage to fruit trees from rabbits gnawing on the trunks has long been a problem to orchard owners. The damage is not only disfiguring to the appearance of trees, but is also detrimental to their growth and development, and sometimes causes total loss of a newly set orchard.

Young fruit trees that have just been set out in the orchard may be wrapped with several thicknesses of newspaper or wrapping paper around the slender trunks. This protective covering of paper prevents the rabbits from gnawing on the tender bark and damaging the trees. On larger fruit trees the trunk and lower branches may be treated with a repellent solution to prevent rabbit damage. This formula has been used successfully by orchard owners.

2 lbs. sulphur

2 lbs. yellow ochre

$\frac{1}{4}$ pint turpentine

$\frac{1}{4}$ pint linseed oil

1 oz. asafetida

4 eggs

$\frac{1}{2}$ pint wheat flour

Mix with skim milk and apply with paint brush.

Fertilize Your Fruit Trees

In planting it is well to add a shoveful of rotted manure to each three shovels of soil and fill in around the roots. If commercial fertilizer is used on first year trees, it is better to wait until the trees have begun growth before fertilizer is applied. In using commercial fertilizer to stimulate growth in one-year trees three-fourths to one pound per tree of 5-10-5 commercial mixture may be worked into the soil within a radius of 18 inches from the body. For second and third year trees, one to two pounds per tree of 5-10-5 mixture should be applied within the shade line of the trees at the time the buds begin to swell. A side dressing of one-half to one pound per tree of a quickly available nitrogenous fertilizer, such as nitrate of soda or ammonium sulphate, applied May 1st to 15th can usually be relied upon to stimulate additional growth.

In areas of sandy soil and ample rainfall commercial fertilizer may be used to stimulate tree growth and fruit development. This may be applied at the beginning of the growing season at the rate of one to two pounds per inch in diameter of the trunk of the tree. It should be applied toward the end of the branches instead of close to the trunk of the tree. Where a winter cover crop is to be turned under, the commercial fertilizer may be applied

just ahead of the plow and both turned at the same time.

Increased Production With Cover Crops

When fruit crops come into production, the demand and need for plant food is greatly increased. Winter cover crops such as hairy vetch, clover, rye or oats will aid in maintaining soil fertility and prevent winter erosion. Winter cover crops should be planted in the early fall and turned under in the early spring at blossoming time.

Hairy vetch should be planted only in areas of adequate rainfall, seeding at the rate of 15 to 20 pounds per acre. Clover may be planted in the early fall at the rate of 20 to 25 pounds of seed per acre. Clover thrives best in the heavy soils of South and South Central Texas. Rye, oats and wheat are more tolerant of drouth and therefore are recommended for the western part of the state. One and one-half to two bushels per acre is the proper planting rate. In the sandy soils of East Texas, hairy vetch or Giant Bur clover are recommended.

Intercrop With Care

In no instance should the crop planted between the tree rows be closer than four to six feet to the young trees. Planting close to the tree row brings the feeding area of the young trees into competition

for plant food with the intercrop growth. Besides there is danger of injuring the tree in cultivation.

Intercropping has its advantages in that an income is realized from the land in return for the necessary expenditure of time and labor given to the young trees. Intercrops should be planted early to mature before dry weather begins. Early planted field peas are commonly used. The Brabham or Iron varieties are best because they are resistant to nematode, thereby eliminating the danger of infesting the orchard soil with this pest. Corn or grain sorghums are not desirable because they grow to such a height that they often shade the young trees. Vine crops, such as cucumbers and cantaloupes, soon cover the ground and prevent further cultivation when it is most needed.

Protect Your Trees With Windbreaks

In those areas where winds damage soil or trees, windbreaks should be planted for protection. Windbreak trees should not be planted closer than seventy-five feet to the fruit trees to avoid competition.

Summer Cultivation Is Essential

Cultivation is essential, not only during the spring and early summer, but through-

out the entire period the foliage is on the trees. Probably the most critical period of cul-

ture may cause the tree to exude gum on the body.

