



BACKYARD FRUIT PRODUCTION AT ELEVATIONS 3500 TO 6000 FEET

Deborah Young, Robert E. Call, Michael Kilby and Tom DeGomez

Introduction

The mid elevations (3,500 to 6,000 feet) in Arizona can be ideal for growing tree fruit. Lower elevations can be too warm not providing sufficient chilling (cold weather in dormant season) and the highest elevations have late spring frosts that kill blossoms. Although both of these problems can occur at the mid elevations it is less likely.

Microclimates occur all around us. The front yard may be warmer than the backyard, close to the house is going to be warmer than out by the street. Cold air travels downhill and acts much like water. Air flows to and settles in the lowest spot, it dams up behind houses, fences, and groves of trees. Rock outcroppings and bare ground retain heat and radiate that heat during the night. Site selection can make a pronounced effect on how well fruit will grow and produce. The warmer the site the greater the chance of success. Areas where cold air settles are a poor choice for tree fruit production.

Varieties

Many types of tree fruits are self-unfruitful. This means that the specific variety that is being grown will not pollinate itself. As such, one must grow a second variety to provide pollen that will be compatible with the first variety. Often we choose two varieties that will pollinate each other; the most common example of this *Golden Delicious* and *Red Delicious* apples. Within this section we indicate which varieties are compatible. Varieties are listed as early-, mid-, or late-season blooming.

APPLE

Although most apple varieties set fruit without cross-pollination from another variety, most set better with a pollinizer (a plant that is a source of pollen). Varieties that bloom about the same time as other apples can be used as a pollinizer. Crabapple varieties, such as *Manchurian* and *Snowdrift*, also can be used as a pollen source. Pollen is transferred by bees and some fly species.



Apples are dwarfed by budding or grafting the desired variety on special clonal rootstocks. M9, M26, and M7 are dwarfing rootstocks that need some type of support system such as a stake, post or fence. MM106 and MM111 are semi-dwarfing rootstocks; these are considered the best for Arizona conditions for the homeowner. Below are listed varieties by harvest season.

Dual purpose apples can be used fresh or cooked.

Early

Earligold: Medium to large fruit; yellowish green color Self-pollenizing. Good annual production. Stores well. Dual purpose.

Gravenstein: Medium to large fruit; skin red-striped over green; flesh crisp and fine-textured. Tree extremely vigorous. *Requires a pollinizer*. Bears alternate years unless thinned. Dual purpose.

Lodi: Large fruit; skin yellow and thick; flesh has tart, acid flavor. Tree is large, and hardy. Bears alternate years. Dual purpose.

Red Astrachan: Medium to large fruit; skin whitish- green with crimson stripes; flesh white, soft, and tart. Tree medium size. *Grows well in hot areas*. Dual purpose but very short storage life.

Midseason

Criterion: Medium to large fruit. Yellow skin, white flesh, sweet, is an improved *Golden Delicious*.

Gala: Skin scarlet-striped over yellow; aromatic flesh with sweet flavor. Large, upright tree. Dessert apple. (Parentage: *Golden Delicious* crossed with *Pippen*.)

Golden Delicious: Medium to large fruit; skin yellow; flesh juicy and aromatic. Tree moderately vigorous; bears young. Bears annually if thinned. Dual purpose; does not store well—shrivels. *Excellent pollinizer for other varieties*.

Red Delicious: Most widely grown apple in the world; fruit solid red with yellowing; tree large and spreading. Aromatic and sweet tasting. Requires pollinizer for maximum yields.

Late

Arkansas Black: Yellow flesh covered with purplish-red skin; hard and crisp. *Requires a pollinizer.*

Fuji: Dull red, medium sized fruit. Slight acidity. Sweet with excellent aroma and cream-colored flesh. Stores well.

Granny Smith: Large fruit; skin bright green, tart and very juicy. Tree very vigorous. Becomes sweeter in storage. *Sets better with pollinizer.* Long bloom period.

Idared: Medium fruit; nearly round; skin solid red; fine-grained aromatic flesh. Tree moderately vigorous. *Blooms early.*

Jonagold: Large fruit; red stripes over yellow; flesh slightly coarse in texture. Sturdy tree with wide limb crotches. *Requires a pollinizer. One of the best dual-purpose apples. (Parentage: Golden Delicious crossed with Jonathan.)*

Pink Lady (Cripps Pink): Medium size; reddish yellow-green, firm, crisp fruit. Matures in 200 days.

