Tree Care

Sustainable Agriculture

Training Pac

©1995 Sommer Haven International

INSTRUCTION

This Training Pac has a text and separate Workbook that contains the exercises for the text. Follow these steps:

1. Read through the entire text to obtain an overview of the text content.
2. Become familiar with the Objectives at the beginning of each section.
3. Then reread the text while completing the exercises in the Workbook.

Contents

OBJECTIVES

When you have successfully completed this Training Pac, you will be able:

To choose the place and prepare the soil to plant trees.
To correctly plant the trees you choose, esp. bare root trees.
To care for you tree(s).
To prune your trees and vines correctly.
To notice pests and diseases and correctly treat them.
To learn methods of grafting to reproduce your own trees.

I. INTRODUCTION

People need trees for food, for building, for firewood and for shade. Trees also give shade and food for animals. Growing trees is important for small farmers because:

- Trees can grow on hills and in rocky places.
- Trees are not easily killed by drought because they have roots which can get water from deep in the soil.
- Trees stop erosion and improve the soil.
- Trees can be planted to protect fields and houses from the wind.

It is best to only plant trees if one is settled on the land as trees take a long time to grow and reproduce. Fruit trees take at least 2 to 3 years to before they get fruit.

In some places a whole community or village may want to join together to plant trees for firewood. Everyone needs to work together to plant and to build the fences for protection against animals. The wood or fruit is also shared.

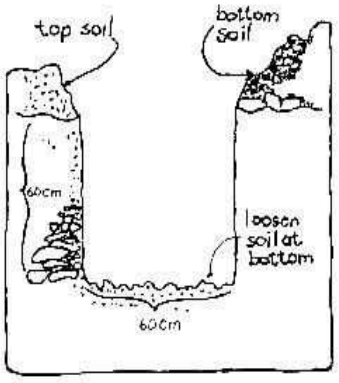
II. PREPARATION

Before you plant, work out where to plant. Fruit trees grow big, up to 35ft (10m) high and 25ft (7m) wide in their branches and roots. Try to plant them in a place where they can grow to their full size. Do not plant too near a house or the trees can damage the foundation of the house and provide too much shade.

The Holes

Dig a hole approximately 20" (60 cm) square and 20" (60cm) deep about 4 weeks before you want to plant the tree.

The hole must be square so that the roots will grow towards the corners and then spread out into new soil. If the hole is round, the roots will grow round in a circle and the tree will not grow well. Dig out the top 9" (30cm) of soil and put it on one side of the hole. Then dig out the bottom 9" (30cm) of soil and put it on the other side. Loosen the soil at the bottom of the hole.



Then mix the top soil with half a wheelbarrow full of compost or manure and put it into the bottom of the hole with top soil from another place. Use the soil from the bottom of the hole to make a dam around the tree to keep in the water. Water the hole for a few days before you plant the tree.

If you make the hole when you plant, do not put in manure or compost. Rather put in the manure or compost on top as mulch.

When To Plant

For trees which lose their leaves in the winter like peaches and grapes, plant in the winter. For trees which do not lose their leaves, like mangoes and oranges, plant at any time of the year. But summer is best.

Spacing Trees

Before you plant, work out how far apart the trees will be:

- Plant trees like peaches, plums, apricots, figs, guavas and papayas (pawpaws) about 10ft (3m) away from each other.
- Plant citrus, mangoes, and nut trees 25ft (7m) away from each other.
- Plant avocados 35 ft (10m) away from each other.

III. PLANTING

Trees come from a nursery in plastic containers or with bare roots. If the tree comes in a container, take off the plastic, and keep the soil around the roots when you plant. Stand the tree in water for about 2 hours before planting. Plant the tree in the hole as deep as it was growing before. You can tell this from the soil mark on the trunk.

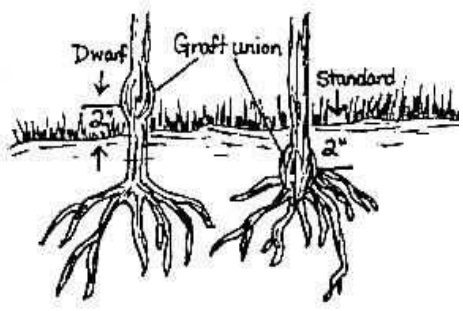
Take the time to plant and plant right. It is best to plant the trees or bush as soon as it is received, if you cannot put the trees in a container or bag. They can be stored for several weeks like this: however, keep them in a shady place and keep the roots moist. (Do not leave the tree soaking in water).

Standard or Dwarf Stock

Standard trees are trees which have the original roots and will grow to the tree's regular size. Dwarf trees are trees that have a different root stock so they will not grow as big. Dwarf trees will give as much fruit, but they do not need as much water to keep them growing.

TO PLANT

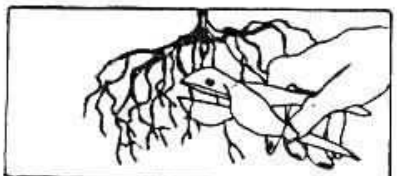
Standard Tree - the graft union is a bulge just above the roots. Plant so that the *bulge is 2 inches below* the soil.



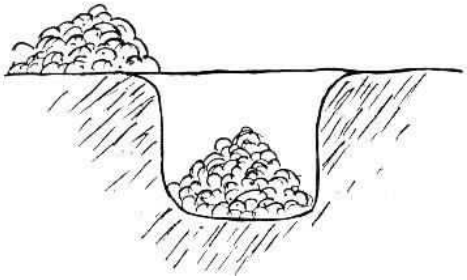
Dwarf Tree - the graft is a bulge higher on the trunk. Plant so that the *bulge is 2 inches above* the soil. If this is planted below, roots will begin to form and the tree will grow to its standard size.

