Fruits and Nuts for New Mexico Orchards

Guide H-310

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INTRODUCTION

Fruit and nut trees are a fun and rewarding addition to backyard landscapes throughout New Mexico. They have beautiful flowers, leaves, and fruit; provide much needed cooling shade; serve as habitat and food for birds and other wildlife; and, most importantly, produce healthful and delicious food. Nevertheless, some fruit/nut species and varieties are not well adapted to New Mexico's climate and soil conditions. Late spring frosts occur frequently in all areas of the state, injuring the flowers and young fruits of early flowering species. In the north and at high altitudes, minimum winter temperatures limit the species that can be successfully planted. Low relative humidity and drying winds may desiccate plants. The life expectancy of many trees may be limited by exposure to high sunlight intensity. New Mexico soils, in general, are alkaline, often resulting in mineral element deficiencies. Both soil and irrigation water may be high in soluble salts.

The following discussion covers some problems likely to be encountered with various species, areas of adaptation, and a number of recommended varieties. Our goal is to equip backyard orchardists in New Mexico with the knowledge they need to get the most enjoyment and productivity out of their fruit and nut trees. In general, for tree fruit/nut species, late-blooming and non-uniform varieties with some late flowers will have a better chance of producing a crop than uniform and early blooming varieties.

Figure 1. **European plum fruits.**

APRICOTS

Apricot trees are adapted to alkaline soils, and usually mineral element deficiencies are not a problem. Trees are relatively long-lived. They have attractive leaves and are useful as small shade trees. Apricots flower after almonds but early enough to be injured frequently by late spring frosts. Young fruits seem to be more susceptible to frost injury than almonds, plums, or peaches. Full crops occur in southern areas about one in five years and less frequently in colder areas. Home gardeners in northern New Mexico can consider apricots as shade trees that produce fruit only occasionally. Planting in a protected area will increase the chances of producing fruit. 'Perfection' is among the earliest to bloom and so is especially vulnerable to late frosts. The flower buds of 'Sunglo', 'Harglow', and 'Harlayne' are more winter-hardy than 'Perfection', 'Puget Gold', and 'Goldcot'. Fruit set for most cultivars benefits from, but does not require, a pollinizer. 'Perfection' needs a pollinizer.

PLUMS

Japanese plums flower about the same time as apricots, but young fruits are a little more cold-tolerant, and production is more reliable in southern areas of the state. It is hard to get a crop of Japanese plums in northern New Mexico. Most varieties need cross pollination (two different varieties need to be planted).

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Figure 2. **A 'China Pearl' peach fruit.**

Figure 3. **Fruits of sour cherry.**

'Methley' is self-fruiting (can pollinate itself) and more frost-tolerant than most varieties. Other tolerant varieties are 'Santa Rosa' and 'Satsuma'. Two hybrids that are reliable are 'Gold' and 'Sepa'. Japanese plums are short-lived and frequently chlorotic (iron deficient) in New Mexico because of high soil pH.

European plums (the blue/purple ones in general; Figure 1) flower later than Japanese types and more frequently escape frost injury. They are recommended for northern New Mexico and high elevations. Recommended varieties are 'Early Blue', 'Castleton', and 'Stanley'. In general, their performance has been poor in southern New Mexico.

Pluots, plumcots, apriplums, and apriums are all hybrids of apricots and plums. Apriums and apriplums taste more like apricots, while pluots and plumcots taste like plums. They all have intense sweetness. The trees are also similar to apricots/plums, and are still vulnerable to late frosts.

