

Peach Diseases

Growing quality peaches in the home garden can be very rewarding, but difficult, unless a rigid pest and disease control program is maintained. This publication focuses just on disease issues. Reduce diseases by:

- Providing proper growing conditions and planting recommended varieties as indicated in [HGIC 1354, *Peach & Nectarine*](#).
- Using good sanitation practices. Remove all dead branches and mummified fruit from the trees and the ground. Keep the area around the trees free of weeds and plant debris, such as leaves and twigs.
- Following a spray program that begins with dormant sprays and continues through the growing season.

Brown Rot

Brown rot is one of the most common and serious diseases affecting peach fruits. It is caused by the fungus *Monilinia fructicola*, and can also infect flower blossoms and shoots. The disease begins at bloom. Infected flowers wilt and turn brown very quickly. Shoot infections (usually from flower infections) result in small (1 to 3 inches), gummy cankers, which provide the source of infection for fruit rot. Spores from infected flowers and cankers infect healthy green fruit during long wetness periods. Infected fruit remain attached in the tree and provide an additional source of spores for more infections instead of dropping off in a normal fashion. Some infections only show when fruit begins to ripen.

Fruit rot starts with a small, round brown spot, which expands to eventually rot the entire fruit. Infected fruit turns into a mummy on the tree. The fungus survives the winter on fruit mummies (on the tree and on the ground) and twig cankers.



Brown rot of peach.

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Prevention & Treatment: Collect and remove diseased fruit from the tree as it appears. Collect and dispose of any diseased fruit on the ground. In the fall remove all dried fruit mummies from the tree, since this is where the fungus survives the winter. During pruning in winter, remove all cankerous parts of the tree.

Spray during full bloom and two subsequent sprays at 10 to 14 day intervals to prevent infections of flowers and young fruit. Fungicides are also required when fruit ripens. It is important to begin spraying in 7 day intervals (typically, three times until harvest) when fruit turns color from green to yellow and red. Starting a spray program when rotten fruit is already evident will result in poor disease control. Select a fungicide containing captan, thiophanate methyl or propiconazole that is labeled for use on peaches. See spray schematic for peaches below. These fungicides are only effective

if a complete and thorough coverage of the tree(s) can be obtained. See Table 1 for examples of brands and specific fungicide products. Always apply all pesticides according to directions on the label. There is a minimum of a one day pre-harvest interval for these fungicides (that is, the time between spraying and harvesting).

Though products are available at gardening stores for homeowners, many gardeners are not inclined to use pesticide applications for home fruit production. Instead, hobbyist gardeners may use bags to protect fruit from pests and diseases. Clemson University has tested and is promoting the use of specialty bags that, if used properly, allow for production of high quality fruit with very little pesticide input. The bags are recommended for use in a three step fashion: (i) properly take care of your trees to minimize tree stress; (ii) protect your fruit from pests and insects between bloom and the day of bagging; and (iii) enclose nail-sized, green fruit (typically 3 weeks after bloom) with a specialty bag to be removed at harvest. For purchase information and use instructions please see: [Clemson Fruit Bags](#) or simply google this page using the key words "Clemson Fruit Bags".



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Clemson Fruit Bag developed for the home orchard and hobbyist fruit gardener.
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Although all varieties can be infected, there are some (such as 'Contender') that are very tasty and do have some resistance. DO NOT GROW NECTARINES. They are VERY susceptible.

Peach Scab

Peach scab, also known as "freckles", is caused by the fungus *Cladosporium carpophilum*. Disease symptoms occur on the fruit as small (less than ¼ inch in diameter) velvety dark spots and cracks. In cases of severe infection, spots may join together to form large dark lesions. Leaf infection is usually not observed. Twig infections occur on the current year's growth and are light brown after 30 to 70 days, before later enlarging and becoming dark reddish brown the next season. Spots on the fruit only occur on the outer skin. Peel fruit to remove all traces of the disease.



Peach scab.
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Prevention & Treatment: Most varieties are susceptible to scab, although some are more severely affected than others are. Generally, scab is most severe the first year the trees bear fruit, since a large number of twig lesions can develop during the first two growing seasons when no fungicides have been used. Minimize infection by selecting planting sites that are not low-lying. Trees should be properly pruned to allow good air circulation. This helps to promote rapid drying of the leaves, fruit, and twigs.

Periods of rain with temperatures of 65 to 75 °F are optimal conditions for infection. Fungicides can provide adequate control of this disease if applications are properly timed. If disease control is

desired, apply captan, myclobutanil, or wettable sulfur. Make five applications starting at full bloom at 10- to 14-day intervals. See spray schematic for peaches below. See Table 1 for examples of brands and specific fungicide products. Apply all chemicals according to label directions.

Bacterial Spot

This disease is caused by the bacterium *Xanthomonas campestris* pv. *pruni*, and affects peach fruit and leaves. Infected leaves develop small reddish-purple spots that often have a white center. In advanced cases, the inner portion of the spot often falls out, giving the leaf a "ragged" or "shot-hole" appearance. Infected leaves turn yellow and drop from the tree. Lesions on fruits appear as small dark spots, which become larger and crater-like as the fruit grows. These lesions are generally shallow but can be ¼-inch deep. They do not develop the velvety spots of scab. Peeling the fruit will remove most traces of the disease.