Prune to Train and Maintain Trees

The pruning that a tree receives at the time of planting and during the next two or three years thereafter has much to do with its future. Pruning is done to maintain a perfectly balanced tree that is easy to spray and from which fruit may be easily picked, and pruning is employed to stimulate new growth. Except in the case of one, two and three year trees, pruning should generally be done during the dormant season. When a branch appears at the wrong place, it is well to take it off at once, even though it be in the growing

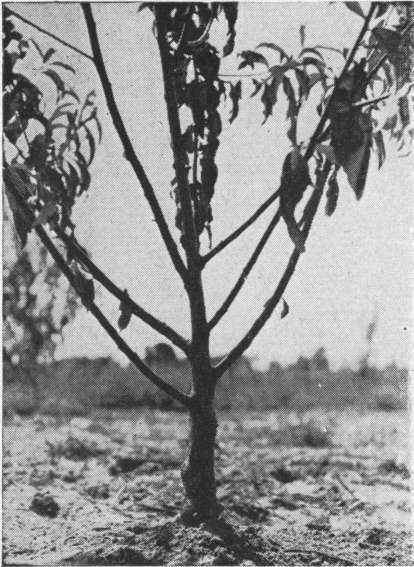


Fig. 1. A peach tree at the end of the first growing season which needs pruning. Select alternating branches, removing the second branch on the left and the third branch on the right of the trunk.

tivation comes during July, August and early September when the evaporation of moisture is most rapid. If thorough cultivation is not carried on at this season, the soil will bake and crust over and weeds will take moisture that should go to the trees. It is not advisable to plow deep in an orchard with a turning plow during the growing season. A disc, spring-tooth or spike-tooth harrow are desirable implements for preparing and cultivating orchard soil. Do not plow dirt to the tree rows. This practice covers the roots too deep and

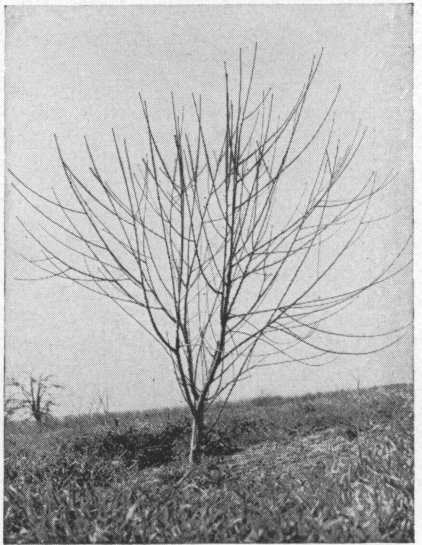


Fig. 2. A two-year-old peach tree before pruning. Approximately one-third of the current season's growth should be pruned each fall.

season. May or early June is a good time for doing this work.

Prune to Shape Head

In the young orchard the selection and training of branches for forming the head is a matter of importance. The heads of first year trees should be developed with three to five branches. The first of these branches should be eight to ten inches above the ground with the others alternating four to six inches apart to the top. (See Fig. 1.)

At the end of the first growing season prune off those branches on the body that are not to become part of the permanent framework of the tree. The ends of the remaining branches should be pruned so that all will be of approximately the same length. Do not remove more

of the "end growth" of the trees than is necessary to give the tree a symmetrical appearance.

Second and third year pruning does not vary widely from the first year, except perhaps in the extent of pruning. The cutting back done at this time requires that particular attention be given to thinning out lateral branches that are too close and shortening branches that have grown too long and out of proportion to the other branches on the tree. (See Figs. 2 and 3.)

Pruning Peaches and Plums

It is essential that some pruning be done each year. Young bearing trees should make at least ten inches of growth annually, for where the growth is limited to a few inches there is usually a diminished number of fruit buds. A general rule for pruning bearing trees is to remove approximately one-third of the current season's growth each fall.