Rome Beauty: Large and round fruit; skin red, flesh very firm. Late blooming; *good for late spring frost areas.* Small to medium tree.

APRICOT

Of the varieties listed below, only Perfection requires cross-pollination. Any other variety will act as a pollinizer. Apricots bloom early, therefore, crops may be lost when blooms are killed by spring frost.



Early

Perfection: Large fruit; firm flesh with a large pit. Tree is a heavy cropper. *Needs pollinizer.* Good for canning.

Midseason

Harglow: Prolific producer, *late blooming.* Fruit medium size, flavorful and firm, bright solid orange.

Tilton: Very large fruit. Heavy bearer. Eat fresh - poor taste when dried.

Wenatchee: Large, flattened fruit; suffers from unequal halves (one side less developed); heavy annual bearer. Good for eating.

Late

Goldcot: Medium fruit with thick, tough skin; firm flesh. Strong tree; *blooms late.* Process or eat fresh.

CHERRY

Most sweet cherries are self-unfruitful; two varieties have to be planted to produce fruit for cross pollination. Sour cherries, such as *Montmorency*, can be used to pollinate sweet



cherries. Recommended dwarfing rootstocks are Gisela® 6 and Gisela® 12, (²/₃ to ³/₄ smaller than seedling rootstocks).

SOUR, TART, OR PIE CHERRY

Montmorency: Large, bright red fruit which is tart.

SWEET CHERRY

Early

Bing: Large, red, firm fruit. Spreading tree; heavy crops. *One of the best to eat fresh.* Use *Van* as pollinizer.

Rainier: Fruit resembles *Bing* in shape; yellow with red-blush. Vigorous tree tends to overbear; use *Bing* as pollinizer.

Van: Dark, shiny fruit; smaller than *Bing*. Use *Bing*, *Rainier*, or *Lambert* as pollinizer.

Late

Lambert: Large, purplish fruit; upright growth difficult to train. Use *Rainier* or *Van* as pollinizer. Dwarf variety *Compact Lambert* available. *One of the best to eat fresh or dried.*

Stella: Black, heart-shaped fruit; self-fertile; good pollinizer.

FIG

No pollinizer is required for these varieties. Do not grow in locations colder than 15 °F. or the plant will freeze to the ground, growing back as a bush.



Mission: Most dependable, all around fig. Produces a spring and fall crop. Black skin and strawberry pulp. Use fresh, dried or jam.

Kadota: Yellow skin and amber pulp.

NECTARINE

Nectarines are less hardy than peaches and more susceptible to brown rot and damage by thrips insects. Self-fruitful, but need to be thinned for large fruit, (see page 5).



Red Glo: Mid-season; large, yellow flesh; freestone.

Sun Glo: Mid-season; large deep yellow flesh; freestone.

PEACH

Nearly all peaches are self-fruitful and do not need pollinizers. Varieties with Hale in the name like *Early Hale* or *Hale Haven* will require another variety as a pollinizer. The variety *Indian Free* produces sterile pollen and needs another peach variety for pollination. Thinning needed for large fruit, (see page 5). Genetic dwarfs are available.



Early

Redhaven: Medium sized fruit; skin red over yellow; yellow flesh, semi-freestone, sweet and fine-grained. Vigorous

and spreading tree. *Requires heavy thinning.* Superior for fresh use.

Sunhaven: Medium sized fruit; skin is red over gold; fine grained flesh is semi-clingstone. Tree is large and productive. Good for eating fresh.

Midseason

Early Elberta: Large fruit; yellow with red blush; freestone; less subject to fruit drop. *Thin well.* Use for canning or freezing.

Rio Oso Gem: Large fruit with red skin; freestone. Tree small. One of the best peaches for freezing.

Late

Cresthaven: Medium, round fruit; freestone; juicy, resists browning. Good for freezing and canning.

Indian Free: Large fruit; freestone; flesh is red near pit. *Requires a pollinizer.* Good in home gardens.