How To Plant A Tree

Bare Root Trees

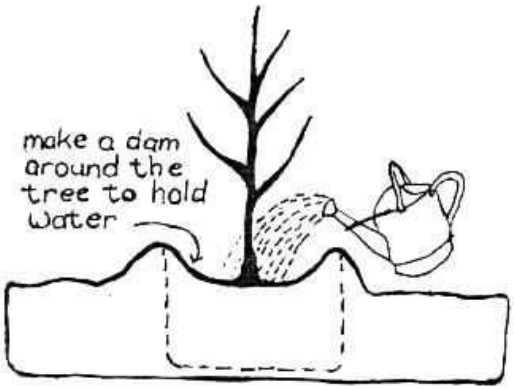


1. *If you got the tree with bare roots, some of the roots may be split or damaged. Cut these off with sharp clippers.*

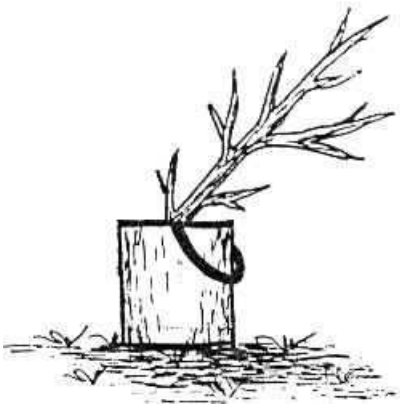


3. *Form a pile of soil in the hole about twice the size of the roots.*

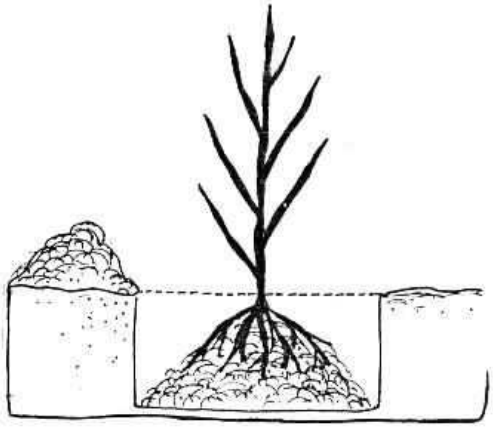
5. Add 2-3 shovels (spades) of soil on top and shake the tree to full the soil between the roots. Add more soil a little at a time, gently pushing it down, and then water well.



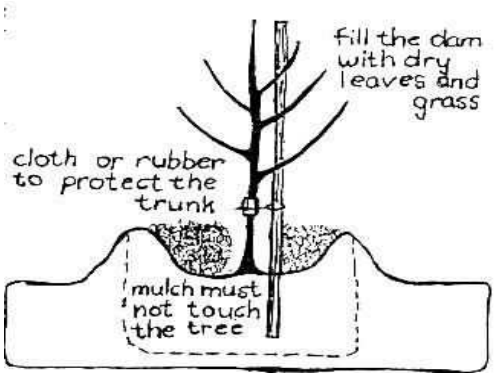
6. Make a pile of dirt (soil) around the tree to hold water in.



2. *Cover the roots with water and soak overnight.*



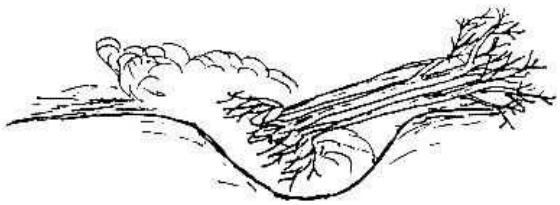
4. *Spread roots over pile of soil.*



7. Fill the dam around the tree with water and then fill it up with a mulch of dry grass and leaves. Do not let the mulch touch the trunk of the tree, otherwise the stem can get diseases from wet mulch.

If the bare root trees cannot be planted immediately they can be kept for up to 14 days if you open the end of the package and keep the roots moist. If they have to be kept longer than 14 days, they should be *"heeled-in"* in a shady area by:

1. Digging a shallow trench.
2. Removing roots from bag.
3. Placing the roots in trench.
4. Covering with soil/dirt.
5. Keeping moist.



Weather Protection

In some places young trees need extra protection from late frosts and intense sunlight that can injure the new tree. Newspaper (at least 10 pages thick) around the tree and stake works well. Encircle trunk and stalk using plastic ties to hold in place. When danger of frost is passed, remove the wrapping.

Care Of Young Trees

Every three months, put on 2 or 3 shovels full of compost or manure as a mulch, or put on 2 full cups of fertilizer like 2:3:2. Spread the compost or fertilizer on the ground as wide as the leaves are growing.

Every week for the first year, give your trees 2 buckets of water. After that, water them every 2 weeks unless there is a lot of rain. Some trees, such as citrus, need a lot of water. Water them every week. It is better to give trees a lot of water once every week than a little every day.

To help the tree grow up straight, tie it to a strong stick pushed into the ground. Protect the trunk of the tree with a piece of cloth or rubber, and do not tie the string too tight.

Cuttings or Seeds (Pips)

Some trees or vines can be grown from "cuttings" – part of the tree such as grapes, figs, and mulberries. Choose a strong branch, cut it just below a bud, and push it halfway into the ground.

All trees grow from seeds, but trees planted from seeds take a long time to get fruit. It is not good to use seeds from nursery trees, because nursery trees are grafted and the trees which grow from their seeds will have weak roots. Rather, use seeds from old, strong trees.

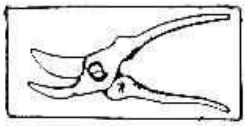
IV. PRUNING

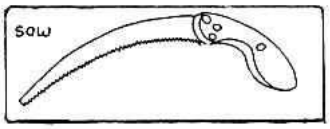
Pruning is cutting some branches off a tree so that other will grow better and will get enough sun. Pruning fruit trees which lose their leaves in winter like apples, peaches and pears, make them healthier and they give better fruit. Prune these trees in winter when they have no leaves and no fruit. Always prune on dry days, because on rainy days, the trees can get diseases more easily.

Thinning reduces the number of new shoots and directs growth.

Heading increases new shoots, which helps stiffen the branches and holds them in position.

What You Need

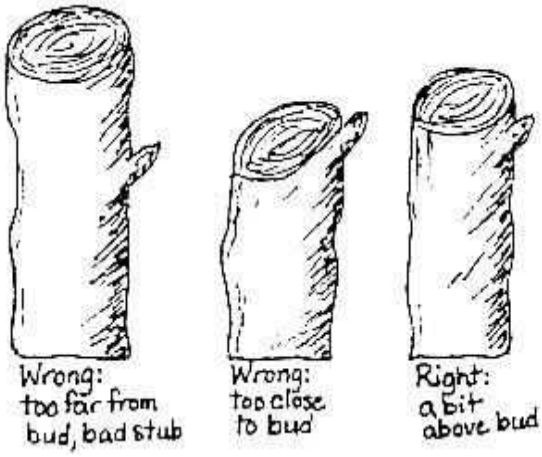




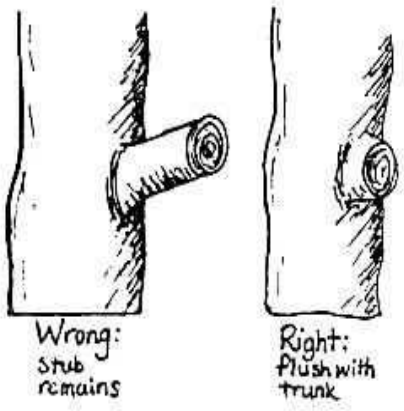
- Secateurs – for cutting off small, thin branches.
- Saw – for cutting off big branches.
- Bleach/Chlorox or Jeyes Fluid – for washing the secateurs and saw after pruning each tree. If you prune a tree with a disease without washing your tools, the disease will spread to the other trees.
- Tree sealer (tar or white water base paint) – to seal any wound made that is larger than a quarter.

