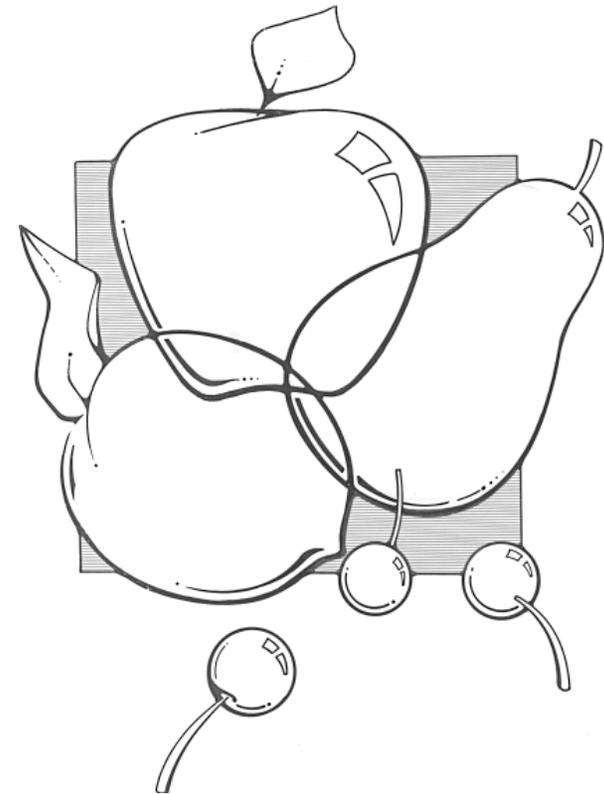


# Fruit Trees for the Home Orchard: Varieties and Management



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# **Fruit Trees for the Home Orchard: Varieties and Management**

**Esteban Herrera and James Sals  
NMSU Extension Horticulturists**

Choosing a fruit tree for a home garden is not easy because not only are there different species to choose from, there are also many varieties within a species. Each variety has its own particular flavor and each species is grown differently, especially when it comes to pruning, watering, and harvesting.

Availability, freshness, therapeutic value, ornamental value, and pride of ownership are some of the advantages of having a home orchard. Some of the disadvantages include: required time for maintenance, cost of necessary supplies and equipment, high insect population, conflict with other plants, and cost production ratio.

Other things a home gardener needs to consider when selecting a fruit tree include the size of tree desired (standard, dwarf, or semidwarf), whether it is self-fruitful, and whether it is cold hardy.

It is difficult to raise good quality fruit without some insect and disease control. Some fruit trees require constant attention and others may have only seasonal problems.

The advantages apparently outweigh the disadvantages because more people are planting fruit trees in their yards every year. Some information about fruit species and fruit varieties is given here to help homeowners make a decision about the fruit trees they can plant in their yards.

## CLIMATE

Fruit production in New Mexico is usually determined by late freezes in the winter. Date of occurrence and severity are the main factors involved. For the most part, 10% freeze injury occurs when the average temperature around bloom time is about 26°F to 28°F. About 90% kill will occur when temperatures drop between 23°F to 25°F. All fruit tree varieties are hardier when buds are in earlier-than-bloom developmental stages. They are more cold susceptible after petals fall.

The earlier a fruit tree blooms, the higher the chances of having its flowers killed by low winter temperatures. Some varieties are listed as winterhardy, but this relates mainly to the tree itself (its ability to withstand low temperatures with no injury, rather than to the blossoms).

Almond, Japanese plum, apricot, and sweet cherry trees tend to flower early in the spring, followed by European plums, sour cherries, peaches, and nectarines.

Apple and pear trees tend to bloom later, increasing the chances of producing fruit every year.

## LOCATION

Geographic locations can influence the growth and development of fruit trees. The growing seasons at altitudes above 7,500 feet are generally too short for many tree fruits and late spring freezing often kills blossoms.