Madison: Medium fruit; flesh orange-yellow; freestone, very firm; non-browning flesh. Tree is heavy producer. *Adapted to areas with frequent spring frosts.*

PEAR

Most varieties are self-fruitful, but will produce more fruit when pollinized by another variety. Choose varieties that bloom at the same time. Dwarfing rootstocks are available.



Early

Bartlett: Medium fruit, green at picking; vigorous tree. *Susceptible to fireblight.*

Midseason

Seckel: Small reddish-brown fruit; best dessert qualities; semi-dwarf tree is productive. Not compatible with *Bartlett* for cross-pollination.

Surecrop: Fruit resembles *Bartlett*; prolonged bloom — *good for late frosts; resistant to fireblight.*

Late

Comice: Large, yellow fruit; flesh buttery. Vigorous tree, but slow to bear. *Best winter pear (stores well).*

ASIAN PEAR

Asian pears are self-fertile. More fruit is produced if pollinized by another variety.

Chojuro: Oblong fruit; skin greenish-brown; flesh mildly sweet. Tree vigorous and dense. Midseason producer.

20th Century: Round fruit; skin greenish-yellow; flesh sweet to slightly tart. Tree is medium size. Midseason producer.



PERSIMMON

No pollinizer is required.

Hachiya: Astringent until soft; fruit oblong with pointed tip.

Fuyu: Non-astringent, sweet and mild.



EUROPEAN PLUM (PRUNE)

Although some plums need cross-pollination, no pollinizers are required for the varieties listed below.

Midseason

Green Gage: Medium, greenish fruit; flesh yellow, sweet and mild. Medium-sized tree. All purpose.

Late

Stanley: Large, purple fruit; flesh yellow, juicy and sweet. Large productive tree. *Susceptible to brown rot.*



JAPANESE PLUM

Pollinizers may be required for adequate fruit set.

Early

Santa Rosa: Large, purple fruit; yellow flesh slightly tart. Large productive tree, *widely adapted—one of the best.*

Midseason

Ozark Premier: Very large, bright red fruit; flesh fine grained, juicy, and tart. Vigorous and productive self-fruitful tree. Good for all uses. *Satsuma* can be used as a pollinizer.

Satsuma: Small-medium, dark red fruit; juicy, sweet red flesh; tree is upright. Use for desserts or preserves. *Ozark Premier* or *Santa Rosa* can be used as a pollinizer.



Selecting Trees

Proper tree selection and handling is extremely important in order for newly planted trees to survive and grow properly. Select one year old trees which are ½ to ¾ inches in diameter, with ⅝ of an inch being ideal, 6 inches above the bud union.

Choose trees without wounds and/or broken branches. Inspect roots for damage, girdling, or other problems. If trees are bare root be sure that roots are moist and packed in a moist medium (sawdust, peat moss, etc.). If a root dries out it will die!

Planting Tips

February and March are the best months to plant bare root trees, although they can be planted anytime during the dormant season (between leaf fall and swelling of new buds). Try to plant 30 days before bud break. Containerized plants are best planted in late September through early October.

SELECTING A PLANTING SITE

1. Fruit trees need soil with good drainage. Dig a hole 12" x 12" x 12". Fill the hole with 5 gallons of water; then fill again with water after a half hour. If the hole has drained in 24 to 48 hours, the site has good drainage.
2. Avoid areas known to harbor Texas Root Rot or standing water to avoid *Phytophthora* collar rot.
3. Avoid low-lying areas where cold air settles for frost prevention. Remember that a south facing slope is warmest causing trees to bloom earlier. Planting on north facing slope may avoid late spring freezes. Radiation is reflected and stored in masonry walls. Micro-climates may cause earlier spring bud break causing fruit flowers to freeze.
4. Planting site should be an adequate size for the desired planting. (See vital statistics below.)
5. Do not plant fruit trees in a lawn. They will most likely not be watered adequately. They are not ornamental trees!

HOW

Fruit trees are usually purchased bare root. They may also be purchased "balled and burlapped" or in containers. Do not let the roots dry out. Store plants in a cool, shady spot until planting. "Heel in" bare root trees if not planted within ten days.

