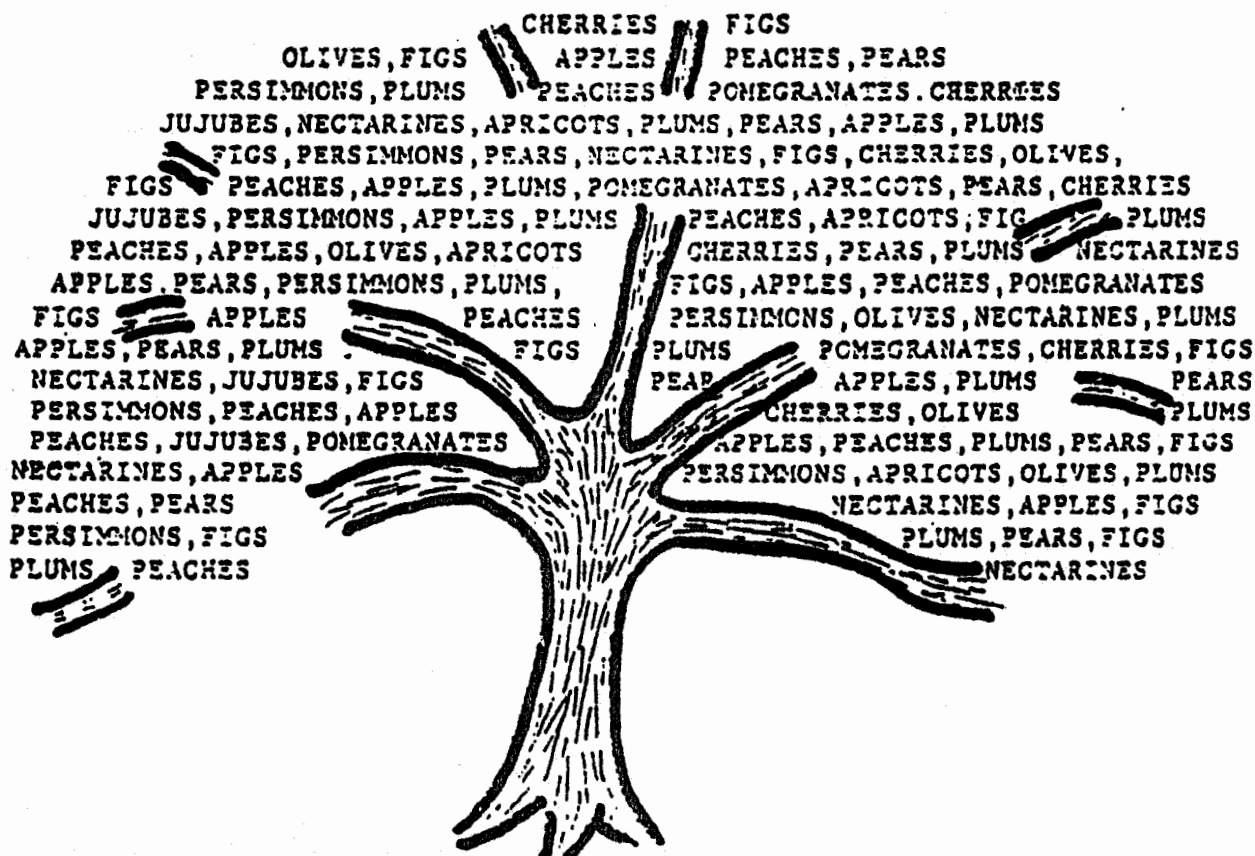


# GROWING TREE FRUITS AT HOME IN THE TEXAS HILL COUNTRY

## AgriLIFE EXTENSION

Texas A&M System

(BY JOHN A. LIPE, DECEASED)



### CONTENTS

Site Selection, Planting & Tree Care--1	Cherries-----11
Soils-----1	Apples-----11
Planting Fruit Trees-----2	Pears-----16
Caring for Fruit Trees-----3	Jujubes-----17
Fruit Trees for the Hill Country-----4	Persimmons-----18
Peaches-----4	Figs-----19
Plums-----9	Olives-----20
Apricots-----9	Pomegranates-----20
Nectarines-----10	Nursery Sources-----20

## SITE SELECTION, PLANTING AND TREE CARE

### Soils

Fruit and nut trees require well-drained sandy, sandy loam or clay loam soils. Heavier clay soils that can readily be molded into a firm ball when moist are generally unsuitable. Soils high in calcium carbonate with caliche at or very near the surface are also generally unsuitable.

Topsoil depth for fruit trees should be least 1 to 2 feet and near 5 feet for pecans. Shallow topsoil can be improved by terracing or mounding the topsoil and planting the trees on the elevated ridge or mound.

Soil drainage is critical for good tree growth. Water drainage of a questionable soil can be checked by digging a post hole approximately 30 inches deep and filling it with water. That water should drain from the hole in less than 24 hours on a good site. Drainage in 24 to 48 hours indicates a marginal soil and water standing in the hole after 48 hours indicates unsuitable soil.

Determined gardeners with marginal or unsuitable soil have the option of hauling in good topsoil, working in generous amounts of peat moss, compost or similar organic material at least 1 foot deep, or mounding thin topsoil.

Soil pH is easily determined from a soil test and provides important clues to possible problems. Iron chlorosis (yellow leaves with green veins) is a common problem with fruit trees growing in soils with a pH above 7.5. Cotton root rot, a soil-borne fungus thrives in alkaline soils (above 7.0).