Air movement and air drainage are important to fruit production. Cold air is heavier than warm air, so cold air drains from high areas to low areas, much the same as the movement of water. When barriers, such as trees, walls or buildings are present, they can dam up cold air and restrict air movement. In general, low valley areas can be 3–5 degrees cooler than higher areas. Chances for the blossoms to be killed increase sharply in lower areas, especially when some type of barrier prevents the flow of cold air.

Even within a city or a given yard, the placement of a tree can determine if its blossoms will survive late spring freezes. Trees surrounded by high walls may do better than trees out in the open. Trees close to house walls benefit from the radiated heat given off by the house. Trees on the north side do not receive as much direct sunlight as those on the south side, making temperatures lower so they tend to bloom later than trees on the south side, producing more often because freeze danger is sharply reduced as the season progresses.

## FRUIT TREE SPECIES AND VARIETIES

### Apples

**Varieties.** In general, all apple varieties do well in New Mexico. The choices the homeowner has to make are what is expected in personal taste and flavor (tart or sweet), the intended use of the apples (eating or cooking), and according to season of maturity (harvesting). See table 1.

It is important to know the pollination requirement of fruit trees. Pollination is the transfer of pollen grains from the anther to the stigma of the flower. If the transfer is from the anther to the stigma of the same flower, or to the stigma of another flower of the same variety, it is known as self-pollination. If the pollen transfer occurs from an anther of one variety to the stigma of a different variety, it is known as cross-pollination. In some fruit trees, such as apple trees, the stigma and the anther are found in the same flower. However, many important varieties such as 'Mcintosh' and 'Delicious' will not form seeds or set fruit when their blossoms are self-pollinated. Such varieties are known as self-unfruitful and must be cross pollinated to bear fruit. Other fruit trees, such as peaches, are self-fruitful because a tree or variety has flowers with stigmas that will be pollinated by pollen from the same tree or variety. See table 1.

**Table 1. Apple varieties according to season of maturity, fruit use, and pollination characteristics.**

Maturity Season and Variety	Description	Remarks
Early		
Early Harvest	Medium-sized fruit. Yellow skin. Bruises easily. Excellent for eating and cooking.	Self-fruitful to partially self-fruitful. Satisfactory pollinator.
Yellow Transparent	Introduced from Russia 100 years ago. Still fairly popular. Skin greenish-yellow, flesh white. Eating quality good. Cooking quality excellent. Bruises easily, does not store.	Is partially self-fruitful to self-fruitful. Excellent pollinator.
Duchess	Red striped, medium fruit. Flavor is tart. Good for sauce and pies.	
Lodi	Cross between Montgomery and Yellow Transparent, medium to large fruit, 3 inches in diameter. Eating quality fair/good. Cooking quality good.	Needs cross pollination.
Mid-season		
Jonathan	Medium bright red apple. Good general purpose fruit. Tart acid flavor.	Excellent pollinator. Partially self-fruitful.

it can be started in late February; in northern New Mexico it can start in late March. Generally it should be performed whenever high temperatures take place (above 55°C). A rigid PVC pipe can be attached to the fruit tree trunk and a mist spray can be set up just above the tree canopy. A timer may be needed to start spraying water 1 out of 5 minutes. Although not as much water is used with mist spray, compared with overhead sprinklers, good soil drainage is a must.

A thermostat will be needed to start the spraying whenever temperatures are above 55°F. The system can be set up to run for a certain time during the day, regardless of air temperature.

Damage from late winter freezes on early bloomers (almonds, cherries, plums, apricots and peaches) is usually minimized when trees are planted close to house walls. Heat radiating from homes will alleviate low-temperature effects. Also, north-side planted trees will bloom later in the season because sun rays will not hit them most of the day. Cooler temperatures will make them grow more slowly, causing later blooming than south-side planted trees. Home grown trees can be irrigated the night before a freeze may occur, decreasing freeze damage possibilities.

effect date of maturity and ripeness.

The best ways to determine maturity in apples are:

1. Ease of separating the fruit stem from the spur or shoot.
2. The predominant undercolor (green) of the fruit will be changing to light or yellowish green as the fruit matures.
3. Check the seed color; dark seeds in apples indicate maturity.
4. Measuring days from bloom and comparing to known standards (table 3).

