

Peach, Apricot, and Nectarine

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Armillaria Root Rot: This can be a major disease in older orchards and replanted orchards. (**See Photo**) (See Section on Mushroom Root Rot)

Bacterial Canker (bacterium – *Pseudomonas syringae*): Elongated cankers develop at the base of buds and randomly on the trunk and scaffold limbs (**See Photo**). Damaged areas are slightly sunken and somewhat darker in color than the surrounding bark. At both the upper and lower margins of the canker, narrow brown streaks extend into healthy tissue. As the trees break dormancy in the spring, gum is formed by the surrounding tissue and may exert enough pressure to break through the bark and flow. The area beneath the canker has a soured odor. Individual scaffolds or the entire tree usually dies shortly after leafing out in the spring. Roots are not affected. Extensive suckering (**See Photo**) often occurs at the tree base. The bacterium is a weak pathogen and causes serious damage only when a tree is in a dormant condition or weakened due to unfavorable growing conditions. Bacterial canker is a component in a disease complex known as Peach Tree Short Life. Trees up to 7 years old, growing on deep sandy soil are most susceptible. Avoid using high nitrogen fertilizer rates in mid to late summer. Do not encourage late fall growth. Prune when the trees are fully dormant (January and February). High dosage of a copper-containing fungicide at leaf drop has been somewhat successful.

Bacterial Spot (bacterium – *Xanthomonas campestris* pv. *pruni*): Symptoms on leaves are observed first as small, circular, or irregularly shaped, pale green lesions (**See Photo**). During early development, lesions almost always are concentrated near the leaf tip. In advanced stages, the inner portion of the lesion falls out, giving the leaf a “ragged” or “shot hole” appearance. Leaves heavily infected with bacterial spot turn yellow and fall. Repeated infection can occur throughout the growing season as long as the environment is favorable. Symptoms first appear on fruit as small, olive brown, circular spots. Spots become slightly darker and depressed as the bacteria develops. Lesions are scattered over the fruit surface and tiny cracks develop in the center of the spots. Sometimes symptoms resemble peach scab (**See Photo**). Leaf infection is more common than fruit infections. Apparently, more specific climatic conditions are necessary for fruit to become infected. Chemical control during the season is difficult. Dormant sprays have been somewhat effective if the spray is timed to protect stems during the fall infection period. Copper containing fungicides should be applied just as the leaves begin to shed. Resistant varieties are available. (See Fungicide Table Below)

Brown Rot (fungus – *Monilinia fructicola*): The brown rot fungus causes blossom blight and fruit rot, but fruit rot is the most common. Surface moisture and moderately warm temperatures favor disease development. With blossom blight, flowers turn brown and are water-soaked. The fungus grows down the pedicel into the stem resulting in dark

brown, sunken areas (**See Photo**). Young stems are often girdled causing twig dieback. In some instances, young fruit may become infected but not show symptoms until the fruit matures. Generally, fruit are resistant to infection during the hard green stages of development. Fruit are most susceptible near maturity. The fungus enters fruit directly or through natural openings or wounds. A brown, water-soaked lesion rapidly develops (**See Photo**). The brown rot fungus overwinters in mummies, stem cankers and on infected fruit peduncles. Beetles or other insects can be vectors for the fungus. Control by applying a fungicide (*See Fungicide Table Below*) during pink bud, bloom, petal fall, and at preharvest. Post harvest decay can be serious if fruit is not protected. Nectarines are more susceptible than peaches.

Cotton Root Rot: (See Section on **Cotton Root Rot**)

Crown Gall: (See Section on **Crown Gall**)

Fungal Gummosis (fungus – *Botryosphaeria dothidea*): The fungus enters through wounds or lenticels on lower parts of scaffold limbs and the trunk. Older infection sites typically exude gummy resin. Necrosis is associated with infection but usually is restricted to the area just under the bark. Over time the bark develops a rough texture. Trees can recover somewhat if infection is not severe. Stressed trees are damaged the most. (**See Photo**)

Leucostoma Canker (fungus – *Leucostoma cinata* – anamorph *Cytospora leucostoma*): The fungus is a weak pathogen and is rarely a problem in well managed orchards with rapidly growing trees. Pimple-like bumps develop on the surface of cankers. During the growing season small streams of gum are formed at each pimple. In most cases a callus layer forms around the damaged area and the canker is walled off. In a few cases the canker growth will resume in the fall after the callus growth is slowed. Leucostoma canker may become established in a limb through pruning cuts or sunburn injury. Affected trees should be pruned to remove the canker sites and fertilized to promote growth. (**See Photo**)

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Oxyporus Root and Crown Rot (fungus – *Oxyporus* sp.): The fungus forms a thick, white to slightly off-white fungal mat at the base of tree trunks. Trees infected with *Oxyporus* show a slow decline. There are no specific controls.

Peach Leaf Curl (fungus – *Taphrina deformans*): The peach leaf curl fungus infects leaves, flowers, and fruits. Infected leaves are characterized by puckering, thickening and curling. Diseased leaves become pale yellow to light green and shed after a short time (**See Photo**). Fruit and blossoms shed when infected and are seldom observed by growers. Disease development is related to air temperature at the time buds are opening. If surface moisture is present and the air temperature is near 68oF, infection can take place. Temperatures above 86oF and below 40oF inhibit the fungus. After symptoms are visible, control is impossible. Apply a fungicide (*See Fungicide Table Below*) at the beginning of dormancy and/or just prior to bud break.