Soil Disease - Cotton root rot is the primary soil-borne disease in the Hill Country. Apples are readily killed by this essentially uncontrollable fungus. Pears are quite vulnerable. Peaches and other fruits have fair tolerance but may also be killed. As indicated above, the disease is limited to alkaline soils.

Contrary to popular opinion, the occurrence of cotton root rot is unrelated to the earlier use of the land for cotton production. The disease is native to this area and attacks a wide range of plant species.

Attempts to control severe pressure from cotton root rot are almost always unsuccessful. Sulfur has been mixed with the soil, both as a acidifying and as fungicide treatment, but there is no clear evidence that this can provide practical or lasting control. Acidifying soil with sulfur is also risky because the amount of sulfur needed for moderate acidification (pH 6.0-6.5 is optimum) varies greatly with the soil type and calcium content. Too much sulfur added to a soil can lower the pH too drastically and can salt the soil to a point where nothing will grow.

Practical ways to help reduce the development of the cotton root rot fungus

include improving soil aeration and drainage and cooling of the soil. Aeration and drainage can be improved by mixing in generous amounts of composted organic matter including peat moss, pine bark, leaves and lawn clippings. Planting on raised beds or mounds also improves drainage and aeration. A thick mulch can be used to cool the soil and slow down fungal growth. The cotton root rot fungus thrives in hot soils (above 85° F.)

These steps will only improve your odds of growing fruit trees under moderate cotton root rot pressure. As indicated, there is no sure cure for cotton root rot.

### Planting Fruit Trees

Plant trees in the winter, preferably before March 1. Bareroot trees planted as early as December will begin to make slight root growth and generally exhibit better survival and growth in the first year. Container grown trees can be planted at any time although winter is still the best time to plant them.

Be sure that the roots are protected when you purchase bareroot trees. If the roots appear to have dried before the trees were received, reject the trees and notify the nursery.

Heel in' trees if you are not ready to plant them when you purchase them. This amounts to simply digging a hole or shallow trench in which the roots of a tree or small bundle of trees can be covered with soil to protect them until they are permanently planted.

Soak the roots in water for not more than an hour before the tree is planted to insure that the roots are not under any moisture stress at planting.

Dig a planting hole just large enough for the root system of the tree to be spread in a natural position. Avoid digging a hole deeper than the roots to be placed in it, as loose soils beneath the roots usually cause the plant to sink too deep. An exception to this is when trees are to be planted in an obviously unsuitable soil such as caliche. In such soils, the only alternative may be to dig large, wide holes and fill them with topsoil. If the native soil appears to be impervious to water, be certain that added topsoil is mounded or boxed at least 1 foot above ground-level.

Set plants at approximately the same depth as they were growing in the nursery. Water the trees thoroughly soon after they are set and be sure that air pockets are filled and that the soil is at the proper level on the base of the tree after watering.

Prune off at least 1/3 to 1/2 of the top of bareroot trees before or immediately

after planting to compensate for roots that were lost when the plants were dug from the nursery. Strong, container grown trees may need little or no pruning at planting, but be certain that the tree has actually been growing in the container. Sometimes bareroot trees are potted and sold as container trees without actually developing new roots in the pot.

### Caring for Fruit Trees

Training and pruning of the young tree is important to develop a strong, productive and attractive tree. Training and pruning systems vary and are discussed under each of the types of fruit trees listed.

Weed competition often results in death or poor growth of young trees. An area at least as wide as the canopy of the trees should be kept weed-free. This can be done with a hoe, with plastic (or other types of mulching materials that prevent weed growth) or with chemicals. Woven polypropylene ground cover, sold chiefly by greenhouse suppliers, is especially good for smothering weeds. It is durable and will allow water penetration while stopping weed growth.

Glyphosate (sold as Roundup® and various other trade names), is probably the most popular chemical used for weed control around fruit trees. It will kill a wide range of weeds and grasses including Bermuda grass. The applicator must always bear in mind that Roundup® can also damage or kill fruit trees if spray (including drift) contacts foliage or green bark.

Fusilade® (Grass-B-Gon®, Ornamec®, Take-Away®) is a safe chemical for killing grass near small fruit trees because it kills grasses only and will not harm the trees.

Many lawn chemicals used to kill broadleaf weeds out of grass contain 2,4-D and closely related compounds. These materials must not be used near fruit trees.

Irrigation is often the difference in life and death of a first year tree, and mature trees usually require irrigation to produce good yields in the Hill Country. Drip irrigation is ideally suited for watering fruit trees, but the method is not important as long as the trees are watered regularly.

Always apply sufficient water to thoroughly soak the soil at each watering. Water a minimum of once a week under the stress of summer heat.

Fertilization is important for good growth and production, but if carelessly done, can cause serious damage or death of the tree.

Nitrogen is the most seriously limiting nutrient in most Hill Country soils.

This is most efficiently supplied with ammonium sulfate (21-0-0). Phosphorus is also low in most Hill Country soils although phosphorus deficiencies in fruit trees seldom occur. Nitrogen and phosphorus for fruit trees can readily be purchased as 15-5-10, 13-13-13, and many other fertilizer formulations. Potassium is rarely needed in Hill Country soils, however, use of nitrogen-phosphorus-potassium fertilizers are not detrimental.

Nitrogen fertilizers are very water soluble and can be simply spread on the soil under the tree and watered in. Phosphorus is much less soluble and is more quickly available if hoed or tilled into the soil. When planting, never place fertilizer in the tree hole and never place fertilizer against the trunk of any plant.