### FROST PROTECTION

All fruit trees need a certain number of chilling hours. (Roughly 1 chilling hour is equal to 1 hour below 45°F.) These chilling hours are cumulative and they start to be counted in late fall. As soon as the required chilling hours (CHH) are completed, then growing degree hours (GDH) begin to accumulate (roughly one GDH in a given hour is equal to 1 degree above 55°F). Different fruit species need different amounts of GDH for the fruit tree to bloom.

Commercial growers usually protect their crop from late freezes by using heaters (gas or diesel) to keep orchard temperature above 32°F, preventing cold injury to flowers. Ice encasement, using overhead sprinklers, has also been used; however, this may be expensive for homeowners.

A new technique to prevent cold injury to flowers, called delay bloom, is being used by some commercial fruit growers and can be adapted by homeowners. It decreases the air temperature with overhead sprinklers (water takes heat from the air as it evaporates) to decrease the growing degree hours in a given day. If this is done for a certain number of days (10–20 days), it takes the fruit tree longer to reach full bloom stage, reducing the chances for cold injury.

This technique should be started when trees have already broken dormancy. In a home orchard in southern New Mexico,

**Table 1. Continued**

Maturity Season and Variety	Description	Remarks
Mid-Season to Late Macintosh	High quality. Many people from East are well acquainted with its eating and cooking qualities. Yellow skin with bright red blush.	Self-fruitful. Excellent pollinator.
Rhode Island Greening	Old orchards still have this apple. Good cooking and processing apple. Fruit is green to yellow.	Poor pollinator. Self-unfruitful.
Delicious	Medium, long tapering fruit. Skin striped to solid red. Good eating apple. Most important New Mexico variety: good dessert quality.	Self-unfruitful. Excellent pollinator.
Late Golden Delicious	Dual eating and cooking. Skin yellowish green; may have slight red blush.	Excellent pollinator. Partially self-fruitful.
Rome Beauty	Excellent baking apple. Medium dark red color. Flesh firm and crisp; good for storage.	Partially self-fruitful. Excellent pollinator.
Stayman	Good cooking and eating apple. Fruit is juicy, tart, and wine-like flavor. Skin bright red. Fruit has tendency to crack.	Self-unfruitful. Poor pollinator.

**Table 1. Continued.**

Maturity season and variety	Description	Remarks
Winesap	Small dark red. Good for cooking and for juice.	Self-unfruitful. Poor pollinator.
York Imperial	Excellent for cooking and eating. Apple oblique shaped. Orange to red color. Excellent keeper.	Partially self-fruitful. Excellent pollinator.
Arkansas Black	Large vigorous tree. Texture hard and crisp. Fruit yellow covered with red.	Self-unfruitful; only satisfactory as a pollinator.
Grimes Golden	Apple planted in many old New Mexico home gardens. Probably a parent of the Golden Delicious. Good for eating fresh, freezing, but a poor baking apple.	Usually self-fruitful.
Granny Smith	Apple from Australia and New Zealand. Rapidly becoming an accepted variety in the United States. Flesh is similar to Golden Delicious. Tart flavor. Good for eating fresh in desserts and salads and good for cooking. Ripens quite late, not recommended for higher, cooler areas of New Mexico.	Self-pollinating to some extent. Golden Delicious is a good pollinator.

storage, reaching its maximum quality. Apples can finish ripening on the tree, but to attain their highest quality, pears must be harvested before they are ripe. However, if picked too immature, they are undersized and often shrivel in storage. On the other hand, if picked too late, the fruit ripens quickly, lacks juiciness and has short storage potential. Harvest pears when full in size. Ground color should still be overall green, but showing faint tinge of yellowish green. Further ripening on the tree impairs quality.