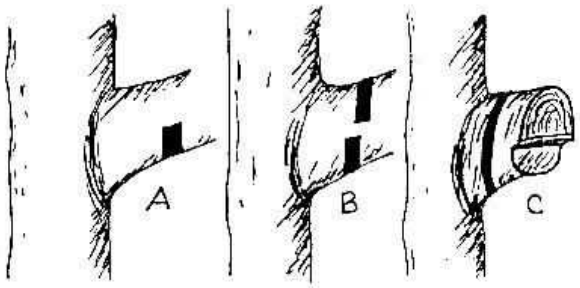
How To Cut

Never break off a branch. Always use secateurs or a saw. Cut off thin branches sideways just above the bud.



When you cut off a thin branch, cut about 3" (10cm) from the trunk, at an angle so that water can run off. If you cut too far away, the remaining piece of branch can get a disease and the tree can die. If you cut too near, you will damage the bark of the tree.



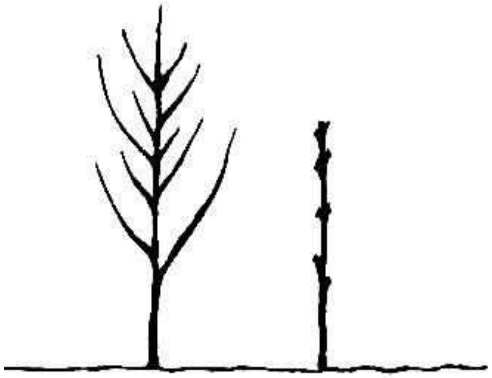


Do not cut off a thick branch with one cut. If you make one cut from underneath, the saw will get stuck from the top, the branch might break and tear off some bark. The right way to cut is with 3 cuts.

To stop the tree from bleeding and getting a disease, put tree sealer on the place where you have cut off branches. You can buy a tree sealer, or you can use the thick glue which comes out of pine and bleu gum trees, or use white water base paint.

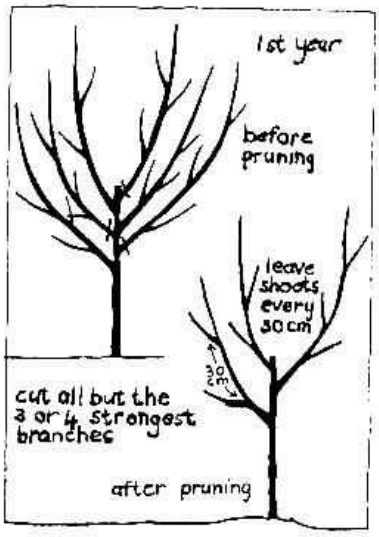
Pruning the Newly Planted Tree

Trees are weak after you plant them, because their roots take time to get used to the new place. It helps the roots to grow strong if you prune the tree after planting. Cut off the top of the tree and all small thin side branches, but do not cut off thick strong branches.



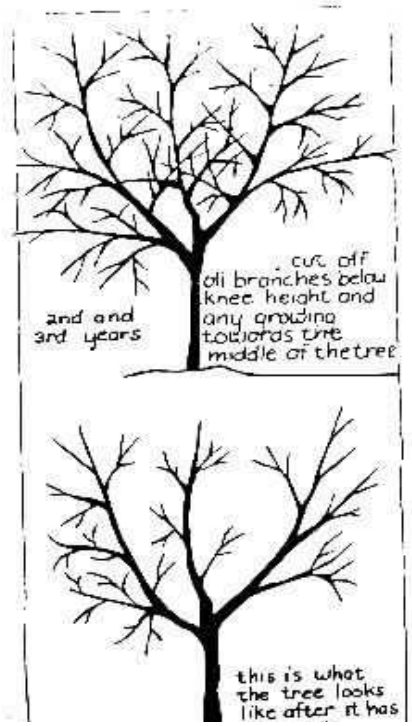
Pruning in the First Winter

During the first winter after planting, leave the 3 or 4 strongest branches and cut off all the other branches. The strongest branches will have small branches growing on them. Leave one small branch every 3" (30cm) and cut all the others off. The tree should be planted so that it will get sun on all its branches.



Pruning in the Second Winter

Cut off all the small branches lower than your knee and all new branches growing towards the middle of the tree.



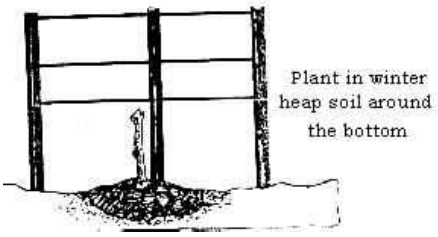
Pruning in the Third Winter

Cut off all dead branches and all new branches growing in the middle of the tree.

Prune like this every year until the tree has stopped growing. After this, prune only if the tree gives lots of small fruit. Pruning will help to produce less but bigger fruit.

Pruning Grape Vines

As soon as the grape vine has been planted, cut the top off so that there are two buds above the ground. Next winter, after the vine has been growing for one year, choose the strongest of the two branches and cut it off so that there are two buds left on it. Cut the other branches off as near to the trunk as you can. This will make the grape vine grow quickly.