Pruning Apples and Pears

In pruning apple trees we do not aim toward an open center. In unpruned trees the central limb is apt to run up 15 to 18 feet. Therefore during the second or third growing season it is best to cut the central leader branch to a height of 10 to 12 feet in order that the side branches may develop in proportion to the central leader, thus making a better balanced and

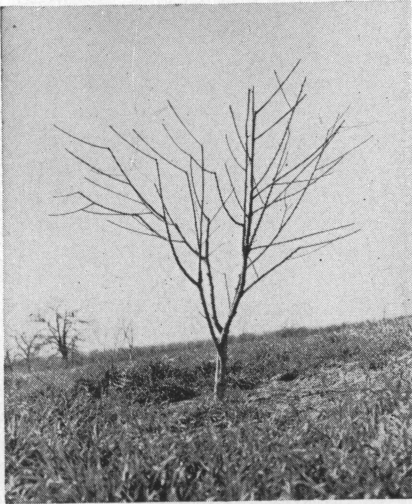


Fig. 3. The same two-year-old peach tree after pruning.

more symmetrical top. Shaping a tree in this way necessitates that some pruning be done each year to both the central leader and the side limbs, but the central limb should always be left a little longer than the side branches. Heavy pruning causes the fruit spurs to grow into leafy branches. Pruning old trees consists mainly in thinning out dense growth and removing rubbing limbs.

Young pear trees run up very tall and the branches are inclined to crowd each other. It is advisable to remove the limbs that cause the crowding during the first two or three pruning seasons. To encourage the spreading of the tree, cutting back should be done only where there are outside buds and shoots.

Pruning Figs

If the grower wants a fig tree of the "tree form" (from a single trunk), the main stem should be cut back to a height of 12 to 18 inches. If a "bush form" is desired, the lower limbs should not be removed but cut back enough to be of uniform length. Very low heading tends to induce branches from below the ground and the development of sprouts from the roots. Magnolia figs should not be pruned as severely as formerly thought necessary. Removing one-third of the top is enough to encourage early and heavy fruit production.

The Celeste and other varieties should be pruned even less than the Magnolia; one-fourth of the branch area may be removed. Upright and incurving limbs should be cut to keep the top fairly open.

Pruning Grapes is Highly Important

In constructing a four-cane Kniffin system trellis (suggested because it is the simplest), set posts well into the ground 12 to 14 feet apart. Tack a heavy wire to the post or run the wire through the post 40 inches from the ground. The second wire should be 60 inches from the ground. It is important that the post be well set into the ground and the wire stretched tightly to insure permanence.

After a grapevine is planted, cut it back to two or three buds on the most vigorous branch and remove all other branches. During the first growing season, select the best shoot and keep the others pinched off. The following winter the shoots should be tied to the top wire of the trellis. At the same time it should be cut off three to four inches above the height of the top wire. During the following summer, the strongest shoots should be selected from the growth and trained along the wires. Future pruning should be confined to cutting the vine back to four side branches three to five feet in length.

Pruning Berries

Very little, if any, pruning should be given dewberry and blackberry plants the first year. The second growing season, after the crop has been harvested, cut out all the

Propagate Trees From Seed

Peach seed may be saved when the fruit is harvested and planted in the early fall. The seed should be kept in damp soil, sawdust or peat moss until there is sufficient