1. Establish trees in *native* soil. Do not add other materials, such as peat moss or manure to the soil. Keep trash, weeds, manure, and other organic debris out of planting hole. Do not add chemical fertilizers or organic matter to the planting hole; they may kill roots. Other root stimulating materials are not recommended.
2. Dig holes when the soil is dry or only slightly moist.
3. The inside of hole can glaze or seal off if dug wet or using a mechanical auger. This prevents roots from penetrating into surrounding soil.

4. Loosen soil five times as wide and only as deep as the root ball to facilitate root growth.
5. Cut back roots to allow planting without crowding or twisting roots to get them into the hole. Prune any roots that are broken or discolored.
6. If bare root, form a small mound in the bottom of hole and spread roots over the mound.
7. Place tree in the hole at its original nursery planting depth. Be sure the bud union (the point where the fruiting variety is budded or grafted to the rootstock) is above the soil level.
8. Fill hole with half of the soil. Water to settle the soil around roots. Fill in the remaining soil. Firm soil around roots and water in.
9. Form a watering basin which extends beyond the edge of the root ball. Water thoroughly. Check planting depth as the tree may sink over time.
10. Paint trunk with white latex paint to guard against summer and winter sunburn.
11. Place a 12-18" tall rodent guard around the trunk to deter feeding. Guards can be made from ½" hardware wire mesh. Commercial plastic guards can be purchased.
12. Cover entire basin area with 4-6 inches of mulch.

COMMON PLANTING MISTAKES

1. **Improper irrigation:** Water often (every 2-3 days) but lightly for the first month.
2. **Lack of weed control:** Weeds rob a young tree of moisture, nutrients and sunlight. Keep out weeds by using organic mulches such as bark chips or hand weeding.
3. **Poor quality trees:** Nothing can improve a poor tree.
4. **Improper handling:** Dry roots will not revive.

| Vital Statistics | | | | | |
|------------------|-----------------------|--------------------------|--------|--------------------------|------------------------|
| Crop | Years to Bearing Age* | Height at Maturity (ft.) | | Spread at Maturity (ft.) | Life Expectancy (yrs.) |
| | | Unpruned | Pruned | | |
| Apple | 3-8 | 40 | 20* | 30-40* | 20-30 |
| Apricot | 3-4 | 30 | 15 | 30 | 30 |
| Cherry | 4-6 | 40 | 25* | 30* | 20-30 |
| Fig | 2-3 | 40 | 6-25 | 25-60 | 30-40 |
| Peach/Nectarine | 3 | 25 | 15 | 25 | 15-20 |
| Pear | 4-8 | 40 | 15* | 25* | 25-45 |
| European Plum | 4-5 | 30 | 15 | 25 | 20 |
| Japanese Plum | 3 | 30 | 15 | 25 | 20 |

* Can be reduced with dwarf or semi-dwarf rootstocks.

Pruning and Training

There are two basic forms that are used to prune fruit trees. The form that is chosen depends on the growth habits of the tree. Trees that put on high amounts of foliage are pruned to an open center or vase shape. This pruning system allows for more sunlight to reach all the branches of the tree. Whereas the central leader is used with those trees that are less vigorous.

Trees should be pruned immediately after planting. Cut back top 1/3 or more. Remove all shoots from poorly branched tree. Some lower shoots can be left on a well-branched tree. Prune trees with thinning cuts, i.e., remove the entire shoot where it originates, to develop the main scaffold branches. Head the leaders (but not the secondary branches) annually to stiffen them. Heading means cutting off part of a shoot or limb rather than removing the entire shoot or limb at a branch point. Spread limbs using weights, wooden spreaders, etc. to crotch angles of at least 60 degrees. See Arizona Cooperative Extension publication #AZ1668 Training and Pruning Newly Planted Deciduous Fruit Trees.

After the tree is trained to desired shape and conformation (after two growing seasons), only minimal corrective pruning is needed. Excessive pruning can delay time of first flowering. Fruit trees are pruned during the winter dormant season every year.

APPLE - central leader

Fruiting spurs are short shoots that bear compound flower buds, occur on wood two years old and older and are productive for 5-8 years. (Gala bears on one year old wood.) Fruit is produced terminally (on the ends) on spurs. Most pruning is with thinning cuts. Leaders and scaffold limbs may be pruned with heading cuts (but not the secondary branches) annually to stiffen them for the first couple of years. Apples trees need limb spreading.