PEACHES

Peach trees are short-lived in all areas of New Mexico, with an average life of 10–15 years. Painting the trunks with exterior white latex paint or kaolin clay to reflect the winter sun reduces sunscald and prolongs life (this also applies to other fruit/nut species). Annual pruning (to promote compact trees) protects the main branches from burning. Iron deficiency may be a problem, especially on sandy soils. Peaches flower about two weeks before apples. Full crops should be expected once every three to five years. Based on a variety trial at Alcalde, NM, 'Sureprince', 'Challenger', and 'Saturn' were the earliest to bloom, while 'China Pearl' (Figure 2), 'Encore', 'Intrepid', and 'Risingstar' were the late bloomers among the 20 varieties tested. Overall, 'PF-1', 'Surecrop', 'Blazingstar', 'Intrepid', 'Contender', 'Blushingstar', 'China Pearl', and 'Encore' are recommended for central and northern New Mexico.

CHERRIES

Both sweet and sour cherry trees are short-lived and perform poorly in hot southern areas. They are recommended only for cooler areas (northern New Mexico) or high-elevation areas in the southern part of New Mexico. However, sweet cherries flower early and are vulnerable to late frosts. 'Bing', 'Rainier', and 'Lambert' require cross pollination. 'Whitegold', 'Stella', 'Blackgold', and 'Lapins' are all self-fruiting. 'Blackgold' is a late bloomer.

Sour cherries (Figure 3) bloom later and have a longer blooming period than sweet cherries. Sour cherries are less vulnerable to late frosts and always have a better crop than sweet cherries. 'Montmorency' is the main variety. 'Balaton' and 'Danube' are red-flesh varieties and do well in northern New Mexico.

APPLES

Apples require numerous scheduled sprayings to control worms (codling moth) and other pests. Apples also need another apple cultivar or crabapple as pollinizer. Although apple trees flower later than most fruit species, late spring frost injury occurs frequently in all areas except southern New Mexico. 'Rome' is late-flowering. 'Golden Delicious' flowers and fruits are slightly more frost-tolerant than 'Red Delicious' because it blooms less uniformly and has some late flowers. 'Rome' is not recommended for warmer areas of the state. 'Arkansas Black' (a late-maturing variety), 'Jonathan', and 'Winesap'

Figure 4. **'Gala' apple fruits.**

develop good red color in southern New Mexico. Most commercial varieties are adapted to higher elevations. Semidwarf and dwarf trees begin to produce fruit at a younger age and are easier to manage than standard trees.

Among newer varieties, 'Gala' (Figure 4) is a reliable variety in northern New Mexico and 'Honeycrisp' is a late bloomer. 'Pink Lady' and 'Braeburn' were the first to bloom and the most vulnerable to late frosts among the 20 varieties tested at Alcalde. 'Ginger Gold', 'Gala', 'Honeycrisp', 'Golden Delicious', 'Fuji', and 'Arkansas Black' are recommended for central and northern New Mexico. 'Mutsu' and 'Granny Smith' do better in the southern half of the state.

PEARS

Just like apples, pears also need pollinizers and a spray program to manage wormy fruit. Pears flower after peaches and before apples. They are adapted to all areas, but production is better in southern New Mexico. There has been no formal pear variety trial in New Mexico, but scattered plantings indicated that 'Bartlett' always has some fruit even in years with severe late frosts. Other suggested varieties are 'D'Anjou', 'Bosc', 'Comice', and 'Seckel'. Pear varieties on dwarfing rootstocks are recommended over standard trees. Asian pears also do well in New Mexico. While there has not yet been a formal cultivar trial for Asian pears, the varieties '20th Century' (aka 'Nijisseiki'), 'Hosui', 'Kikusui', 'Kosui', 'Niitaka', 'Shinko', 'Shinseiki', 'Yakumo', and 'Yoinashi' have all been grown successfully in New Mexico backyards.

Figure 5. **Grape fruits.**

GRAPES

There are three main species or types of grapes that will grow in New Mexico (Figure 5). European (California) varieties are not entirely winter-hardy in northern New Mexico and should be planted only in southern areas, unless winter protection is given. American varieties are cold-tolerant, but some, such as 'Concord', become chlorotic in alkaline soil. French hybrids and American hybrids do better in northern New Mexico. Recommended table grape varieties for northern New Mexico are 'Himrod', 'Reliance', 'Venus', and 'Jupiter'. Southern New Mexico has more choices for table grapes and wine grapes; please contact your county Extension agent (http://aces.nmsu.edu/county/) for more information.