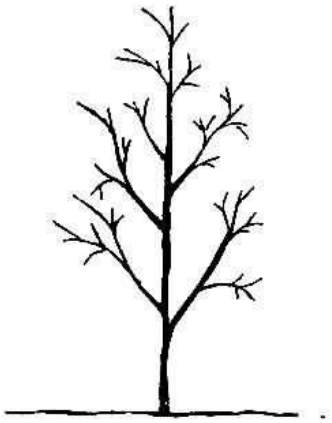
Next summer, there will be two branches growing from the two buds. When the branches are 20 cm long, cut off the weak one and tie the strong one to a pole. As this branch grows, tie it loosely to the stake every 20 cm, until it grows as high as you want it. Then cut off the top. Two branches will grow where you cut it. Tie these two branches to the fence. If you want more branches to spread out from these branches, cut them in the same way. The grape vine will stay in this shape if you prune it every winter.

During the first two years, leave only one bunch of grapes on the vine and cut all the others off. This will make the roots of the vine grow strong.

To make the grapes bigger and sweeter, cut some branches off and leave the others.

Pick the grapes when they are ready to eat. They will not ripen after they are picked.

<u>Different Ways to Prune</u>



Central Leader

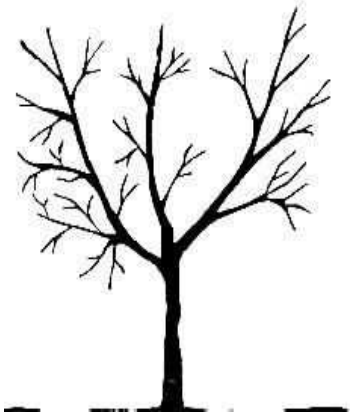
The tree has a main center branch and other branches lead from it (fruit trees such as apple and pears and pruned in this way).

<u>Advantages:</u>

This makes a strong tree, it does not break easily. Shape allows sunlight to reach all fruit.

<u>Disadvantages:</u>

It is not easy to pick the fruit.



Open Center

Center branch is removed, 3-4 main branches trained a basin-type shape.

<u>Advantages:</u>

Gives good sunlight to all parts of tree.
The fruit is easy to pick.

<u>Disadvantages:</u>

Tree is not as strong and can break more easily.

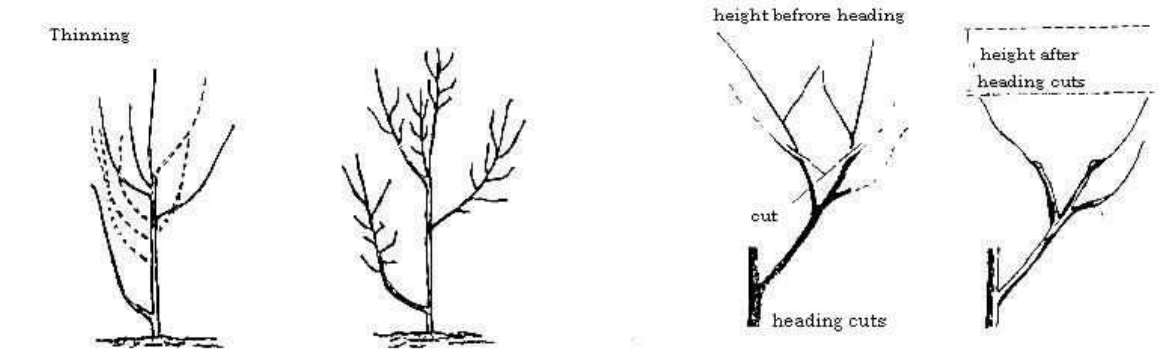
The main branch, then side branches the first being about 18 inches from the ground. The next branches above space 8 inch above, and not directly above the ones below. Choose branches that grow at about 45° angle to the central branch.

Train branches to grow at this angle, if they do not do this when the tree is about 4 yrs old. Prune the main branch back each year and each side branch. This promotes buds/spurs to form on lower branches.