APRICOT - modified central leader

Fruit is produced laterally on short-lived spurs. Fruit producing spurs are short-lived, so remove side branches throughout the tree to cause new spurs to form. As with all open center trees thin out limbs growing into the center of the tree, allowing more sunlight penetration.

CHERRY - modified central leader

Fruit is produced laterally on long-lived spurs that are productive for 10-12 years. They need less renewal wood than other deciduous fruit trees. Thin out new shoots annually. Tart cherries produce fruit on one year old wood. Thin out limbs growing into the center, allowing for more sunlight penetration. Cherry trees need limb spreading.

FIG - open center or modified central leader

Pruning should be less severe than for other fruit trees. Fruit is borne on shoots of current season's growth. Thin out wood in the center for better sunlight penetration.

PEACH/NECTARINE - open center

Peach and nectarine trees are pruned more heavily than other fruit trees. Fruit is produced laterally on shoots of past season's growth. Thinning out one-year old shoots will aid by thinning out fruit buds.

PEAR AND ASIAN PEARS - central leader

Fruit is produced terminally on long-lived spurs. Use thinning cuts to remove one-year old wood. Follow same guidelines as for apples. Pear trees need limb spreading.

PERSIMMON - modified central leader

Trees bear fruit on current season's growth. Prune to 3 to 5 main branches. They need little pruning. Thin shoots, (length of branch growth in a single season), to promote growth for next season's crop.

EUROPEAN PLUM - modified central leader

Fruit is produced laterally on long-lived spurs. Prune by moderate thinning of lateral fruiting wood.

JAPANESE PLUM - open center

These trees bear fruit on long-lived spurs and on one year old shoots. Sacrifice this production by removing most one-year old shoot growth each year in order to shape the trees. Leave unheaded shoots 12 to 18-inch long to develop spurs in the 2nd and 3rd years.

Fruit Thinning

There are several reasons to thin fruit. They are: 1) increase fruit size; 2) reduce limb breakage; 3) improve fruit color and quality; 4) stimulate floral initiation for next year's crop; and 5) decrease alternate year bearing. Home gardeners thin fruit trees by hand. Thinning can begin during bloom, but should be completed 3-6 weeks after bloom. Thinning needs to be completed before fruit cell division stops for maximum effect. After cell division is completed fruit cells enlarge the remainder of the growing season.

During May and/or June, many fruit trees will drop or abort fruit. This is a natural process that allows the tree to mature the crop load.

APPLE

The best time to thin is within 20 to 40 days after full bloom. Space each apple 6 to 8 inches apart on the branch. In normal flower clusters of five, leave the center bloom, known as the king bloom, because it will develop into the largest fruit.

APRICOT

Thin when fruit is 1-inch in diameter. Apricot trees are heavy producers and can be severely thinned. Space fruit 6 inches apart after all frost hazards have passed.

PEACH/NECTARINE

Thin fruit when 1-1¼ inch in diameter. Space the fruit 6 to 10 inches apart on the branch.

PEAR

These trees seldom require thinning. Remove small or blemished fruit as soon as they are seen. Leave only 1 to 2 fruits per cluster to improve size.

EUROPEAN PLUM

These fruits are not thinned.

JAPANESE PLUM

Thin when the fruit is large enough to be easily picked. Space plums 4 to 6 inches apart on the branch and break up clusters.

Fertilization

Fruit trees should be fertilized annually beginning in February or March. Leaf samples are the best way to access tree nutrient status. Leaf samples are collected in mid-August and sent to a laboratory for analysis. Nitrogen (N) is the most important nutrient to apply. If N is deficient older leaves will turn yellow. When applying N work into the soil then water lightly. Apply $\frac{1}{3}$ of total N at bud swell and another $\frac{1}{3}$ six weeks later. The last $\frac{1}{3}$ is applied in late September or early October. The last application is stored in roots and the trunk for early spring growth the following year. Spread around the tree drip line, water or scratch in. (The drip line or drip edge is an imaginary line extending from the outer edge of the plant canopy to the ground).