**Table 3. Approximate days from full bloom to ripeness of the main apple and pear varieties grown in New Mexico.**

Variety	Days
Apples	
Jonathan	135–145
Golden Delicious	150–160
Red Delicious	145–155
Romes	165–175
Winesaps	160–175
Pears	
Bartlett	110–115
Bosc	145–150

The best time to harvest cherries, plums, apricots, peaches, and nectarines is when fruit is completely ripe and their color and taste are at their best. These fruits contain little or no starch reserves and the highest sugar level is accumulated while the fruit is on the tree. Fruit harvested before optimum maturity or ripeness can change color, but will not achieve the highest level of quality and flavor. If harvested after maturity, it will get soft.

## BEARING AGE

Fruit trees normally begin to bear fruit soon after they are old enough to flower. Most fruit trees are propagated by grafting or budding the desired variety on a rootstock. When you purchase nursery-grown trees, their tops will be 1 to 2 years old while the roots may be 1 or 2 years older. The age (from planting) when trees can be expected to bear fruit depends on the type of fruit: apricot and sour cherry (3 to 5 years), peach (2 to 4), plum (4 to 6), apple, pear, quince, and sweet cherry (5 to 7). Dwarf fruit trees may begin to bear about 2 years earlier than standard size trees. Seedling trees (not grafted) will take longer.

Certain fruit trees, such as apples, sometimes bear heavily one year and sparsely the next. This is called biennial bearing. The spring-flowering buds of most hardy fruit trees are formed during the previous spring or summer. Therefore, an especially heavy crop one year can prevent adequate bud formation for the following year, or may seriously weaken the tree.

Biennial bearing of apples is difficult to alter or correct. However, a return to normal yearly fruit production can be induced by chemical or hand thinning of excess fruit when fruit-set is extra heavy. Thinning should be done early, no later than when the fruit is the size of a dime (before flower bud formation for next season is initiated). Later in the season, if there are too many apples on the tree, thin fruits to 3 to 5 inches apart. Fruit quality will be enhanced by this practice. Commercial apple growers use Ethrel and Sevin to chemically thin the crop a bit before hand thinning.

## HARVESTING

Carbohydrate reserves, mainly starch, in apples and pears reach maximum levels while the fruit is on the tree. When fruit is harvested, the starch is converted to sugar in transit or

Time of bloom is also important in New Mexico and some varieties are classified as follows: *Early Blooming*: 'McIntosh', 'Arkansas', 'Ben Davis', and 'Yellow Transparent'; *Midseason Blooming*: 'Red Delicious', 'Jonathan', 'Winesap', 'Golden Delicious', 'Stayman', 'Baldwin', 'Grimes Golden', and 'York Imperial'; *Late Blooming*: 'Rome Beauty' and 'Northern Spy', 'Golden Delicious' and 'Granny Smith'.

**Size of Tree.** Apples come in a variety of sizes; standard (18–25 feet); semi-dwarf (12–15 feet); dwarf (8–10 feet) and miniature (6–8 feet).

Home gardeners are using smaller trees where space is limited. There are other advantages too; small trees are easier to prune, spray, and harvest fruit. The use of ladders, at least tall ladders, can be eliminated.

Semi-dwarf trees are easier to manage than dwarf trees that may need special staking, trellising and pruning.

The size of the plant is often determined by a grafted rootstock. See table 2.

**TABLE 2**

**Dwarfing apple root stocks recommended for home orchards.**

Rootstock	Percentage of Standard Size <sup>1</sup>
EM VII A	60
MM 106	70
EM II	70
MM III	70
MM 104	90

<sup>1</sup>Size of a standard tree is about 30 feet.

Spur-type trees, interstem grafts and pruning can also control tree size. Annual pruning has a dwarfing effect on trees. Spur-type trees are usually 25% smaller in height and width and more open than are the standard trees. A spur-type variety on seedling rootstock makes a tree approximately

two-thirds the size of a non-spur variety on seedling rootstock. Natural differences between varieties should also be taken into account. Limbs of spur-type trees have more fruiting spurs per foot of bearing wood; therefore, this wood can be grafted onto dwarfing rootstock or interstem grafts to effect still more dwarfing.