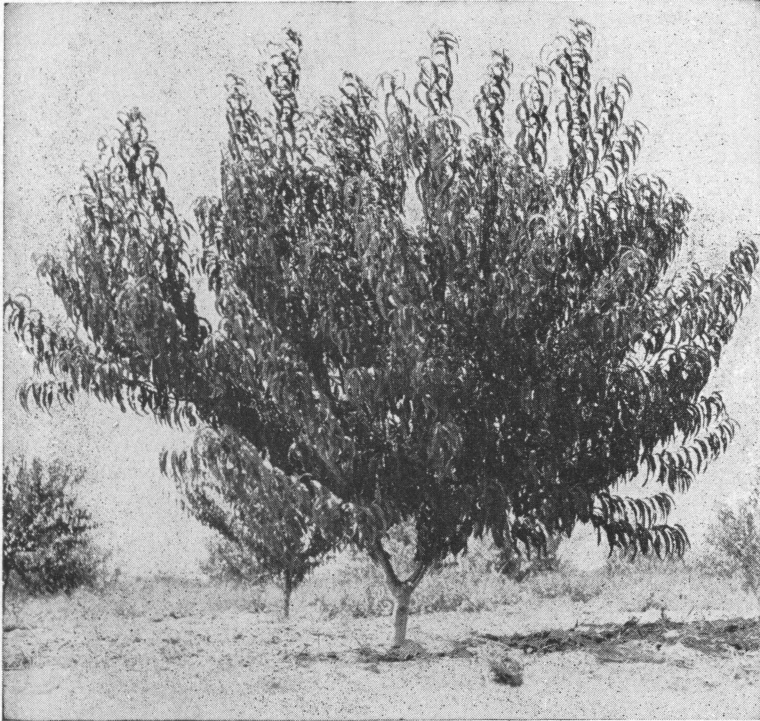


Fig. 4. The same peach tree as previously shown, but in its third growing season following the second winter pruning.

old growth leaving the new growth on which the crop will develop next spring. Do not allow more than three sprouts (canes) to grow in a hill. The berry planting should be transplanted to a new location every four or five years.

moisture in the soil for planting. September or October are the best months for planting. In areas of limited winter moisture, it is advisable to keep the seed where they can be kept moist and planted in the nursery row in early February.

Peach seed of the Honey type should be planted in the southern part of the state, while in the northern part Indian peach seed or native seedlings are more apt to germinate readily.

Peach seed should be planted two inches apart and covered two to three inches deep. With a favorable season the seed will come up and grow to a height of 18 to 24 inches by June or July at which time they may be budded from trees bearing fruit of proven quality. Information on budding may be obtained from Extension Service publication MS-446, "Budding Peaches and Plums," and MS-481, "Budding and Grafting Pecans."

Citrus. No mention has been made of citrus management problems, as the handling of this type of fruit is discussed in Extension Service circular D-120, "Handbook for Citrus Grove Owners," and Experiment Station publication C-67, "Citrus Orchard Management in the Lower Rio Grande Valley."

Control of Insects And Diseases

The orchard owner should secure adequate spray material to last the duration of the growing season. Spraying with the proper materials at the right time will result in the protection of the trees

from insect pests and most diseases, and at the same time assure a crop of fruit of highest quality.

The following recommendations are made for the orchard owner who wants adequate protection for trees and fruit.

For Peaches and Plums. (To control curculio, brown rot, leaf curl, scab and San Jose scale.)

Spray No. 1. (Dormant or winter spray.) In the eastern part of the state where San Jose scale is prevalent, commercial oil emulsions, usually 3% strength, are recommended. It should be mixed with water according to the directions given on the container by the manufacturer. (**Caution:** Avoid if possible spraying just before freezing temperatures. Keep sprays well agitated at all times.) Where peach leaf curl and San Jose scale are prevalent, liquid lime sulphur mixed with water according to directions on the container is recommended. It is best to test the solution with a hydrometer before using it on a large scale. For winter spray in areas where both peach leaf curl and San Jose scale are prevalent, dry lime sulphur at the rate of 14 lbs. to 100 gallons of water or 6¼ gallons of liquid lime sulphur to 100 gallons of water may be used as a substitute for oil emulsion. The liquid lime sulphur stock solution should test 32° Baume.

Spray No. 2. (Blossom blight or brown rot control.) Wettable sulphur 5 lbs. to 50 gals. water; or liquid lime sulphur 1 gal. or dry lime sulphur 4 lbs. to 50 gals. water. Apply when buds have begun to swell and show slight pink color.