Iron deficiency (termed 'iron chlorosis' and characterized by yellow leaves with green veins) occurs commonly in fruit trees in soils with a pH higher 7.5. Sprint (Fe-138) or Ferriplus (Fe-138) applied to the soil, are the only products that will readily overcome iron chlorosis. Foliar sprays or soil treatments of ferrous sulfate (copperas) are usually unsatisfactory.

Soils with a pH above 7.5 and a high calcium content (this characterizes much of the caliche-laden or heavy black soils of the Hill Country) should not be fertilized heavily with phosphorus. Phosphorus can tie up iron and create severe iron chlorosis on fruit trees in these soils. A soil analysis is the only sure way to determine the deficiencies and needs of your soil. Your County Extension Office has instructions and containers for collecting and mailing soil samples.

## FRUIT TREES FOR THE HILL COUNTRY

### Peaches

Peaches are a major commercial crop in the Hill Country, and make a good addition to the home garden. Peaches are not good landscape trees because they are relatively short-lived and numerous insect and disease pests attack them.

The elevation of your site should be high relative to the surrounding land if you are to have consistent crops. Peaches bloom early each spring and trees planted in low areas consistently lose their crop to freeze damage.

### Varieties

Varieties are available that ripen from mid May to early September. The later ripening varieties are seldom planted because of the added difficulty and cost of protecting the fruit on the tree. In any planting, it is advisable to select several varieties with differing dates of ripening in order to have fresh peaches over a longer period of time. The best quality varieties, particularly for canning and freezing, are those that ripen after mid-June. If landscape beauty is a priority in

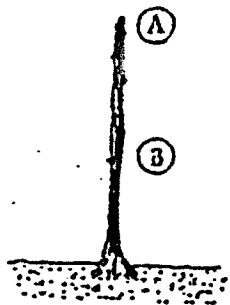
addition to fruit quality, the "Red Baron" flowering peach is an excellent variety to plant. It produces beautiful double blossoms in the spring, produces high quality fruit and the tree seems to surpass most commercial varieties in longevity.

If nematode problems are suspected in your soil, purchased trees budded onto "Nemaguard" rootstock.

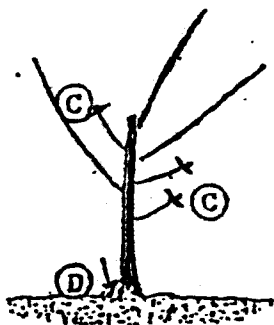
<u>Variety</u>	<u>Ripening Period</u>	<u>Stone Adherence</u>
Springold	Mid-May	Cling
Bicentennial	Mid to Late May	Cling
Regal	Mid to Late May	Cling
June Gold	Late May to Early June	Cling
Sentinel	Early June	Semi-Cling
Harvester	Mid-June	Free
Red Globe	Late June to Early July	Free
Majestic	Late June to Early July	Free
Bounty	Late June to Early July	Free
Red Baron	Early July	Free
Denman	Early July	Free
Loring	Early July	Free
Ruston Red	Mid July	Free
Dixiland	Mid July	Free
Redskin	Mid July	Free
Oauchita Gold	Late July-Early August	Free
O'Henry	Mid to Late August	Free
Parade	Late August to Early Sept.	Free

### Planting

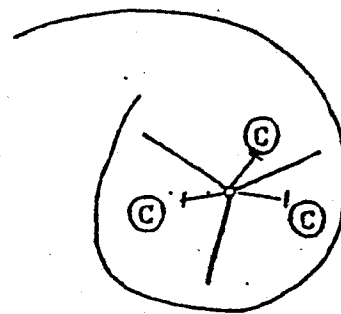
A 30-36 inch bareroot tree is generally the most efficient and economical tree to purchase; however, almost any of the commonly available size trees will transplant and grow well if they are healthy and well cared for. Refer to the selection on "Planting Fruit Tree" for general planting suggestions.



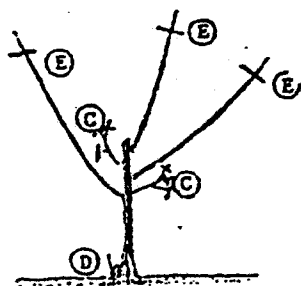
AT PLANTING  
whip topped at  
2 FEET



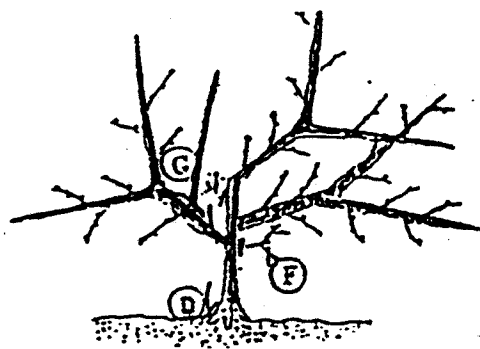
1ST YEAR  
Spring (May)  
SELECT SCAFFOLDS