PERSIMMONS

Persimmons are not a very popular fruit tree in New Mexico. However, persimmon trees can be an attractive addition to the home orchard; they have large, dark-green leaves throughout the summer, and are particularly striking in late fall when the large fruits hanging on the trees look almost like bright orange Christmas tree ball ornaments. Growing persimmons can be especially enjoyable since diseases and pests of persimmons are not a major concern in New Mexico.

The fruit of some persimmon varieties remain extremely astringent (bitter) and inedible unless properly ripened. Fruit from these astringent varieties look completely ripe on the tree, but after they are harvested they must be stored for several weeks at room temperature until they soften and lose their astringency. Although most people will agree that persimmons' sweet flavor is exquisite, some do not enjoy the jelly- or custard-like texture of fully ripened fruit of astringent varieties. The fruit of other varieties (called "non-astringent varieties") lose their astringency as they ripen on the tree and may be eaten crisp immediately after harvest. Fruit of astringent persimmon varieties are typically used for cooking and baking, while that of non-astringent varieties is most often eaten fresh out of hand.

Oriental or Kaki persimmons, which originated in China, Korea, and Japan, are the most common persimmons in home orchards in southern New Mexico. Unless planted in a particularly well-protected area, the most popular Oriental persimmon tree varieties, such as 'Hachiyea' (astringent), 'Eureka' (astringent), 'Fuyu' (non-astringent), and 'Jiro' (non-astringent) are limited to the warmest areas of New Mexico, and even there these varieties will be injured by mid-winter freezes or spring frosts in some years. For those wishing to plant in cooler parts of New Mexico, some Oriental persimmon varieties that have been noted for having exceptional cold hardiness are 'Great Wall', 'Sheng', and 'Saijo' (all astringent varieties). Varieties of the American persimmon species (whose native range includes the southeastern and mid-Atlantic states), such as 'Meader' and American x Oriental hybrids such as 'Rosseyanka', can be much more cold-hardy than Oriental persimmons and are the best choice for areas of New Mexico with colder winters and shorter summers.

Oriental persimmon varieties are usually able to produce fruit without cross-pollination. In fact, cross-pollination is considered undesirable by some orchardists because it results in seeded fruit, which, depending on the variety, may develop darkened chocolate-colored flesh. Certain American persimmon varieties are self-fruiting and require no cross-pollination, while others require planting of a second variety for pollination in order to set fruit.

FIGS

Fig trees are a beautiful addition to southern and central New Mexico backyard orchards. Their large leaves give yards a lush tropical appearance, and the sweet fruit are wonderful for fresh eating, drying, fruit leathers, baking, jams, and canning. Fig trees can produce two fruit crops per year: the "breba" crop in the spring and "main" crop in summer.

There are few pest or disease issues for figs in New Mexico. The primary limitation for figs is low winter or spring temperatures that may sometimes partially or completely kill fig tree canopies, even in southern New Mexico. If the roots were not killed during winter, fig trees that have experienced freezing temperatures usually grow back vigorously and can even produce some main crop fruit in the first year of regrowth. Figs are grown on their own roots (not grafted onto a rootstock), so the variety remains true even after the tree grows back from the root. In central New Mexico, outdoor trees should be planted in a protected area and mulched or tarped to minimize freeze damage. For backyard growers in colder areas of the state, fig trees can be grown in large portable containers and moved indoors during winter. 'Celeste', 'Brown Turkey', 'Hardy Chicago', 'Desert King', 'Kadota', and 'Violette de Bordeaux' are only a few of the fig varieties that can be grown in New Mexico. 'Black Mission' is a readily available fig variety in the nursery trade, but is not very cold-hardy and, therefore, may not be the best variety choice for outdoor planting in most New Mexico backyards. In general, backyard fig varieties require no cross-pollination to produce fruit, but there are some varieties, such as 'Calimyrna', that require the presence of a nearby pollinizer tree (called a "caprifig," which produces no edible fruit) and specialized fig wasp pollinators to set fruit.