Spray No. 3. (When most of blossoms have shed.) To control curculio (worms) in peaches, and plums, mix 2 lbs. zinc sulphate, 4 lbs. hydrated lime, 1 lb. of arsenate of lead to 50 gals. water. **Caution:** Where the annual rainfall is less than 30 inches, **do not use zinc sulphate in the spray mixture. Important:** Mix this spray in the following order: dissolve the zinc in spray tank; add the lime as a thin creamy paste to a nearly full tank before adding the lead arsenate.

Spray No. 4. (Shuck spray.) About 10 days after the blossoms have shed, and the shucks of the blossoms are in evidence at the base of the tiny peaches or plums, repeat Spray No. 3.

Spray No. 5 (Two weeks after shuck spray.) Same as No. 3. This spray is directed against brown rot and curculio. Therefore to control brown rot, add 3 lbs. wettable sulphur to the spray tank just before the arsenate of lead. If either Spray No. 4 or Spray No. 5 is to be omitted, Spray No. 4 should be omitted.

Spray No. 6. (Two weeks after No. 5 Spray.) Spray

with 3 lbs. wettable sulphur to 50 gals. water. This spray is to protect early fruit against brown rot and scab.

Spray No. 7. (For mid-season and late ripening varieties.) Spray with 3 lbs. wettable sulphur to 50 gals. water. This is approximately 30 days before fruit ripens.

Spray No. 8. (Just before or during harvest.) Spray with 5 lbs. wettable sulphur to 50 gals. water, or dust with dusting sulphur. This is to protect fruit that is to be held or shipped against rot.

Spraying Equipment

For spraying a few fruit trees around the home, or in a small home orchard, a bucket spray pump may be used. It should be equipped with a 4-foot extension rod and at least 15 feet of hose.

For spraying orchards of up to 400 or 500 trees, a barrel spray pump will be found satisfactory. This pump fits into a 50-gallon barrel and develops from 125 to 150 pounds pressure. It should be equipped with a 4-foot extension rod and at least 25 feet of hose.

A power spray outfit is the most satisfactory and convenient type of sprayer. It may be purchased in various sizes, and should be used in peach orchards of 10 acres or over. It will develop from 200 to 300 pounds pressure, depending on the power of the motor, and will deliver from 5

to 15 gallons of spray per minute. It is usually equipped with a 200-gallon spray tank, and two leads of hose 35 feet long should be provided.



Fig. 5. Treat trees between Oct. 20 and Nov. 15 for peach tree borer.

Peach Tree Borer. No preparation of the soil is necessary except to break the crust for 15 to 18 inches around the tree and to remove any grass and weeds. Paradichlorobenzene crystals should be placed in a circle around the tree, about two inches from the base. (See Fig. 5.) For mature trees of average size, 1 oz. by weight should be used; for unusually large trees $1\frac{1}{2}$ ounces is sometimes needed; for trees 4 to 5 years old, $\frac{3}{4}$ oz.; and for trees 1 to 3 years of age, $\frac{1}{2}$

oz., or slightly less, should be used. Immediately after the crystals have been applied, they should be covered with several shovelfulls of dirt, and the dirt packed with the back of the shovel to make a cone-shaped mound. The material should be applied between October 20 and November 15. After about six weeks, the mound of earth should be torn down and the residue or crystals removed.

Shot Hole Borer. The shot hole borer attacks chiefly trees that have been devitalized by some other pest or injured and weakened by lack of fertility. Both the larva and adult beetle burrow into the bark of the trees, and many small, round entrance and exit holes, giving the bark the appearance of having been shot with bird shot, reveal the presence of this pest. There is no satisfactory method of controlling shot hole borer with insecticides, but by proper cultivation and fertilization of the trees to keep them healthy and by controlling other insect pests and diseases, injury from shot hole borer can be avoided.

Lesser Peach Borer. The lesser peach borer confines its attack mostly above ground to the trunk and limbs of the trees. As in the case of the shot hole borer, only injured or diseased trees are attacked. It is found working on the trunk or limbs that have been injured by imple-

ments, cankers, low temperatures or sun scald. To control this insect, 1 lb. paradichlorobenzene crystals dissolved in 2 quarts crude cottonseed oil is used. This is applied to the infested areas with a paint brush, either in the fall at about the time recommended for applying paradichlorobenzene crystals for the peach borer or in the spring about the first of April.