**Climate.** Climate is an important factor in determining when or how long the bearing apple tree will bloom. Temperature, light intensity, and the accumulation of so-called chilling hours (when wood temperature is below 45°F) are the important considerations. Trees may not have a uniform bud break if the cold requirements are not met. In general, cold (chilling) requirements for apple trees are fulfilled adequately in New Mexico.

Hot temperatures in southern New Mexico may cause some apples to drop just before harvest because fruit ripens at a faster rate than in northern New Mexico areas. It is claimed that red color is negatively affected by hotter temperatures. Use of plant regulators (for example, STOP DROP for preventing fruit drop and ETHREL for increasing fruit red color) may help to circumvent these problems.

**Pollination.** The most common apple pollination problem is found where 'Golden Delicious' is used as a pollinator for 'Red Delicious' in warmer areas of New Mexico. 'Red Delicious' varieties have a chilling requirement of approximately 150 hours less than the Golden. Following a mild winter, the 'Red Delicious' often bloom early while the Golden may bloom as much as 2 weeks later. For this reason, the 'Golden Delicious' is not considered a good pollinator for 'Red Delicious' where winter temperatures are marginally warm. 'Stark Red Gravenstein' and the 'Rome Beauty' varieties also have a longer chilling requirement and often bloom late in the warmer areas of New Mexico. For this reason they should not be considered in these warm regions as pollinators for

to dry soil. Irrigate and wait until the next regular irrigation before applying more fertilizer. As the tree grows older, apply more fertilizer. Nitrogen is usually the main element needed. A general rule is to apply 1/8 to 1/4 lb of actual N (about 3/4 to 1-3/4 lb of ammonium sulfate) annually for each year of age or inch of trunk diameter, up to a total of 5 lbs of N per tree. Apply no fertilizer after June 30.

**Fruit trees in lawns.** Trees planted in established lawns require special attention. Trees do not compete well with grass for water and mineral nutrients. Also, lawns are usually irrigated frequently, but lightly, so that water does not reach the area where the bulk of the tree's root system lies. Keep grass removed from an area out to the tree drip line. If grass is not removed, extra water and fertilizer will be needed. After the tree is older, it competes much better. Nevertheless, continue watering trees deep every time so water reaches the whole root system.

**Winter sun scald.** Paint the trunk of young trees with exterior, white latex paint (not oil base) to reflect the winter sun. Maintain temporary branches on the lower part of the trunk to shade the southwest side. The use of tree guards or tree protectors is becoming popular, to protect trunks of young trees from sunscald. If plastic tree guards are used, they should be white, otherwise they will get hot during summer and will negatively affect fruit trees.

Trees will grow more vigorously and bear better if they have enough space to develop root systems. Do not plant fruit trees where roots of shade trees will compete. Cultivate or mulch to reduce competition from weeds or grass.

Prune young trees to train them to systems suitable for the species. Strong branches are needed to support the weight of a heavy crop. Severe pruning can stimulate excessive upright growth, which delays flower production and reduces yields.

**Add no manure or fertilizer in the planting hole.** The development of new roots depends primarily on moisture. Roots can be injured if they come in contact with high fertilizer concentrations, resulting in leaf burning around the edges (salt burn).

**Plant the tree no deeper than it grew in the nursery.** The depth at which the tree grew in the nursery can be seen by a change in the bark color right at the place where the soil line was located on the tree. Planting the tree deeper or higher up than the tree grew in the nursery will kill the tree, especially when some roots are exposed out of the planting hole. A tree can be planted an inch or two deeper than it grew in the nursery because the soil will settle somewhat after planting.

**Water.** If the tree is planted in late winter or early spring, water often enough to keep the soil moist. After growth starts, more frequent irrigations will be needed, usually every 7 to 14 days, depending on soil type, during the first growing season. The second season, after the tree has become established, irrigations may be less frequent. However, more water is needed as the tree grows. Enlarge the basin and water thoroughly. During the summer, a mature tree needs about 20 gallons of water a day. A regular 1/2-inch water faucet delivers around 16 gallons of water a minute when open to full water flow. The actual amount may vary according to water pressure at watering time. If the water hose is open one-fourth its full capacity, you will need to water the tree for about 40 minutes every 8 days, delivering 160 gallons or the required 20 gallons per day. If the soil is light (sandy), the watering interval should be shortened.