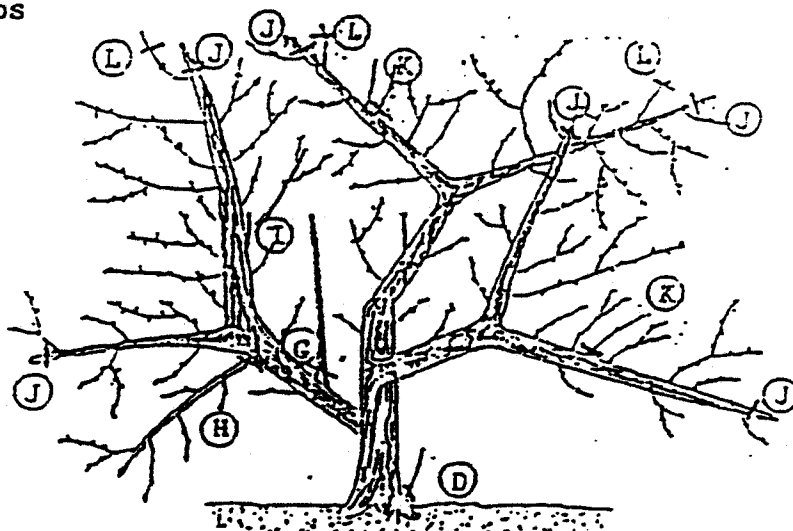
TOP VIEW



1ST YEAR  
SUMMER (JULY) OR  
1 YEAR OLD  
WINTER (FEBRUARY)  
CLIP SCAFFOLDS TO DEVELOP  
SUBSCAFFOLDS



1 YEAR OLD OR 2 YEAR OLD  
WINTER (FEBRUARY)  
OPEN CENTER TREE WITH THREE SCAFFOLDS  
AND SIX SUBSCAFFOLDS



BEARING TREE - 3 YEAR OLD AND OLDER  
WINTER (FEBRUARY)

- A. At planting, top the tree at approximately 24" above the ground.
- B. Remove all side branching from the topped tree. Steps A and B are necessary to compensate for root loss when the tree was dug from the nursery.
- C. Pinch the tips from shoots that are not needed to develop the framework of the tree. This will cause them to branch and develop short leafy growth that will provide food materials to hasten tree growth.
- D. Remove "suckers" from the trunk as soon as they are noticed.
- E. Cut the tips (about 4' above the ground) from the branches selected as scaffolds. This will force them to branch and develop subscaffolds.
- F. Remove short branched shoots developed in "C" above.
- G. Remove "waterspouts" (vigorous erect shoots in the center of the tree) as soon as they are noticed.
- H. Prune off branches that may sag to the ground under a crop load or because raftering angles, appear vulnerable to splitting under the crop load or other pressure.
- I. Remove larger inward growing branches to maintain an open, bowl-like center in the tree. The bowl should be kept open to allow ample light to reach all parts of the tree, but young fruiting shoots should always be left on the sides and bottom of the bowl to provide shade and prevent sun injury to the scaffold limbs.
- J. Where branches need to be shortened, direct growth away from the open center by making cuts just above outward growing branches.
- K. Fruit are borne on 1 year old shoots. Prune out only those that are crowded and will probably receive little direct sunlight.
- L. Top the tree at a practical height. Trees in commercial orchards are usually topped at 8' but they can be grown taller—especially if support is provided to prevent scaffold splitting from a heavy crop.

A planting distance of 18 feet between trees and 24 feet between rows is standard. A closer spacing is acceptable on marginal soils, but closer spacings on good soils will necessitate more exacting care.

### Training and Pruning

Peach shoots need plenty of sunlight in order to form fruit buds and to develop attractive, well-colored fruit. Heavily shaded peach branches not only fail to fruit, but often die. The open-center training and pruning system outlined is designed to achieve these objectives.

Do not severely prune older untrained trees to convert them to this system. On such trees simply remove some of the heavily crowded and shaded twigs and branches as well as any dead wood.

Tree wound dressing may be used on larger cuts, but is generally of little or



no practical value.

When pruning trees that may be diseased, it is a good practice to dip the pruning tools in a 10% bleach solution or in alcohol after pruning each tree.

### Fertilization

General fertilizer guidelines are listed below. Refer to the section on "caring for Fruit Trees" for more information on fertilizing fruit trees.

The rates listed are for healthy, vigorous trees that are receiving water regularly. If tree growth is poor because of drought stress or health problems not related to nutrition, cut back on these fertilizer rates.

Preplant - Till in P (phosphorus) or P & K (potassium) as indicated by a soil test.

	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>
<u>First Year</u> (Per tree)		15-5-10 (1 C.)	21-0-0 (1 C.)	21-0-0 (1 C.)	21-0-0
<u>Second Year</u> (Per tree)	15-5-10 (2 C.)	21-0-0 (2 C.)	21-0-0 (2 C.)	21-0-0 (2 C.)	

### Bearing Trees -

February -21-0-0 (6 cups/trees). Substitute 15-5-10 (7 cups/tree) every third year.

August -21-0-0 (1 ½ cups/trees) if leaves healthy,  
But no new growth; or 21-0-0 (3 cups/tree)  
If leaves have poor color and no new growth.

Note: Do not fertilize trees with vigorous  
Growth in August.

### Insects and Diseases

It is difficult to produce edible peaches without a good spray program. Refer to Texas Agricultural Extension Service leaflets #L-1140 "*Homeowners Fruit and Nut Spray Schedule*" or #b-1689 "*Insect and Disease Control on Peaches, Apricots, Nectarines and Plums*" for approved materials and proper spray timing. These publications are available from your local County Extension Office.

### Plums

At least 2 varieties should be planted to insure pollination of certain varieties.

If problems with nematodes are known or suspected, order trees that are budded onto "Nemaguard" peach rootstock.

Recommended varieties include:

Methley – ripe late May to early June. Small to medium size, mottled purple peel with juicy red flesh. Sweet, excellent flavor. Soft and does not store well. Self fruitful and excellent pollinator for most other plums.

Morris – ripe mid to late June. Purple peel and red flesh. Firm, sweet and juicy. Medium to large fruit that color well ahead of ripening.

Ozark Premiere – ripe late June. Large fruit with a mottled purple peel and amber-flesh fruit. Firm and meaty. Makes a compact tree.