For Apples and Pears. (To control scab, aphids, codling moth, and bitter rot.)

Spray No. 1. (When buds turn pink before opening.) Spray with 3 lbs. wettable sulphur, $\frac{1}{2}$ pint nicotine sulphate to 50 gals. water, for scab and aphids.

Spray No. 2. (When blossom petals have dropped.) Spray with 3 lbs. wettable sulphur, $1\frac{1}{2}$ lbs. arsenate of lead to 50 gals. water, for scab and codling moth.

Spray No. 3. (Ten days after No. 2.) Spray with 3 lbs. wettable sulphur, $1\frac{1}{2}$ lbs. lead arsenate to 50 gals. water, for scab and codling moth.

Spray No. 4. (July 1 to 15.) Spray with Bordeaux mixture (4 lbs. copper sulphate, 6 lbs. hydrated lime to 50 gals. water) and add $1\frac{1}{2}$ lbs. lead arsenate, for bitter rot and codling moth.

For Grapes. Black rot attacks the fruit, leaves and twigs of the plants when the grapes are about grown. Soft brownish spots appear first

on the berries in the cluster, soon involving the entire berry which becomes black and shriveled. The disease spreads rapidly, and unless an effort is made to control it, usually takes a heavy toll. Bordeaux mixture is used to control black rot.

The leaf hopper is a yellowish colored insect about one-eighth of an inch long, and half as wide. It is very active and if the vines are disturbed, it flies out quickly. Plants attacked by this sucking insect are greatly weakened and do not produce normally. Nicotine sulphate (one-half pint to 50 gallons of water) applied as a spray over the vines as the leaf hoppers first appear, and followed at intervals of 20 to 30 days apart, will kill the immature insects. By adding nicotine sulphate to Bordeaux spray for grape disease, both may be applied at one time. Clean out and burn all plant prunings and rubbish as it is in this material that these pests spend the winter.

The grape leaf folder caterpillar folds the leaf and then feeds upon the soft tissues between the veins of the leaf. Lead arsenate, one and one-half pounds, to 50 gals. water applied with the first signs of folded leaves, will control this pest. The lead arsenate may be mixed with the Bordeaux spray and applied together.

Downy mildew or powdery mildew is a yellowish green

or greenish white mildew, causing the berries to shed and rot and the foliage to be spotted and fall off. The velvety, felt-like fungus covers the leaves, cane tips and fruit. Bordeaux mixture applied as recommended in the spraying schedule will give control.

Spray No. 1. (In January, after vines have been pruned.) Bordeaux mixture: 5 lbs. copper sulphate (blue-stone), 5 lbs. hydrated lime to 50 gals. water, to control black rot.

Spray No. 2. (Week before blossoms have opened.) Same as No. 1, to control black rot, mildew, grape leaf folder, grape leaf hopper and aphids.

Spray No. 3. (When majority of blossoms have fallen.) Same as No. 1, to control

black rot, mildew, leaf folder, leaf hopper.

Spray No. 4. (Three or four weeks after third spray.) Same as No. 1.

Note. Grapes will be discolored if sprayed within two weeks of the time in which they are to ripen.

For Figs. Fig rust is a disease which gives to foliage a rusty appearance. The foliage usually sheds off and the late fruit will not mature. To control this disease, spray as follows:

Spray No. 1. (In early June.) Use 4 lbs. copper sulphate, 6 lbs. hydrated lime to 50 gals. water.

Spray No. 2. (30 days later.) Same as No. 1.

Spray No. 3. (30 days later.) Same as No. 1.

References

- FB-1001 Growing Fruit For Home Use.
- FB-1588 Frost and The Prevention of Frost Damage.
- FB-1870 Pruning Hardy Fruit Plants.
- FB-1026 Strawberry Culture; South Atlantic and Gulf Coastal Region.
- FB-1399 Blackberry Growing.