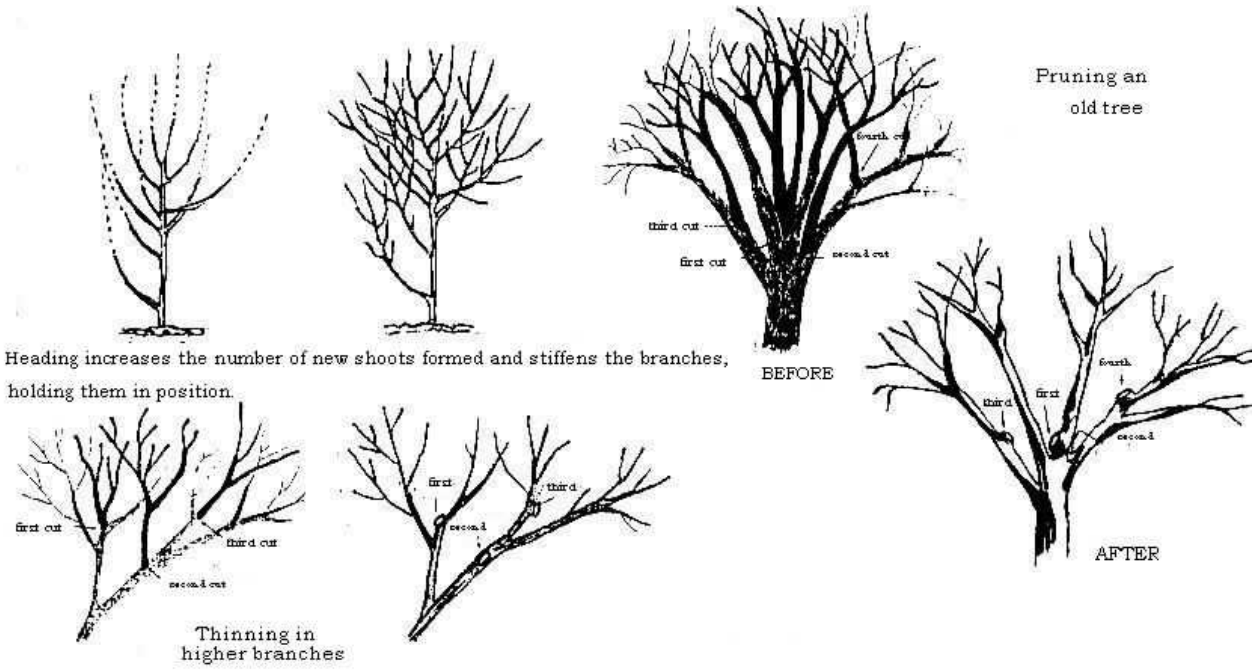
INDIVIDUAL CARE OF FRUIT BEARING TREES

Type	Planting Time	Soil	Climate	Pruning	When To Pick	Storage	Distance S=Standard D=Dwarf	Other
Apple	winter	well drained	winters need to be cold	1st year 3-4 main branches	before ripe and easy to twist	cool dark place	S = 20 - 30ft D = 10ft	2 varieties together
Pears	winter	any except very dry	winters cold summers not too hot	as apple	pick before ripe	cool place	S = 20 - 30 ft D = 10ft	
Peaches	winter	well drained slightly acid	winters cold	3-4 main branches prune each year	when ready to eat		S = 20ft apart D = 10ft	
Apricots	winter	well drained	No frost in winter Summer not too hot		when ripe		S = 20 - 30ft D = 10ft	
Plums	winter	well drained	All types choose variety	as peaches	pick before ripe	cool dark when ripening		plant 2 variety together
NUTS								
Almonds		any	Summers not too hot or wet	no pruning	when they fall off the trees	store in a dry place		plant two varieties
Mulberries		well drained		no pruning	when black and easy to pick			
Figs	winter		Choose variety according to rainfall	not for first ten years	soft, only pick when ripe			

Type	Planting Time	Soil	Climate	Pruning	When To Pick	Storage	Distance S=Standard D=Dwarf	Other
Cherries							20 - 30ft	two varieties need to cross pollinate
Mango		all types even stony and sandy	Hot dry not too cold winter	no pruning	after skin becomes orange	pick a few at a time	10 meters	has short or hairy variety
Avocado	Anytime Dig hole 4 weeks	well drained slightly acid a lot of rain	Moderate temperature	no pruning	anytime	store in cool place in paper bag		
Bananas	Spring and Summer		Hot frost Free moist climate	4 months after planting cut out all except one. Another 4 mos. again + 1 = 2	sides become round	store where air is well circulated and not with other fruit		
Papaye Paw Paw		well drained not too acidy	Hot frost free		when they start to turn yellow	cool place ripen quickly after picking		need 1 male tree for 20 female trees
Pineapple		well drained	Hot weather The hotter the weather the sweeter the pineapple	grown from slips or suckers	when half the fruit is yellow		1' x 3' apart	
Citrus	anytime	well drained	no frost winters	no pruning except dead branches	when they turn green, yellow or orange	cool place	1ft apart x 3ft apart	fertile 8x a year and needs more water then



Thinning reduces the number of new shoots and directs growth.



Heading increases the number of new shoots formed and stiffens the branches, holding them in position.

V. USE OF TREES

Trees For Animals

Many people think that grass is the only food for cattle. But some trees can give better food than grass.

Cattle are often weak at the end of winter because they do not have enough grass. If they could get food during winter they would stay strong and be ready for ploughing at the beginning of summer. Cattle can get a lot of food from the pods and bark of fodder trees like Acacia, Honey Locusts, Carobs, and Leucaena.

These trees can get their water from deep in the ground so they do not die in drought when the grass dies. The roots also hold the soil together and this helps to stop erosion. They give shade to cattle and keep nitrogen in the soil so that the grass grows better.

Trees for Wood

Everybody needs fuel for cooking food and heating their homes. In the past when there was enough wood, people used the dead trees for firewood and did not cut down the living trees.

These trees are all good for woodlots.
See which are the right trees for your soil and weather.

NAME OF TREE	SCIENTIFIC NAME	WHAT KIND OF SOIL CAN IT GROW IN?	HOW DRY CAN THE PLACE BE?	HOW COLD CAN THE PLACE BE?
Port Jackson Willow	Acacia cyanophylla	Poor	Dry	Warm (no frost)
Green Wattle	Acacia decurrens	Poor		Cool
Black wood	Acacia melanoxylon	Good	Medium	Cool
Deodar	Cedrus deodara	Good	Dry	Cold
Arizona cypress	Cupressus glabra	Good	Dry	Cold
Mexican cypress	Cupressus lusitanica	Good	Rainy	Cool
Himalaya cypress	Cupressus torulosa	Medium	Dry	Cold
White gum	Eucalyptus alba	Medium	Medium	Warm
Saligna gum	Eucalyptus grandis	Good	Rainy	Warm
Camden Woolybutt	Eucalyptus macarthuri	Medium	Medium	Cold
Spotted gum	Eucalyptus maculata	Medium	Medium	Warm
Yellow box	Eucalyptus melliodora	Medium	Dry	Cold
Black iron bark	Eucalyptus sideroxylon	Poor	Dry	Cool
Patula pine	Pinus patula	Medium	Medium	Cool
Slash pine	Pinus elliottii	Medium	Medium	Cold
Chir pine	Pinus roxburghii	Medium	Dry	Cold
Loblolly pine	Pinus taeda	Medium	Rainy	Warm
Semi evergreen grey poplar	Populus Canescons	Poor	Dry	Cool
Pseudo acacia	Robinia pseudo acacia	Poor	Dry	Warm to Cool

Woodlots

Villages can grow their own trees for wood. It is best to plant a lot of trees in a woodlot. Then you can fence the woodlot to protect the trees from goats and cattle. This is cheaper then fencing every tree. Trees that are fast-growing are best.

Weeding – Until trees are 6ft, weed around them and fertilize.

When to Cut Down

- Gums can be cut down after 6 years, but you will get more wood if you wait until 10 years.
- Cut poplars and wattles after 4 years.
- For pines you must wait much longer – about 15 years.

Poplars, gums, wattles and pseudo acacia will make a lot of new trunks on each tree after the first trunk is cut. Cut the smallest ones off, leaving about 4 to grow. Small trunks make straight poles which are for fencing and building.

Trees can also be planted for shade – between houses, along crop lands. This also helps against wind and *to prevent against SOIL EROSION.*

Do plant new trees in old holes, instead plant in between.

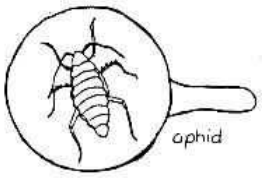
VI. PESTS AND TREATMENTS

Pests

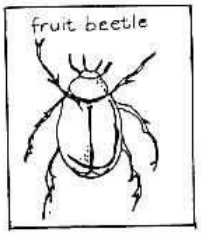
Pests of fruit trees have natural insect enemies: for example, ladybirds and praying mantises eat aphids and other pests. You should only use chemical poisons when pest problems are really bad because poisons also kill these useful insects. When you spray trees, spray so that all the leaves are wet. Chemical poisons are harmful to people, so do not let anyone eat the fruit for at least 2 weeks after you have sprayed the tree. Always wash the fruit carefully before you eat it.