**Fertilizers.** No fertilizer is needed the first season. In sandy soil, a small amount may be beneficial, if the tree is actively growing. It should be applied once or twice during the season and followed with plenty of water. Never apply fertilizer

'Red Delicious' cultivars. This late blooming characteristic does, however, make these varieties desirable in sites prone to late spring frosts.

It is important to select varieties as pollinators that can be counted on to have a bloom period that coincides with that of the main variety. 'Starkspur EarliBlaze', 'Winter Banana', and 'Stark LuraRed' are excellent pollinators for the 'Red Delicious' varieties. 'Jonathan' would be a good choice, too.

If a homeowner wants to get some shade from fruit trees, trees budded on standard rootstock should be planted. If there is more interest in fruit than shade, varieties with semi-dwarf rootstocks should be planted.

## **Peaches**

**Varieties.** Peach trees are short lived in all areas of New Mexico with an average life of 10 years. Most peach varieties are self fruitful. However, if you plant 'J.H. Hale', you also need another variety to assure adequate pollination.

Peaches flower about 2 weeks before apples. Full crop should be expected 2 out of 4 or 5 years. Three late bloom varieties are 'Redhaven', 'Dixie Red' and 'Raritan Rose' (white fleshed). Other popular varieties include 'Glohaven', 'Golden Monarch', 'Candor', 'Belle of Georgia', 'Redskin' and 'Cresthaven', which also are non-flesh-browning varieties. Regular 'Elberta' is an excellent pollinator and is probably the major commercial variety in the United States. Unfortunately, it is susceptible to frost injury.

Some of the most common varieties grouped according to time of harvest are: *Early Ripening*: 'Candor', 'Red Haven', 'Raritan Rose', and 'Springcrest'. *Midseason Ripening*: 'Glo Haven', 'Fair Haven', 'Rosa', 'Herb Hale', and 'Loring'. *Late Season Ripening*: 'Elberta', 'Earlihale', 'Redglobe', 'Belle of Georgia', 'Red Skin', 'J.H. Hale', and 'Rio Oso Gem'. 'Bonanza' is a genetic dwarf peach that is self-fruitful and is also a freestone variety.

**Rootstocks:** *Siberian C*, a cold-resistant peach rootstock, is claimed to have the ability of transmitting its cold hardiness to scion varieties. *Nemaguard* peach rootstock is very popular and resistant to nematodes which may cause peach decline to occur at a faster rate. *Lovell* and *Halford* are also common. They have a high degree of disease resistance but are susceptible to nematodes.

#### Nectarines

Nectarine is simply a fuzzless peach. Nectarines are generally smaller, they are most prone to insect and disease damage than peaches, otherwise cultural requirements are the same.

**Varieties.** The 'Nectared' group are semi-cling varieties that ripen 1 week apart from one another. 'Nectared' varieties start ripening in early July. 'Stark Earliblaze', 'Stark Red Gold', 'Stark Crimson Gold' and 'Stark Sun Glo' are supposed to be winter hardy. 'Redgold', 'Flavortop' and 'Fantasia' are three freestone, late maturing varieties that are also common. Nectarines do not need pollinators. Flowers are more susceptible to frost injury than peaches and the fruit is frequently scarred from injury by insects. 'Tiger', an Oregon-originated nectarine, is hardy and ripens in early August. Trees are vigorous and high yielding.

#### Pears

**Varieties.** 'Bartlett' is the world's best known pear and is used extensively in New Mexico. Red skin varieties like 'Max Red Bartlett' and 'Red D'Anjou' are also becoming popular. It is a favorite for eating and canning. All varieties should be considered self-unfruitful, although 'Kieffer', 'Starkrimson' and 'Duchess' set good crops without pollinators. Good pollinators are 'Anjou', 'Starking Delicious', 'Beurre Bosc',

'Lambert' or 'Napoleon'. 'Stella' is also a good pollinator. If your neighbor has a sweet cherry tree within 40 yards of your own tree, it is not necessary to plant a pollinator tree.