Wickson – ripe early to mid July. Large fruit that are yellowish with a purple blush. Flesh is amber, meaty and has a good sweet flavor.

The above are Japanese or Japanese-hybrid plum varieties. The large-fruited European type plums that commonly reach our supermarkets are not as well adapted here because of greater disease susceptibility and lower production.

Refer to the section on "Peaches" for guidelines on planting, training and pruning, fertilizing and insect and disease control on plum trees. Also refer to the preliminary sections on "Soils", "Planting" and "Caring for Fruit Trees".

### Apricots

Contrary to common belief, apricots are self-fruitful and do not require a pollinator. Unfortunately fruiting is inconsistent on all varieties. The greatest consistency in fruiting is on trees planted near a building although it is not uncommon to have yearly fruiting on certain trees growing in the open. Frost damage sometimes causes the crop loss, but often fruit fail to set when there is no frost damage. All budded varieties as well as seedling trees are subject to this inconsistent cropping.

If problems with nematodes are known or suspected, order trees on "Nemaguard" peach rootstock. On soils with a pH above 7.5, it is generally better to use an apricot root system because apricots are much better adapted to alkaline soils than peaches. Apricots are not readily available on apricot rootstocks. The only practical way to do this is to start from seed.

Obtain seed from an apricot tree known to have good fruit and consistent production. Plant the seed outdoors in October or November. They will germinate the following spring. Grow the trees as seedlings or bud them with a known

variety. This offers no guarantees of better or more consistent production, but it will result in a much greener, healthier trees on sites with highly alkaline soil.

Suggested apricot varieties are:

Blenheim (also sold as Royal) – ripe mid June. Medium size, freestone fruit with orange peel and yellow flesh. One of the most consistent croppers in the Hill Country.

Goldcot – ripe mid June. High quality fruit. Reported to crop well at several Hill Country locations.

Duecker – ripe late May-early June. Good quality fruit. From a tree that always bears at the Alonzo Duecker orchard near Stonewall. Available from Womack's Nursery (see nursery list). A good cropping record on Duecker trees growing in the Hill Country.

Moorpark – medium to large freestone fruit that ripens in June. An old, very common variety with a below average cropping history in the Hill Country.

Refer to the section on "Peaches" for guidelines on planting, pruning and fertilizing apricot trees. For insect and disease control, refer to the leaflets listed in the "Peach" section. The peach spray schedule will work effectively on apricots.

For additional information, refer to the preliminary sections on "Soils," "Planting" and "Caring for Fruit Trees".

### Nectarines

The nectarines is a fuzzless mutation of a peach. Nectarines are not as well adapted here because the smooth-skinned fruit is especially vulnerable to disease – especially brown rot, and fruit splitting is a common problem.

If nematode problems are known or suspected, trees budded onto "Nemaguard" peach rootstock should be purchased.

Suggested nectarine varieties are:

Armking - ripens late May, medium to large, good quality fruit. Clingstone.

Crimson Gold - ripens amid June, medium size, attractive fruit.

Redgold - ripens early to mid July, large size, good quality. Freestone.

Refer to the section on peaches for guidelines on planting, training, pruning

and fertilizing nectarines trees. For insect and disease control, see the peach spray schedule referred to in the "Peach" section.

For additional information, refer to the preliminary sections on "Soils", "Planting" and "Caring for Fruit Trees".

### Cherries

Cherries are, at best, only marginally adapted to the Hill Country. The winter chilling requirement of cherries will not be adequately met in most winters to have a healthy bloom and fruit set. Sweet cherries are more sensitive than sour cherries to both heat and cold; thus sour cherries have the best chance for success here. Sour cherry varieties such as:

"Montmorency" are sometimes fruited successfully. Sour cherry varieties are self-fruitful.

Stark Bro's Nursery (see nursery list) has developed a low chill sweet red cherry called "Starkrimson" production has been fair to good in early tests.

Refer to the preliminary sections for general information on "Soils", "Planting", and "Caring for Fruit Trees." Fertilizer guidelines for peaches can be used, although the amounts should be reduced for dwarf trees.

Trees should be trained to a central leader as described in the section on apple trees.

### Apples

Cotton root rot is a severely limiting factor to growing apples in much of the Hill Country (see preliminary section on "Soils".) This fungus causes sudden death (usually in July-September) of apple trees.

Lack of color on red apples is also a problem because the red pigment is not produced adequately under our hot temperatures. Eating quality of apples grown here is generally very good.

Some apples, notably most varieties of Golden Delicious have a marginally high winter requirement for this area and do not always bloom and fruit properly. Certain other varieties including "Anna", "Ein Shemer" and "Dorsett Golden" have very low winter chill requirements and should not be planted here because they will bloom much too early in the spring.

Numerous rootstocks are used to bud apple trees onto. Those you will often need to choose among are listed below.

Late July - Early August

Stark LuraRed - red, Jonathan-type, bears heavily here, good quality

Stark Gala - orange-red, flavor is like a spicy Golden Delicious. A top quality eating apple.

Stark Royal Gala - like Start Gala except brighter red

\*\*\*\*\*

Early August - Mid August

Mollies Delicious - red excellent dessert quality, not delicious-type although very similar in appearance and flavor. Good pollinator.

Ozark Gold - yellow, delicious-type dessert apple. Good pollinator.

\*\*\*\*\*

Late August - Early September

Starkrimson Red Delicious - red, excellent quality, delicious-type, widely plant in this area.

Starkspur Dixired Delicious - similar to Starkrimson Delicious. Better red color under heat.

Crispin - also known as Mutsu. Yellow-orange, large, high quality for dessert or cooking. Sterile pollen - must have a pollinator and will not serve as a pollinator.