Example: An apple tree has a 2-inch trunk diameter, so it needs 0.2 lbs. of actual nitrogen. Ammonium phosphate (16-20-0) contains 16% actual nitrogen; i.e., there are 16 lbs. of actual nitrogen in 100 lbs. of fertilizer. So, $0.2 \text{ lbs.} \div 16\% = 1.25 \text{ lbs.}$ Therefore, **annually** apply a total of 1.25 lbs. of ammonium phosphate to supply 0.2 lbs. of actual nitrogen to the tree. Apply $\frac{1}{3}$ of the total amount, about four tenths of a pound, at a time.

Minor elements most often deficient in Arizona soils are iron and zinc. Both nutrients, when applied to deficient soils, are quickly tied up chemically in the soil and not available to the tree.

Iron deficiency causes a yellowing of young new leaves while the veins remain green. Irrigating too frequently in the spring can induce iron deficiency.

Symptoms of zinc deficiency include shortening of the of shoots and space between leaves or nodes. Many leaves are bunched at the twig end (rosetting), small leaves, and in severe cases brown areas on leaves.

One way to remedy micronutrient deficiencies is to apply them to leaves in a chelated form. Foliar sprays are most readily absorbed by young expanding foliage.

| Crop | Amount of N per inch of Trunk Diameter |
|--|--|
| Apple/Pear | 0.1 pounds or 1.6 oz. |
| Apricot, Cherry, Peach/Nectarine, Plum | 0.05 pounds or 0.8 oz. |

Watering

For maximum tree and fruit growth, water needs must be satisfied from buds swelling through harvest. Nutrients needed for proper tree and fruit growth are taken up in the water stream.

Normal fruit development depends on a continuous supply of water. For example, the red or yellow color of apple fruit will not develop properly if trees are stressed for water. Other problems aggravated by improper irrigation timing include split pits of peaches and cracks on plums.

Not only does proper watering allow the fruit to develop normally on the tree, but summer irrigation helps the crop for the following year. Flower buds are initiated in the summer and develop in the fall. Dry soil during the summer will cause apple and pear trees to have a heavier bloom and a reduced fruit set next spring. Peach, plum, and apricot trees react differently to summer water stress; they will have little or no bloom the following spring.

Watering frequency during the growing season can vary from 7 to 21 days, depending on tree age, climate, and soil type. Young plants have small root systems and require close attention. Mature fruit trees respond to deep watering; saturate the soil to a depth of 2 to 3 feet. Build basins to extend past the tree's drip line.

Use a soil probe, a pointed metal rod, or an auger, to determine soil water penetration and dryness by pushing it into the soil. Moist soil is penetrated easily with a probe. When dry soil is reach the probe stops, thus determining water depth.

Mulches will help conserve moisture, control weeds and add organic matter. Use organic mulch, like straw or bark chips, 4-6 inches thick. Keep mulch away from the tree trunk to lessen crown rot and cover for rodents that may feed on the trunk.

Once fruit has been harvested, continue periodic irrigation until leaves fall. Let the tree harden-off when going into winter. Remember as long as the leaves remain green, trees will use some water. Irrigation also may be needed during winter, especially with high temperatures and/or inadequate winter precipitation. Remember dry roots die!

Fruit trees are very sensitive to excess salt - either in the soil or irrigation water. Electrical conductivity, (EC) is a measure of salinity; the more salt ions in the water, the better it conducts electricity. If soil EC levels are greater than 2.5, salts may damage the tree. The first symptom of salt burn is brown or yellow leaf edges. Frequent, shallow irrigations can cause salt to accumulate in the root zone. Much of this salt can be removed by leaching the soil. To leach the soil, apply three or four times the amount of water than a normal irrigation. Late fall is a good time to leach salts because trees are going dormant and less susceptible to soil waterlogging.

Common Problems

Fruit trees in Arizona do not suffer from many of the problems experienced in other parts of the country. Many plant problems are caused by people and their actions and not by insects or microorganisms. Assistance can be obtained from your local Extension Office or a Master Gardener. The most common insect and disease problems are listed below.

FRUIT TREE INSECTS

CODLING MOTH (*Cydia pomonella*) larvae are found in apple and pear fruit during the summer. Fully grown larvae are pinkish-white with a brown head and ½ to 1 inch long. There are usually two or three generations of codling moth per year. The first flight of moths occurs 3 to 4 weeks after bloom and over a 6 week period, depending on temperatures, in April and May. Second and third peaks of moth activity usually occur in mid-July and mid-August, respectively.