These are the most common pests and the poisons you can use to get rid of them:

Aphids are very small green insects which attack apples, apricots, bananas, citrus, pawpaws, peaches, pears, and plums. They suck the juice out of leaves and spread diseases. You can get rid of aphids by washing them off with water and soapy spray or by introducing lacewings or ladybug beetles. You can also spray them with home-made nicotine or garlic poisons. If you buy poison, use Malathion. Mix 2, 5 ml (1/2 bottlecap) of Malathion with 2 liters of water.

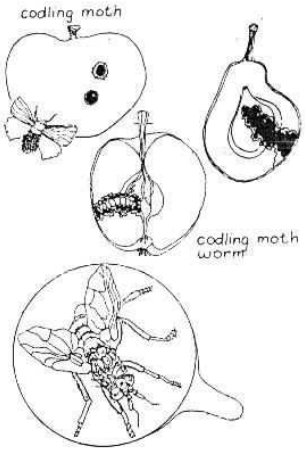


Fruit beetle. These big black and yellow beetles eat ripe fruit. You cannot spray poisons onto ripe fruit because it will be harmful to eat. The best way to get rid of them is to pick them off the fruit and kill them by dropping them in a tin of paraffin. You can also



kill them by pouring sugar water mixed with poison into cans and hanging the cans in your fruit trees. Mix 3 kg of Dipterex or 30 ml of Malathion with 1 kg of sugar in 10 liters of water. The beetles will drink this poison instead of eating the fruit.

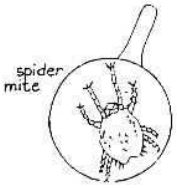
Codling moths are grey moths which lay eggs on leaves and fruit of apples, apricots, pears, and walnuts. The eggs become worms which get inside the fruit and eat it. To kill the moths, spray the fruit trees every 2 weeks from the time the flowers fall off, until 2 weeks before you pick the fruit. Spray with diazinon.



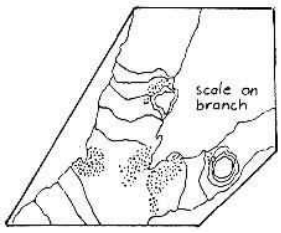
Fruit flies are small flies which make holes in fruit like peaches, pears, guavas, grapes, and mangoes and lay eggs in them. The eggs become worms which eat the fruit and make it rotten. For peaches, spray with Lebaycid poison 30, 20, and 10 days before harvesting.

Citrus psylla are small yellow insects which eat the leaves of citrus trees. The leaves look lumpy and the trees do not grow well. To get rid of citrus psylla, spray new leaves with Oleum and then spray them again after 10 days. Use 80 ml (16 caps) of Oleum in 10 liters of water.

Red spider mites are very small red insects which attack apples, bananas, peaches, and pears. They look like very small spiders and spin webs under the leaves. The leaves become yellow and fall off. You can control red spider mites by taking out weeds and other plants with hairy leaves growing around fruit trees because the insects breed in these plants. Keep the trees washed and spray them with sulfur.



Scale are very small flat insects which live on leaves and branches. They are so small they look like colored spots – gray, red, brown or black. Some kinds of scale can kill fruit trees. You can get rid of scale by spraying with Malathion as soon as you see the colored spots. Use 2, 5 ml (1/2 a cap) mixed with 10 liters of water.



Please check with local authorities on which poisons to use.

Diseases

Fruit trees get many diseases and it is sometimes difficult to know which disease your tree has. Most diseases make the fruit change color or get rotten. If you are not sure what kind of disease it is or how to treat it, ask your local authorities. These are some of the most common diseases:

Leaf curl disease makes the leaves of peach trees curl up. They get fat, and sometimes curl up because of aphids or because of a fungus. To control: Spray in the fall with lime sulfur and before flower buds open in the spring.

Powdery mildew attacks apples, peaches, pears and grapes. It is a whitish powder on the leaves and fruit. It occurs where there is too much moisture. Spray with lime sulfur.

Rust is a disease of apricots, avocados, peaches, plums and mangoes. The leaves get white or brown powdery spots which become yellow around the edges. Rust is worse in rainy weather, and when it is hot and wet. As soon as you see rust spots, dust with Copper/Sulfur dust, every 10 days and after rain, until 4 weeks after the spots go.

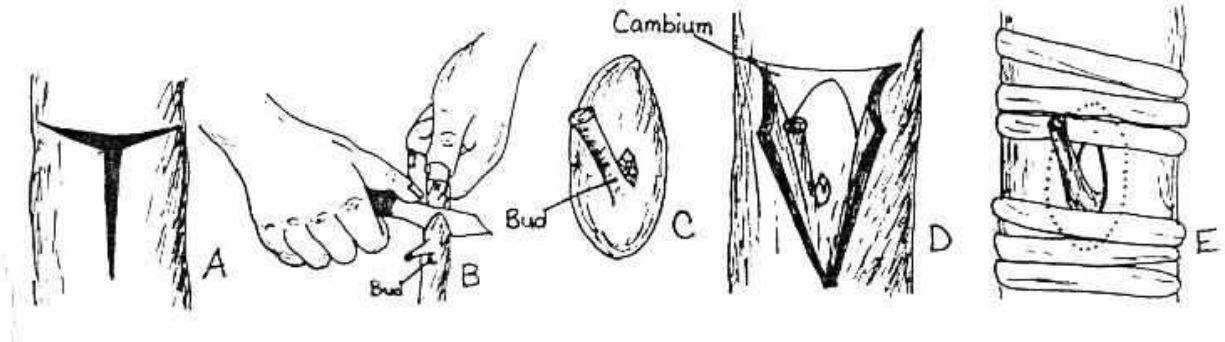
VIII. GRAFTING

The seeds from fruit trees do not produce a good tree. If a good fruit tree needs to be reproduced, the best way to do this is to graft it onto a good established root stock. There are different types of grafting such as:

Methods of Grafting

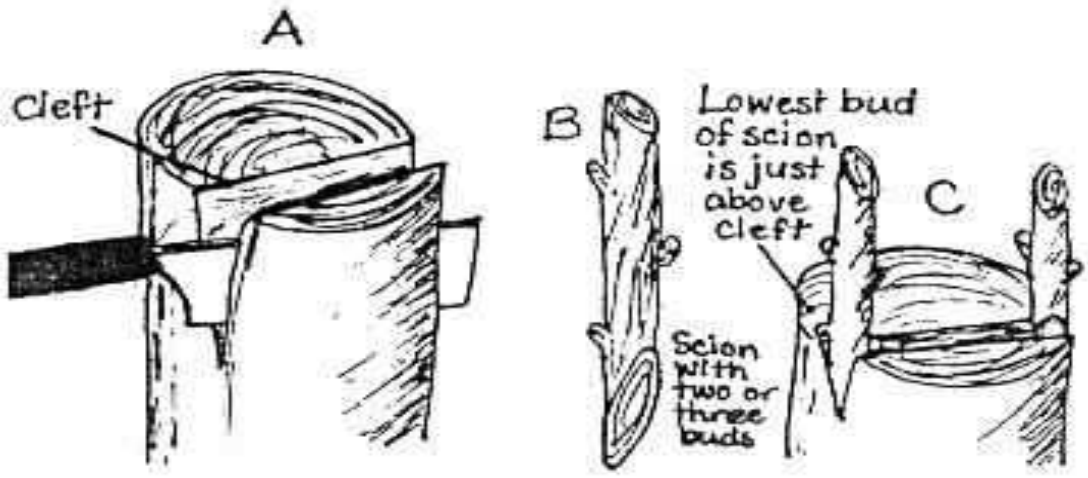
Bud-Grafting

This should be done at the end of summer.



Cleft Grafting

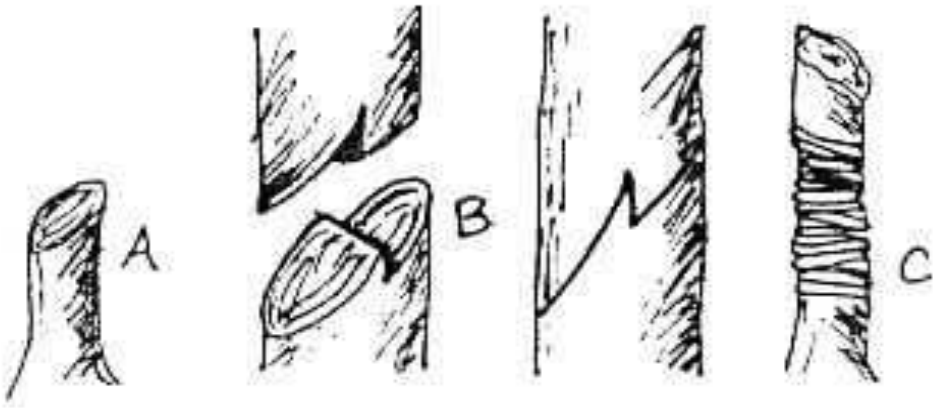
Do this in early spring.



Whip Grafting

Do this in early spring.

Use this method when root stock is the same size as the graft stock.



Sources of Information

People's Workbook – Environmental and Development Agency South Africa

Treepeople

Master Gardener – Oregon State University Extension

Sommer Haven International Ministries Overseas Training Seminars
Under the direction of Agnes I. Numer

Tree Care

Sustainable Agriculture

Workbook

Name: _____

©1995 Sommer Haven International

Read Section I on page 2 of the Training Pac

Underline the correct answer

1. Trees can grow on (hills, banks) and in (dingy, rocky) places.

2. Trees (are, are not) easily killed by drought.

3. Trees stop soil (explosion, erosion) and (improve, ruins) the soil.

4. Trees can be planted to protect (fields, friends) and (houses, family) from the wind.

Read sction II on page 2 of the Training Pac

Underline the correct answer

5. The hole for a tree must be (round, square) so that the roots will grow towards the corners.

6. Do not put (manure, sand) or (rocks, compost) in the hole of a new plant.

7. Trees, which lose their leaves in the winter, should be planted in the (fall, winter).

8. Trees, which do not lose their leaves, are best planted during the (spring, summer).

9. Plant peach, plum, apricot, fig, guava and papaya trees about (3m, 4m) away from each other.

10. Plant citrus, mango and nut trees (9m, 7m) away from each other.

11. Plant avocado trees (8m, 10m) away from each other.

Read section III on page 3 of the Training Pac

Underline the correct answer

12. Take the time to (plan, pluck) and (plant, plot) right.

13. (Squander, Standard) trees are trees which have the original roots.

14. (Dwarf, Draft) trees are trees that have a different root stock.

15. Cut (split, splint) or (dangerous, damaged) bare roots off with sharp clippers.

16. It is better to give trees a lot of water (once, twice) every week than a little every day.

17. Some trees or vines can be grown from (shavings, cuttings).

Read section IV on page 6 of the Training Pac

Underline the correct answer

18. (Pruning, Prodding) is cutting some branches off a tree so that others will grow better.

19. (Thinning, Thinking) reduces the number of new shoots and directs growth.

20. (Herding, Heading) increases new shoots.

Name the four (4) things needed for pruning:

21._____

22._____

23._____

24._____

25. Never break off a (branch, breach).

26. The right way to cut a branch is with (two, three) cuts.

27. It helps the roots to grow strong if you (prick, prune) the tree after planting.

Name two (2) different ways to prune a tree:

28. _____ _____

29. _____ _____

Score exercises 1 - 29

Read section V on page 12 of the Training Pac

Underline the correct answer

30. Cattle can get a lot of (food, fuel) from pods and bark of fodder trees.

31. (Roads, Roots) hold the soil together to help stop erosion.

32. Trees give (shade, shoots) to cattle.

33. Trees keep nitrogen in the (oil, soil) so that grass will grow better.

34. Everybody needs (fire, fuel) for cooking food and heating their homes.

35. Do not plant new trees in old (holes, homes), instead plant in between.

Read section VI on page 14 of the Training Pac

36. Always wash the fruit carefully (after, before) you eat it.

Name the seven (7) most common pests for fruit trees:

37._____

38._____

39._____

40._____

41._____

42._____

43._____

44. Most diseases make the fruit change (coats, color) or get (rotten, forgotten).

Name the three (3) most common diseases for fruit trees:

45._____

46._____

47._____

Read section VII on page 16 of the Training Pac

Name the three (3) most common types of grafting:

48._____

49._____

50._____

STOP! Score exercises 30 – 50
DO NOT look back at the Training Pac while completing the Review.