Peach Mosaic (virus): This viral disease affects peach and plum. General symptoms are delayed foliation, and small, narrow, crinkled, mottled, yellow leaves. Internodes are shortened, and lateral buds break, giving a rosette appearance. The few fruit produced are deformed resulting in bumpy, misshapen, small fruit. Spread is by grafting and the peach bud mite, *Eriophyes insidiosus*. Remove all virus-infected trees as soon as they are discovered.

Peach Scab (fungus – *Cladosporium carpophilum*): Peach scab, also known as “freckles,” is found wherever peaches are grown. It is most apparent on mid-late season varieties. Small spots develop on fruit and are normally concentrated around the stem or shoulder of the fruit (**See Photo**). Lesions formed on young twigs serve as a means of overwintering. Primary infection in the spring comes from spores produced in twig cankers formed the previous year. Fruit infection normally occurs after shuck split and 2-4 weeks following. Once infection occurs, 40 to 70 days may elapse before symptoms are visible. Control is by repeated applications of an approved fungicide (*See Fungicide Table Below*) during the critical period beginning at shuck split.

Peach Yellows (phytoplasma): The disease has been observed in Texas but is rarely found. Fruits on diseased trees ripen from a few days to three weeks prematurely, have a bitter taste, and are reduced in size. Varieties which normally have red skin are abnormally bright. Leaves are chlorotic, fold upward, and tend to droop. Infected trees leaf out prematurely. The disease is spread by grafting and feeding by the plum leafhopper *Macropsis trimaculata* (Fitch). After infection, it may be 40 days to three years before disease symptoms are visible. Use only bud wood from healthy trees and destroy any trees which show typical disease symptoms.

Phony Peach (bacterium – *Xylella fastidiosa*): This disease does not cause rapid death of trees but results in reduced growth and fruit size. Twigs on diseased trees have shortened internodes and increased lateral branching. The general appearance is a dwarfed, compact growth pattern with dark green foliage. After a few years, the wood becomes brittle and terminal dieback is common. Infected trees leaf out first in the spring and hold their foliage later in the fall. Fruit also ripens earlier on diseased trees. Disease is spread by root grafting and leafhoppers. Remove all trees showing symptoms of phony peach and destroy wild plums growing near the orchard.

Phytophthora Root Rot (fungus – *Phytophthora* spp.): Roots infected by this fungus show extensive root necrosis. Although Phytophthora Root Rot has not been verified in Texas, its presence is suspected based on its wide distribution. Phytophthora Root Rot is most severe on replant sites or in orchards planted on poorly drained soils.

Rhizopus Rot (fungus – *Rhizopus stolonifer*): This fungus is most active during warm, humid weather. Fruit infection results in a “black whiskered” appearance caused by fungal strands which produce an abundance of black spores. Rhizopus attacks peaches and plums only at maturity. Disease prevention is primarily based on orchard sanitation, preharvest fungicides, and rapid refrigeration of processed fruit. Picking containers should be such that fruit receives a minimum amount of handling. Packing equipment should cause minimum injury. Pad any area where fruit will drop onto a belt or roller.

Root Knot (Nematode – *Meloidogyne* spp.) Use resistant rootstocks. (See **Root Knot Nematode**)

Peach Rootstock and Their Reaction To Root Knot Nematode	
Rootstock	Root Knot (<i>Meloidogyne</i> spp.)
Nemaguard	Resistant
Lovell	Susceptible
Elberta	Susceptible
Nemared	Resistant (Has not been extensively evaluated in Texas)
Note: Different races exist within root knot species. Some have been shown to attack “resistant rootstocks” under greenhouse conditions.	

Rust (fungus – *Tranzschelia discolor*): Reddish-brown pustules occur on the lower leaf surface marked by a yellow spot on the upper surface (**See Photo**). It causes premature defoliation which reduces tree vigor. The rust species that infects peach does not infect plum. In most parts of Texas rust is a late season disease that generally does not require treatment. (See *Fungicide Table Below*)

Shot Hole (fungus – *Wilsonomyces carpophilus*): Was formerly called Coryneum blight. Blight lesions on leaves are small, circular, purple spots. In advanced stages spots on the leaves fall out giving the leaf a ragged appearance. Defoliation seldom occurs unless infection is severe. Fruit infection is rare. Buds and twigs die if heavily infected. For most effective disease control, apply dormant sprays immediately after leaves are shed or just prior to budbreak in spring. (See *Fungicide Table Below*)

Waterlogging (physiological): Peach and nectarines, more so than apricots, require well drained soil for good growth. Prolonged periods of waterlogged soil depletes soil oxygen which is deadly to roots. Foliage may turn yellow and shed or develop a reddish purple

color. Dead roots are deep purple to black inside and have a foul odor (**See Photo**).
 Where needed, terrace land for optimum drainage and plant on raised beds.

Fungicides for use on <i>Prunus</i> species						
Bacterial Spot	Brown Rot	Peach Leaf Curl	Scab	Shot Hole	Rhizopus Rot	Rust
copper hydroxide, ziram, spreptomycin sulfate	benomyl, captan, iprodione, triforine, thiophanate methyl, propiconazole, fenbuconazole, tebuconazole, sulfur	chlorothalonil, copper hydroxide, ziram	benomyl, captan, chlorothalonil, thiophanate methyl, sulfur, iprodione	chlorothalonil, copper hydroxide	dicloran	chlorothalonil, sulfur