Braeburn - red, highly flavored with an even sugar to acid balance crisp. A heavy cropper that will usually need thinning to maintain yearly cropping.

Early - Mid September

Fuji - red, sweet flavor, good crisp texture. A new variety suggested for trial.

\*\*\*\*\*

Late September - Early October

Granny Smith - green, excellent quality for dessert or cooking

Apple rootstocks

Seedling - good strong trees, full size trees that take 5 to 7 years to begin fruiting.

MM111 - strong semi-dwarf trees, 80% of full size, take 3 to 5 years to begin bearing.

MM106 - produces trees 60-70% of full size, takes 3 to 4 years to begin bearing. Problems with collar rot only on well-drained soils.

M7A - produces a tree 50 to 60% of full size. Tends to sucker, but is tolerant of fireblight, crown rot and poorly drained soils. Can be grown freestanding although some sort of support is helpful.

M9 - produces a tree 25 to 30% of full size, induces fruiting in 2 to 3 year old trees. Has brittle roots that give poor anchorage and requires trellis support or a support post by each tree.

Planting spacings depend upon the rootstock. Very dwarfing rootstocks such M9 can be planted 6 feet apart while trees on full-size seedling rootstocks should not be planted closer than 20 feet apart. Note also that spur varieties will remain more compact than non-spur varieties. A good rule of thumb for practical tree size is to order spur type varieties of apples on the least dwarfing rootstocks and use the extremely dwarfing rootstocks only for non-spur apple varieties.

Varieties

Most apples require cross-pollination so if in doubt, plant at least 2 varieties. Be sure that the 2 or more varieties include different types such as the red delicious type and the Jonathan-type because varieties of the same type do not cross-pollinate well.

Varieties suggested for the Hill Country are:

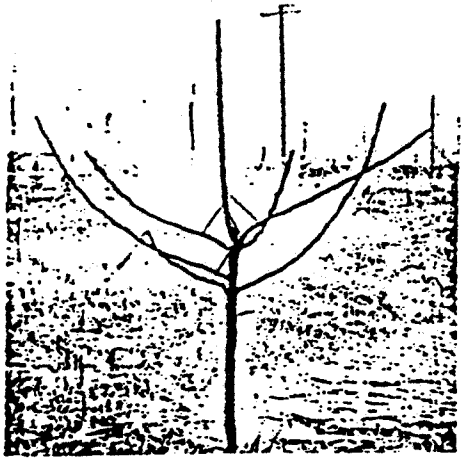
Late June - Early July

Jersery Mac - red, McIntosh-type, crisp, tart. Good pollinator.

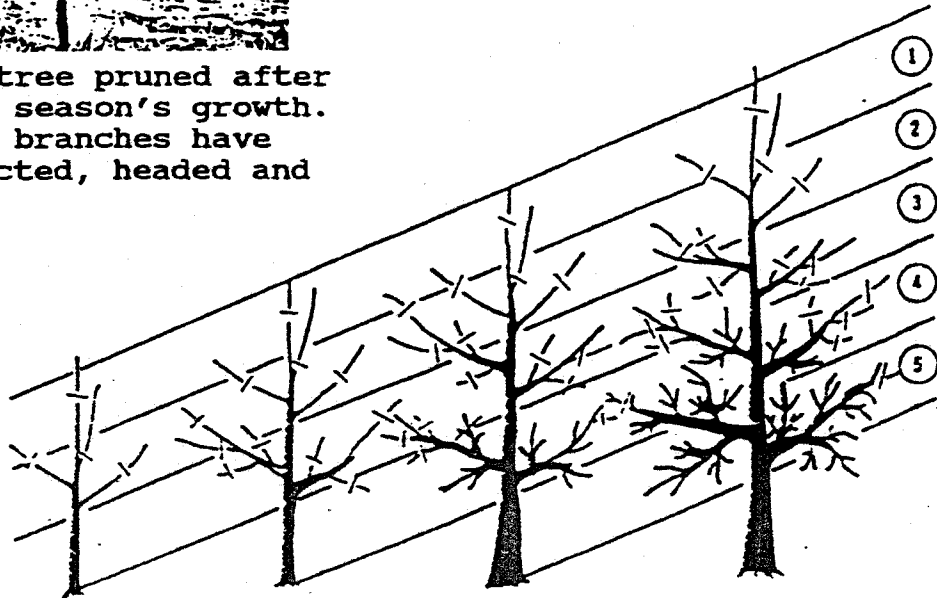
Early-Mid July

Adina- large fruit, sweet with distinctive taste. Proving to be a good producer in the Hill Country.

\*\*\*\*\*



An apple tree pruned after its first season's growth. Framework branches have been selected, headed and spread.



The method used for training apple trees. The trees are divided into sections according to the age (years) of the wood in each section. Cross lines indicate places to make cuts. (1) 1-year old section. Remove all competing shoots. Head back terminal shoot. (2) 2-year-old section. Select and head lateral branches. (3) 3-year-old section. Spread branches, remove forked terminals to a single shoot and head that shoot. Head side shoots. (4) 4-year old section. Spread branches, remove forked terminals to a single shot and head the shoot. Head side shoots. Reduce heading on older sections of limbs. (5) 5-year-old section and older. If tree has filled allotted space, head back where necessary into 2-year-old wood to an unheaded side shoot. Avoid heading cuts into 1-year-old shoots until the tree is fruiting well.

### Training and pruning

Apple trees are trained with a central leader (central truck) with evenly spaced lateral branches. An ideally trained apple tree is Christmas-tree shaped. The figure above shows the basic configuration and pruning cuts used in developing an apple tree.