Review
(4 points each answer)

True or False (Write "T" if the answer is True and "F" if the answer id False)

1. _____ Trees grow on hills and in rocky places.
2. _____ Trees stop soil erosion and improve soil.
3. _____ Put manure or compost in the hole of a new plant.
4. _____ Trees that lose their leaves in the winter, should be planted in the winter.
5. _____ Trees which do not lose their leaves, are best planted during spring.
6. _____ Standard trees are trees which have the original roots.
7. _____ Dwarf trees are trees that have a short root stock.
8. _____ It is better to give trees a lot of water twice every week than a lot everyday.
9. _____ Some trees or vines can be grown from cuttings.
10. _____ Never break off a branch.

Matching

11. ____ Cutting some branches off a tree so that others will grow better	(a) trees
12. ____ Increases new shoots	(b) roots
13. ____ Reduces the number of shoots	(c) pruning
14. ____ Holds the soil together to stop soil erosion	(d) cattle
15. ____ Trees give shade to	(e) heading
16. ____ Keeps nitrogen in the soil	(f) thinning

Underline the correct answer

17. Everybody needs (fire, fuel) for cooking food and heating their homes.
18. Always wash the fruit carefully (after, before) you eat it.
19. Most diseases make the fruit change (coats, color) or get (rotten, forgotten).
20. Do not plant new trees in old (holes, homes) instead plant in between.

Name 2 different ways to prune a tree:

21. _____
22. _____

Name the 3 most common diseases for fruit trees:

23. _____

24. _____

25. _____

Score exercises 1 – 25

DO NOT look back at the Training Pac while completing the Pre-Test.

STOP!

You must now prepare yourself for the Pre-Test. In preparation, you may want to follow one or more of theses suggestions:

1. Review the Objectives.
2. Rewrite every incorrect exercise in the Training Pac.
3. Reread each section of the Training Pac.
4. Relearn each section you still do not completely understand.

Pre-Test
(5 points each answer)

True or False (Write "T" if the answer is True and "F" if the answer is False)

1. _____ Trees grow on hills and in rocky places.
2. _____ Put manure or compost in the hole of a new plant.
3. _____ Trees which do not lose their leaves, are best planted during spring.
4. _____ Standard trees are trees which have the original roots.
5. _____ Some trees or vines can be grown from cuttings.

Matching

6. _____ Increases new shoots	(a) trees
7. _____ Holds soil together	(b) heading
8. _____ Keeps nitrogen in the soil	(c) roots

Underline the correct answer

9. Everybody needs (fire, fuel) for cooking food and heating their homes.
10. Always wash the fruit carefully (after, before) you eat it.

Name 5 of the 7 most common pests for fruit trees.

11. _____
12. _____
13. _____
14. _____
15. _____

Name 3 most common types of grafting:

16. _____
17. _____
18. _____

Name 2 different ways to prune a tree.

19. _____
20. _____

Score exercises 1 - 20

STOP!

You must now prepare yourself for the Final Test. In preparation, you may want to follow one or more of these suggestions:

1. Review the Objectives.
2. Review the Review.
3. Review every incorrect exercise in the Pre-Test.
4. Reread each section of the Training Pac.
5. Relearn each section you still do not completely understand.

Tree Care

Score Key

TREE CARE
SCORE KEY

Page A

1) hills…rocky
2) not easily
3) erosion…improve
4) fields…houses
5) square
6) manure…compost
7) winter
8) summer
9) 3m
10) 7m
11) 10m
12) plan…plant
13) Standard
14) Dwarf
15) split…damaged
16) once
17) cuttings

Page B

18) Pruning
19) Thinning
20) Heading
21) Secateurs
22) Saw
23) Bleach/Chlorox or Jeyes Fluid
24) Tree Sealer
25) Branch
26) Three
27) Prune
28) Central Leader
29) Open Center
30) food
31) Roots
32) shade
33) soil

Page C

34) fuel
35) holes
36) before
37) Aphids
38) Fruit Beetle
39) Codling Moths
40) Fruit Flies
41) Citrus Psylla
42) Red Spider
43) Scale

Page C (continued)

44) color…rotten
45) Leaf Curl Disease
46) Powdery Mildew
47) Rust
48) Bud Grafting
49) Cleft Grafting
50) Whip Grafting

Page D (Review)

1) T
2) T
3) F
4) T
5) F
6) T
7) F
8) F
9) T
10) T
11) c
12) e
13) f
14) b
15) d
16) a
17) fuel
18) before
19) color…rotten
20) holes
21) Central Leader
22) Open Center

Page E (Review continued)

23) Leaf Curl Diseases
24) Powdery Mildew
25) Rust

Page F (Pre-Test)

1) T
2) F
3) F
4) T
5) T
6) b
7) c
8) a

9) fuel
10) before
11) Aphids
12) Fruit Beetle
13) Codling Moths
14) Fruit Flies
15) Citrus Psylla
or Red Spider
or Scale
16) Bud Grafting
17) Cleft Grafting
18) Whip Grafting
19) Central Leader
20) Open Center

FINAL TEST

Tree Care

NAME: _____

DATE: _____

SCORE: _____

TREE CARE
FINAL TEST
(5 points each answer)

Name the 2 different ways to prune a tree:

1. _____
2. _____

Name 5 of the 7 most common pests:

3. _____
4. _____
5. _____
6. _____
7. _____

Name the 3 most common diseases for fruit trees:

8. _____
9. _____
10. _____

Name the 3 different types of Grafting:

11. _____
12. _____
13. _____

True or False (Write "T" if the answer is True and "F" if the answer is False)

14. _____ Trees stop soil erosion and improve soil.
15. _____ Trees that lose their leaves in the winter, should be planted in the winter.
16. _____ Dwarf trees are trees that have a short root stock.
17. _____ It is better to give trees a lot of water twice every week than a lot everyday.
18. _____ Never break off a branch.

Underline the correct answer

19. Most diseases make the fruit change (coats, color) or get (rotten, forgotten).
20. Do not plant new trees in old (holes, homes) instead plant in between.

TREE CARE
FINAL TEST KEY

1) Central Leader
2) Open Center
3) Aphids
4) Fruit Beetle
5) Codling Moths
6) Fruit Flies
7) Citrus Psylla
or Red Spider
or Scale
8) Leaf Curl Disease
9) Powdery Mildew
10) Rust
11) Bud Grafting
12) Cleft Grafting
13) Whip Grafting
14) T
15) T
16) F
17) F
18) T
19) color…rotten
20) holes