**Sour Cherry Varieties.** Most sour cherries bear heavily without a pollinator. 'Montmorency' is by far the most popular variety. Other varieties include 'Suda Hardy' and 'North Star', a genetic dwarf. 'Duke', a hybrid between sweet and sour cherries, is also becoming popular but needs a pollinator.

**Rootstocks.** *Mazzard* rootstock produces a larger tree and develops a shallower and more spreading root system.

*Mahaleb* produces a 2/3 to 3/4-size tree and develops a deeper root system, so it is less tolerant to soils with poor drainage. Colt, a new rootstock for cherries, seems to produce the smallest tree.

## ESTABLISHING FRUIT TREES

Getting the tree off to a good start is essential to growing a healthy, long-lived tree. A stunted tree seldom develops into a desirable one. Weak growth and poor foliage results in sun burning of trunk and branches, making the tree more susceptible to attacks by insects and diseases. Success in establishing the tree is improved by good cultural practices.

**Preplant.** Keep the tree in a cool place and the roots moist until planted. Bare root trees may be soaked in a bucket of water for a few hours or overnight, but no longer.

**Dig a hole large enough to accommodate the roots.** Remove broken roots of bare root trees and shorten all other roots so that they do not touch the sides of the hole. Prune one-third to one-half of the tops of bare root trees. This balances the tree with the roots lost when the trees were dug out in the nursery.

**Rootstock.** Plum and prune varieties are usually available on 'Nemaguard' (peach) and 'Myrobalan' (cherry plum) rootstocks. 'Nemaguard' rootstock should be ordered whenever there is a possibility of nematodes in the soil where trees are to be planted. 'Myrobalan' should be used in heavy soils.

## Almonds

Although they are nut trees, almonds are discussed here because they are very popular in New Mexico home orchards and cultural practices are very similar to peaches and apricots.

**Varieties.** Almond Varieties are self-unfruitful. Pollination is almost entirely by insect activity. Because almonds blossom early, while the weather is likely to be cool for insect activity, it is necessary to plant pollinating varieties closely. 'Non-pareil', 'Mission', 'Peerless' and 'Carmel' are some of the most popular varieties.

**Rootstock.** Almond trees are usually grown on almond roots and on peach roots.

## Cherries

**Sweet Cherry Varieties.** As a general rule of thumb, all varieties are self-unfruitful except 'Stella' and 'Starkrimson' (a dwarf tree). Dark colored varieties are recommended for other dark varieties, and light varieties for light. In some instances, the two can be mixed. Some recommended varieties are 'Napoleon', ('Royal Ann') 'Van', 'Bing', 'Stark Gold', 'Black Tartarian', 'Ralnier', 'Sam' and 'Hedelfingen'. 'Black Tartarian' and 'Bing' are the varieties often used as pollinators. 'Bing' does not pollinate 'Stark

'Moonglow' and 'Starkrimson'. Fire blight disease is probably the biggest problem of pear trees. 'Stark,ing Delicious', 'Kieffer', 'Seckel', 'Tyson', 'Old Home' and 'Moonglow' are fireblight-resistant varieties.

**Rootstock.** Most pear trees are grown on *domestic French* (Bartlett) roots. Although it is susceptible to fireblight and pear decline. This rootstock produces a vigorous top. Roots are strong, well-anchored and they tolerate a wide range of soil moisture and texture. Use of quince is the best way of dwarfing a pear tree. *Pyrus calleryana* is recommended for milder pear growing regions where severe low temperatures do not occur in late fall and early winter. It is exceptionally resistant to pear decline and fireblight. It is also resistant to root lesion nematode, phytophthora, and pear root aphids. It has a strong, well-anchored root system and tolerates a wide range of soil moistures and textures. *Provence series C* quince rootstock is resistant to pear decline, pear root aphid, and root lesion nematode. It is susceptible to fireblight, and the root system is not well anchored. It is slow-growing, produces a smaller than standard tree, and induces earlier and heavier bearing.