For additional information, refer to the preliminary sections on "Soils",

"Planting" and "Caring for Fruit Trees". Follow fertilizer guidelines described for "Peaches", but reduce the fertilizer on strongly dwarfed trees.

Insects and diseases can be controlled following the basic peach spray schedule; however, Captan should always be included for disease control. Benomyl is used extensively for peach disease, but certain apple diseases are not controlled by benomyl.

### Pears

Fire blight, a bacterial disease that kills leaves, branches and sometimes whole trees. Is the chief limiting factor to growing pears in the Hill Country. Pears are also readily killed by cotton root rot (see section on "Soils")

Popular varieties such as "Bartlett" should not be grown here because of extreme vulnerability to fire blight.

Fire blight resistant varieties are described below with the most resistant listed first. Plant at least 2 pear varieties to insure good fruit set. The common varieties listed (with the exception of Garber) do not ripen on the tree. Harvest them when they are fully colored and have changed from the hardness of a baseball to the slight "give" of a softball. Leave the fruit in a cool, room temperature place for at least 2 weeks to ripen them.

Warren - medium size, low grit dessert pear. A top selection for the combination of good flavor and fireblight resistance.

Ayres - small, early ripening, red blush, low grit

Maxine - large, low grit, high quality fruit

Orient - very resistant to fireblight. Large fruit, relatively hard, with russeted peel. Fair as a fresh fruit, excellent for canning or other processing.

Moonglow - large, low grit, soft, high quality fruit, self-fruitful

Garber - medium size, early ripening, good quality for fresh use. Sometimes called an apple-pear because of apple-like shape. Ripens on the tree.

Monterrey - medium size. An apparent seedling of Garber with much the same fruit quality, but better fireblight resistance.

Fan-Stil - medium size, early ripening, low grit, high quality. Available from Fanick's Garden Center, San Antonio. A LeConte seedling.



LeConte - large, smooth skin, low grit, high quality

Kieffer - medium to large, gritty and hard. Good for canning or other processing. Mediocre flavor for fresh use.

Asian pears are attracting considerable attention because of their high quality fruit. They are characterized by apple-like flavor. These appear to be reasonable well-adapted in the Hill Country although fire blight damage has been serious enough to be of concern. Asian pears ripen on the tree.

Plant at least 2 varieties of Asian pear to assure good fruit set. Varieties to try include:

Hosui - brown russeted, large fruit, excellent fruit but doesn't store as well as others, ripens mid July.

20<sup>th</sup> Century - clear skinned, yellow, medium to large, very good flavor, ripens early August.

Skinseiki - clear skinned, yellow, medium size, ripens mid-July.

Shinko - brown russeted, large, very good fruit, high fireblight tolerance, ripens late August.

Niitaka - brown russeted, very large, fair to good flavor, ripens mid September.

Ya Li - chinese type, blooms early, large, good fruit, ripens late September.

Training and pruning of pear trees is the same as that described for apples.

For additional information, refer to the preliminary sections of "Soils, "Pruning" and "Caring for Fruit Trees". Fertilize pears sparingly - especially those varieties that are most vulnerable to fire blight. Fire blight attacks the vigorous succulent growth that heavy fertilization encourages.

Other disease and insect problems are usually minimal. A regular spray program is not normally necessary.

### Jujubes

Jujubes are not well known, but will thrive in the Hill Country. The fruit strongly resembles a date in appearance. Eaten fresh they resemble a crabapple and dried, the flavor is much like a date. Common names such as "Chinese date", "date", "Chinese apple" and "Chinese olive" are sometimes used.

The trees are very upright and slender, often reaching 30 feet, with glossy, attractive leaves. They can be grown with a minimum of care.

### Varieties

Seedlings are commonly found planted in the Hill Country. Seedlings usually sucker profusely and stars can be obtained readily by digging suckers. The varieties listed below can be found at various landscape nurseries.

Lang - ripens in the fall. Fruit are 1 ½ - 2 inches long, reddish, reddish-brown, shiny, pear-shaped. Fruit are commonly preserved or candied.

Li - fall ripening about 2 weeks later than Lang. Date-shaped, slightly larger fruit than Lang and the best variety for fresh eating.

Refer to the preliminary sections for information on 'Soils', 'Planting' and 'Caring for Fruit Trees'. Train jujubes to a central leader as shown for apple trees. Very little pruning is needed.

Use moderate amounts of fertilizer in February and in June. Jujubes are rarely damaged by insects or disease.

### Persimmons

Japanese persimmons are easy to grow, relatively pest free and attractive additions to the landscape as well as the garden.

Astringent varieties will pucker the consumer's mouth unless fruit are allowed to ripen almost to the softness of a water-balloon. Fully ripe fruit are most easily handled by simply freezing them whole and then eating them when partially thawed. Non astringent varieties may be eaten firm ripe without puckering the mouth.

Several good varieties of Japanese persimmons are available. They range from red to orange and from flat to conical.

### Astringent Varieties

- will cause puckering if eaten before they are soft ripe.

Hachiva - large cone-shaped with a reddish-orange peel. The best quality persimmon for home or commercial use. Very sweet, seedless and heavy bearing.

Tanenashi - large cone-shaped with a reddish-orange peel. Very sweet and seedless and heavy bearing but not as heavy bearing as Hachiya.

Tamopan – large, yellow with a constricted band around the middle of the fruit. Good quality, seedless, a heavy bearer.

Eureka – medium sized, flat-shaped, red fruit with good quality. A relatively compact tree. The fruit usually have several seeds. Popular as an ornamental tree.