PECANS

Pecan trees were first introduced to New Mexico in the late 1800s. Pecan trees are susceptible to aphid infestations and certain nutrient deficiencies in New Mexico, yet they remain an extremely popular backyard tree in low-elevation areas in the southern half of the state. At maturity, pecan trees are one of the largest tree species planted in New Mexico orchards, sometimes reaching 80–100 feet in height. Pecan nuts (Figure 6) are best known as the central ingredient of pecan pies, but they can also be used as a healthful ingredient in breads, salads, cereals, and many other recipes. See NMSU Extension Guide E-138, Pecans: A Healthful New Mexico-Grown Food (http://aces.nmsu.edu/pubs/_e/E138.pdf), for more information on the health benefits of eating pecans.

'Western' (or 'Western Schley'), 'Wichita', and 'Bradley' are the most common commercial pecan varieties and are also quite common for backyard orchards. Of

Figure 6. **Shelled, whole pecan nuts.**

Figure 7. **Ripening pistachio fruits.**

these, 'Western' is the best adapted to New Mexico's soils and climate. 'Burkett' pecan trees produce a round nut with speckled kernels and are favored by backyard orchardists for their excellent flavor. However, 'Burkett' trees are highly susceptible to aphid infestations. In central New Mexico where the growing season is too short to mature 'Western' or 'Burkett' nuts, early ripening varieties like 'Pawnee' are recommended. "Northern-type" pecans (for example, 'Witte', 'Colby', and 'Lucas') are also available and are adapted to cold climates; they may survive the winters of northern or higher-elevation areas of New Mexico, but the summers may still be too cool to regularly mature even a "Northern-type" pecan crop in these areas. Pecans are grouped into Type I and Type II varieties according to the timing of pollen shed and pollen receptivity of flowers. Orchards produce best if at least one variety of each pollination type is included in the planting.

PISTACHIOS

Pistachio trees are native to the deserts of southwest Asia and are therefore well adapted to survive southern New Mexico's hot, dry summers and alkaline soils. They are also more tolerant of soil salts than any of other fruit/nut tree common to New Mexico. Despite being a desert tree, pistachio trees only produce well if they are watered regularly.

Healthy pistachio trees are hardy to at least 0–10°F when fully dormant, but may sometimes be injured in southern New Mexico by late spring freezes. From time to time, pecan nuts in southern New Mexico are injured by early fall freezes before ripening is complete, but this is unlikely for pistachios because nuts ripen in September (Figure 7).

Pistachio trees are susceptible to a number of foliar and soil-borne diseases, most of which are exacerbated by periods of excessive rainfall or excessively wet soils. One soil-borne disease—cotton root rot—rapidly kills pistachio trees and is not necessarily associated with excess moisture. There is currently no effective way to prevent or manage cotton root rot, so it is prudent to avoid planting pistachio trees in sites known to be infested with this fungus. There are a number of insect pests, including stink bugs and navel orangeworm, that affect pistachio nut quality. These may sometimes require treatment with labeled and registered insecticides.

Pistachio trees are dioecious, having separate male and female individuals. It is necessary to plant both a male and female tree to produce a nut crop. To conserve space in small backyards, it is possible to graft male branches into the canopy of a single female tree, making it unnecessary to plant a separate male tree. There are very few female varieties of pistachios available in the United States, and nearly all of the female pistachio trees in New Mexico are 'Kerman'. Other, rarer female varieties include 'Joley', 'Kalehghouchi', and 'Red Aleppo'. 'Peters' is the male variety most often paired with 'Kerman'.