## Asian Pears

Sometimes called 'Apple pears' or 'Salad pears', are becoming a favorite among homeowners. Asian pears have their origin in China and Japan. They are sweet tasting and crisp like an apple, yet juicy like a pear. Asian pear trees have lower chilling requirements than regular (European) pears. Therefore, they may bloom early under New Mexico conditions. Asian pears are almost identical to common pears in culture and climatic adaptation.

**Varieties.** 'Twentieth Century' and 'Shinsaki' are self-fruitful. All other varieties can be pollinated by 'Bartlett' or any other Asian pear except 'Ntaka'. 'Shinsaki' is the variety with earliest fruit maturity, followed by 'Yakumo', 'Kosui', 'Kikusui', and 'Twentieth Century'. Late maturing varieties include 'Ntaka', 'Hosui' and 'Shinko'.

## Apricots

**Varieties.** Most common varieties are self-fruitful. However, production increases if a pollinator is used. 'Rival', 'Goidrich', and 'Perfection' need to be crosspollinated to bear fruit. Late flowering varieties such as 'Tilton' should not be used as a pollinator. 'Riland' is an early bloom variety that can be used as a pollinator. 'Sun Glo' is a tree that seems to have a good hardiness of fruit buds. 'Golden Amber' is a new variety with a 30-day bloom period followed by an equally long fruit ripening.

'Goldcot', 'Stark Earli-Orange', 'Tilton', 'Hungarian Rose', and 'Wilson Delicious' are self-fruitful varieties. Buds from 'Goldcot' variety withstand the cold better than other varieties. 'Tilton' is the leading variety for freezing and canning. 'Moorpark' and 'Royal' are also popular varieties.

**Rootstocks.** Most apricot trees are grown on apricot root. Some trees are also grown on Halford or Nemaguard peach root. There is no clear advantage of one given rootstock over the other, except that with peach rootstock compatibility can be a problem with some varieties, such as Goldcot.

## Plums

**Varieties.** Japanese plums and European types should not be depended on to pollinate each other as groups. Japanese plums include 'Burbank Elephant Heart' (especially recommended for semi-arid areas), 'Red Heart', 'Friar', 'Santa Rosa',

'Starking Delicious' (highly disease resistant), 'Ozark Premier', and 'Burbank Red Ace'. 'Red Heart' is the most recommended pollinator for Japanese plums. 'Red Claude Conducta' is a variety considered self-fruitful. 'Show' is a new variety recently introduced as a Japanese-American Hybrid. It is a yellow plum that ripens early and is partially self-fruitful. Good pollinators are 'Red Heart', 'Santa Rosa', and 'Friar'.

European plums are more likely to produce fruit every year because they bloom later than Japanese plums. 'President' and 'Empress' are the most common European-type varieties. Both have blue skin and yellow flesh. They are also late ripening varieties. 'Earliblue' is considered the earliest maturing blue plum. 'Peach', 'Damson' and 'Yakima' are other popular varieties. Fruit trees produce well. However most plum varieties should be cross pollinated to ensure satisfactory commercial production. Japanese and European varieties DO NOT cross pollinate.

## Prunes

A prune is always a plum, but a plum is not always a prune. Prune-type plums are characterized by blue or purple skin, firm, dense, semi-juicy flesh; and are best adapted to making a commercial dried product marketed as a prune. Technically, a prune is a blue plum that has high enough sugar content to allow for natural drying without fermentation of the pit. Prune-type plums have the advantage of a longer blooming period than the other plums, so some of their flowers may escape the low temperatures of late winter. 'Stanley' and 'Italian' are the number one prune varieties. Another prune-type plum is 'Bluefre'. 'Early Italian' (2 weeks earlier than 'Italian') is also becoming a popular prune variety. Often European-type and prune-type plum terms are interchanged or either type of variety listed with the other one.