#### Non-Astringent

-non puckering, even if eaten firm ripe

Fuyu (Fuyugaki) – good quality fruit that are flat-shaped and orangish-red. A heavy producer, but the tree is more vulnerable to winter freeze injury than most varieties.

Jiro – flat shape, orangish-red, medium size. Now the leading non-astringent variety in the U.S. Sometimes called Fuyu.

Suruga – large, red, good quality fruit with a semi-flat shape.

Izu - medium-size, flat-shaped fruit. A compact tree.

Severe moisture fluctuations can cause problems with premature fruit drop – especially with non-astringent varieties.

Refer to the sections on "Soil", "Planting" and "Caring for Fruit Trees" for general information.

Train persimmon trees to a central leader as described for apple trees. Very little pruning is needed.

Persimmons are rarely damaged by insects or disease.

Use moderate amounts of balanced fertilizer in March and in June.

#### Figs

Figs are well-adapted in the Hill Country. Freeze damage often kills trees partially back, but fruit are borne on new growth so freeze damage is not usually a serious limitation to production.

Only closed-eye varieties of fig should be grown to prevent the entry of insects and premature spoilage of the fruit. Recommended varieties are:

Texas Everbearing - medium-large, good quality. The tree is very vigorous and produces over a long period.

Celeste - small, dark, high quality, moderately vigorous and very productive. A good fresh eating fig and excellent for preserving.

Alma - high quality, extremely productive, moderately vigorous, bears at an early age. More susceptible to freeze damage.

Figs may be trained as trees or as bushes. Pruning is done basically to shape the plant, to thin crowded branches and to remove freeze damaged wood.

Refer to the sections on "Soils, "Planting" and "Caring for Fruit Trees" for general information.

Figs are usually not damaged by insects or diseases.

Use moderate amounts of balanced fertilizer in February and June.

### Olives

Olives will rarely bear fruit in the Hill Country. The trees are marginally cold hardy and may be seriously injured in severe winters. Fruit buds are killed at about 25° F. so at best only a tree without fruit can be grown. Varieties including Manzanillo and Ascolano are available for those who want to try them.

### Pomegranates

Pomegranates are attractive as bushy shrubs or as small trees. They are reasonably well adapted in the Hill Country. There is a wide fruit variation among those grown ornamentally.

Wonderful is the most common variety that is available from nurseries. Wonderful has large, deep purple-red, glossy fruit. The kernels and juice are crimson with good flavor; seeds are small and tender and the rind is of medium thickness. It is eaten fresh or processed.

### NURSERY SOURCES

Local nurseries carry many of the varieties listed on these pages. Always check local sources first. The following nurseries ship plants and are listed to provide sources of suggested varieties that can not be found locally. All of the listed nurseries have catalogs that they will send you free of charge.

Womack's Nursery  
Route 1, Box 80  
DeLeon, Texas 76444  
1-817-893-6497

(General, Fruits & Nuts)  
Love Creek Orchards  
P.O. Box 1401

Medina, Texas 78055  
1-830-589-2588  
(Apples)

Cockrell's Riverside Nursery  
Route 2  
Goldthwaite, Texas 76844  
1-915-938-5575  
(General, mostly pecans)

Texas Pecan Nursery  
P.O. Box 306  
Chandler, Texas 75758  
1-902-849-6203  
(General, mostly pecans)

Fanicks Garden Center  
1025 Homgreen Road  
San Antonio, Texas 78220  
1-210-648-1303  
(General)

Stark Bros.'s Nursery  
Louisiana, Missouri 63353  
1-800-325-0611  
(General, patentd varieties)

Sierra Gold Nurseries  
5320 Garden Highway  
Yuba City, CA 95991-9499  
Yuba City, CA 95991-9499  
1-800-245-GOLD

Home Orchard Nursery  
HCR 3, Box 487  
Bandera, Texas 78003  
1-830-796-3497  
(Apples, Pears & Others)

Treeseach Farms  
7625 Alabonson Road  
Houston, Texas 77088  
1-713-937-9811  
(General)

Bob Wells Nursery  
P.O. Box 606  
Lindale, Texas 75771  
1-903-882-3550  
(General)

HollyDale Nursery  
P.O. Box 26  
Pelham, Tennessee 37366  
1-800-222-3026  
(General, mostly peaches)

Southmeadow Fruit Gardens  
Lakeside, Michigan 49116  
1-616-469-2865  
(General, many rare apple varieties  
and apple rootstock)

Johnson Orchard & Nursery  
Route 5  
Eillijay, Georgia 30540  
1-706-276-3187  
(General)

TyTy South Nursery  
Corridor Z  
TyTy, Georgia 31795  
1-916-645-8191  
(General)

Fowler Nurseries, Inc.  
525 Fowler Road  
Newcastle, CA 95658  
1-916-645-8191 (General)

McKemie Homegrown  
Route 2, Box 348  
Dales, Texas 78616  
1-800-864-2122  
(Apples,pears,figs,berries)

Joseph Klein Nursery, Co.  
15215 Webfoot Road  
Dayton, OR 97114  
1-503-868-7556  
(Asian Pears)

Haley's Nursery  
Smithville, Tennessee 37166  
1-800-251-1878  
(General, Mostly Peaches)

Cumberland Valley Nursery  
McMinnville, Tennessee 37100  
1-800-492-0022  
(General, Mostly Peaches)

Tieman Fruit, Inc.  
1073 Pleasant Knoll Road  
Morrison, Tennessee 37357  
1-615-635-2509  
(General, Mostly Peaches)