ALMONDS

Almonds are one of the first fruit or nut species to flower in the spring, and they consequently produce infrequent crops in New Mexico. They are most likely to produce fruit at lower elevations in the southern part of the state (Figure 8). The most common varieties, such as 'Mission' ('Texas') and 'Nonpareil', are extremely early blooming. More dependable production may be possible with such later-blooming varieties as 'Reliable',

Figure 8. **Ripening almond fruits.**

Figure 9. **Blackberry canes with fruit.**

'Oracle', 'All-in-One', 'Bounty', and 'Titan'. In southern New Mexico, these attractive, small shade trees are usually long-lived so long as they do not become infested with peach tree borers. Most almond varieties require a nearby compatible pollinizer tree and the presence of honeybees to set fruit.

BERRIES

Bramble fruits (e.g., blackberries and raspberries, Figure 9) and strawberries can be difficult to grow in the warmer areas of New Mexico. Production is typically poor, and it is difficult to maintain fruiting wood on brambles. Everbearing strawberries may be grown on raised beds in partial shade with mulch and frequent irrigations. Boysenberries are the best-performing brambles for southern New Mexico. Black currants, grown with protection from afternoon sun, are sometimes profitable. Growing berries is usually more successful in northern New Mexico or high-elevation areas.

Semi-trailing blackberries like 'Triple Crown' and 'Chester' are acceptable, but in some years they can experience severe winter damage in northern New Mexico. For the freestanding varieties, 'Navajo' did not perform well in high-pH (alkaline) soil. 'Natchez' and 'Ouachita' did better than 'Navajo'.

Raspberries do not like hot summers. They can grow in northern New Mexico and high-elevation areas. Fall raspberries like 'Polana', 'Caroline', and 'Joan J' are recommended. 'Polana' has smaller fruit and a shorter growing season, and is suitable for high elevations with shorter growing seasons; 'Caroline' is productive and matures later in the season; and 'Joan J' is a mid-season, thornless variety with big fruit.

In northern New Mexico, based on a strawberry variety trial at Alcalde, 'Mesabi', 'Kent', and 'Cavendish' did better than other varieties. 'Allstar', 'Chandler', and 'Darselect' are sensitive to high-pH soil and showed significant leaf chlorosis, which should be avoided in variety selection. Growers do need to monitor for leaf chlorosis, but it can be corrected with application of FeEDDHA (a chelated iron product). Strawberry flowers are vulnerable to late frosts, but complete yield loss rarely happens because late flowers will compensate the early loss from late frosts.

Gooseberries like 'Hinomaki' and 'Invicta' did well at Alcalde. Black currant 'Randal' is productive in northern New Mexico, and the fruit quality is good for fresh eating or processing.

BLUEBERRIES

The optimal soil pH for blueberries is 5–5.5. It is almost impossible to grow blueberries in the alkaline, calcareous soils of New Mexico unless they are grown in containers with potting mix under special care.

JUJUBES

Jujubes, also called Chinese dates (Figure 10), leaf out 4–6 weeks later than most tree fruit species. Jujubes are not frost-tolerant, but their growth habits allow them to avoid late frosts in most years. Jujubes rarely miss a crop even in years with severe late frosts. They also adapt well to the alkaline soils and hot, semiarid climate of New Mexico. Commercial production is limited, but there are scattered plantings from Alcalde all the way to Las

Figure 10. **Jujube fruits.**

Cruces. They all grow and produce well. So far, there are no pest or disease problems for jujubes in New Mexico.

With its nutritious fruit, late start-up, wide adaptation, and freedom from pests/disease, jujubes are a good choice for home orchardists. In northern areas, growers should avoid the late-maturing varieties since the early frost limits the length of the growing season. For southern New Mexico, all varieties perform well. 'Li' and 'Lang' are the two most popular varieties; 'GA866' and 'Sugarcane' are also available. 'Sherwood' is too late for northern New Mexico. 'So' is an ornamental variety, but exhibits winter damage in some years in northern New Mexico. We are evaluating jujube varieties at Alcalde and will recommend more varieties after a few more years' observation. As a precaution, jujube trees do have thorns and occasional suckers.

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