PEACH TREE BORERS (*Synanthedon exitiosa*) attack apricot, cherry, nectarine, peach, and plum trees. The peach tree borer is a white worm about 1 inch long that works underneath the trunk bark and below the soil line, often injuring or killing the tree. The adult emerges in July, August and September. The female clear winged moth is a dark steel blue to shiny black with an orange band around the abdomen. Egg laying begins shortly after the moths appear.



Other insect pests include:

| | |
|--|------------------------------------|
| Fig beetle or green fruit beetle | <i>Cotinus mutabilis</i> |
| Leaf-footed plant bugs | <i>Leptoglossus zonatus</i> |
| Peach twig borer..... | <i>Anarsia lineatella</i> |
| Pear blister mite..... | <i>Phytoptus pyri</i> |
| Pear slug | <i>Caliroa cerasi</i> |
| Plum curculio..... | <i>Conotrachelus nenuphar</i> |
| San Jose scale | <i>Quadraspidiotus perniciosus</i> |
| Scale insects..... | <i>Diaspididae</i> family |
| Two spotted spider mite..... | <i>Tetranychus urticae</i> |
| Western flower thrips | <i>Frankliniella occidentalis</i> |
| White apple leafhopper..... | <i>Typhlocyba pomaria</i> |
| Woolly apple aphid..... | <i>Erisoma lanigerum</i> |

Fruit Tree Diseases

Plant diseases that may occur on fruit trees at these elevations include **fireblight** (*Erwinia amylovora*), a bacterial disease found on pear and apple trees. **Brown rot** (*Monilinia fructicola*), is a fungal disease that attacks blossoms and fruit of peach, nectarine and plum trees. **Shot-hole disease** (*Wilsonomyces carpophilus*) is a fungal disease that occurs occasionally on peach, nectarine and cherry trees. **Powdery mildew** (*Podosphaera sp.*) is a fungus

disease that may be found on susceptible varieties of apple. **Phytophthora crown rot** fungus causes root and crown rot of various fruit trees. **Texas Root Rot** (*Phymatotricum omnivorum*) is a soil fungal disease of roots, often causing trees to die rapidly in late summer.

Further information about fruit tree pests can be found at: <http://www.ipm.ucdavis.edu/index.html>

Related Publications

- These publications are available at County Extension offices and on-line at <http://cals.arizona.edu/pubs/>
- Arizona Master Gardener Manual*, Arizona Cooperative Extension, 2012.
 - Fire Blight*, Arizona Cooperative Extension AZ1030, Mary W. Olsen, 2011.
 - Guide to Symptoms of Plant Nutrient Deficiencies*, Arizona Cooperative Extension AZ1106, Shanyyn Hosier and Lucy Bradley, 1999.
 - Planting Guidelines: Container Trees and Shrubs*, Arizona Cooperative Extension AZ1022, U. Schuch, J. Kelly and J. L. Tipton, 2012.
 - Powdery Mildew*, Arizona Cooperative Extension AZ1033, Mary W. Olsen, 2011.
 - Training and Pruning Newly Planted Deciduous Fruit Trees*, Arizona Cooperative Extension. AZ1162, D. Young, R.E. Call, M. Kilby and T. DeGomez, 2015.



COLLEGE OF AGRICULTURE & LIFE SCIENCES

Cooperative
Extension

THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
TUCSON, ARIZONA 85721

ROBERT CALL
Former Extension Agent, Horticulture

DEBORAH YOUNG
Former County Extension Director and Agent

MICHAEL KILBY
Emeritus Fruit and Nut Extension Specialist

REVISED BY:
TOM DEGOMEZ
Regional Specialist and Area Agent

CONTACT:
TOM DEGOMEZ
degomez@ag.arizona.edu

This information has been reviewed by University faculty.
extension.arizona.edu/pubs/az1162-2015.pdf

Originally published: 2000

Other titles from Arizona Cooperative Extension can be found at:
cals.arizona.edu/pubs

Any products, services or organizations that are mentioned, shown or indirectly implied in this publication do not imply endorsement by The University of Arizona.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jeffrey C. Silvertooth, Associate Dean & Director, Extension & Economic Development, College of Agriculture Life Sciences, The University of Arizona.

The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.