Prevention & Treatment: This disease is difficult to control, and chemical sprays are not practical for the home gardener. Varieties are available that are moderately resistant, but not immune. These varieties are 'Ambergem', 'Belle of Georgia', 'Cardinal', 'Cherryred', 'Dixired', 'Candor,' 'Challenger', 'Carolina Gold', 'Norman,' 'Loring,' 'Bisco', 'Southhaven' and 'Red Haven' in a yellow peach, and 'Southern Pearl', 'White County' and 'White River' in a white peach. Bacterial spot is usually more severe on poorly nourished trees or where nematodes are a problem, so proper cultural care is important.

Peach Leaf Curl

The peach leaf curl fungus, *Taphrina deformans*, can infect peach leaves, flowers, and fruit. Infected leaves pucker, thicken, curl and often turn red. Infected leaves eventually turn yellow and drop from the tree. Severe leaf drop can weaken the plant and reduce fruit quality. Fruit symptoms of raised, wrinkled areas, are often overlooked.

Prevention & Treatment: Control is impossible after the symptoms are visible. Fungicides applied before bud break give good control. Usually one dormant application is sufficient. This spray application must be at least a week following a dormant horticultural oil spray for scale and mite

control. If disease has been severe enough in the past to warrant chemical control, choose chlorothalonil or a copper fungicide. See Table 1 for brands and specific fungicide products. Apply all chemicals according to directions on the label.

Gummosis

This disease can kill branches or trees and is caused by the fungus *Botryosphaeria dothidea*. Earliest symptoms appear on the young bark of vigorous trees as small blisters, usually occurring at lenticels. Infection occurs late in the season, and may be apparent in the fall or the following spring. Some infected areas exude a gummy resin. Trees that are two or three years old often have sunken diseased areas (cankers) apparent on the trunk and major branches. Large amounts of gummy exudate, or gum balls, are associated with lesions at multiple sites. After repeated infections, the bark becomes rough and scaly.

Prevention & Treatment: There is no practical chemical control available. Keep trees healthy, since the most severely infected trees are water-stressed. Dead wood should be removed during winter pruning, and destroyed. When pruning during the summer months, remove and destroy all pruned wood. Where gummosis is present, use of captan or myclobutanil for scab control is the preferred treatment. See Table 1 for brands and specific fungicide products.

Powdery Mildew

This disease is primarily a problem on green peach fruit, but can also occur on leaves and young shoots. It appears as a powdery white coating on infected surfaces, and new shoots and leaves may be distorted. It is caused by the fungus *Sphaerotheca pannosa*. Young fruit develop white, circular spots that may enlarge. Infected areas on fruit turn brown and appear rusty. Symptoms usually occur on green fruit and disappear as the fruit develops.

Prevention & Treatment: Provide good air circulation to peach trees by thinning trees and following proper pruning practices. This disease occurs frequently when roses are nearby. Sprays with either myclobutanil, thiophanate methyl, or boscalid & pyraclostrobin can be used for powdery mildew control. See Table 1 for brands and specific fungicide products.

Crown Gall

This disease is caused by a soil-inhabiting bacterium, *Agrobacterium tumefaciens*, which infects many ornamentals in the home garden. The symptoms are rough, rounded galls or swellings that occur at or just below the soil surface on stems or roots. Young galls are light green or nearly white in color. As they age, the galls become darkened and woody and range in size from small swellings to several inches across. The galls disrupt the flow of water and nutrients traveling up from the roots and stems, thus weakening and stunting the top of the plant. Occasionally, the disease becomes systemic and the galls are seen above the ground.

Prevention & Treatment: There are no chemical controls available for crown gall in the home garden. For new plantings select disease-free plants that have no evidence of galls. The bacteria enter through fresh wounds, so avoid injury to the roots and crown (base) during planting and cultivating. Remove infected plants as soon as galls are observed. Disinfect all cutting and pruning tools that have been used near crown gall. To disinfect tools, dip them for several minutes in a solution of one part household bleach to nine parts water.

Phytophthora Root & Crown Rot

Root and crown rots are very important diseases that affect stone fruits. Trees often die within weeks or months of the first symptoms, but in other cases the decline is gradual, occurring over several growing seasons. The disease is caused by fungi in the genus *Phytophthora*, and is most severe in areas of poor drainage.

Infected trees have stunted shoot growth and leaves become sparse, small and yellow. Fruit will be small and sunburned. Shoot and scaffold limb dieback occurs as the disease progresses. Crown rot symptoms appear as black decayed areas on the root crown and/or trunk base near the soil line. Cankers that exude a gummy resin are often present. Root rot symptoms include few feeder roots being present with the remaining roots often decayed.

Prevention & Treatment: There is no chemical control available for crown and root rot in the home garden. The most important control strategy is careful water management. Try to plant your trees shallow, maybe even shallow on a 6" to 10" raised

bed. Do not overwater trees. Select well-drained sites for planting, and improve drainage of the existing location.

Oak Root Rot

Initially trees infected with the oak root rot fungus (*Armillaria* species) appear slow in growth rate, have shorter terminals and take on an off-color green. As the root rot gets closer to the root crown, the whole tree or significant portions of tree can collapse anytime during the year. There are no root sprouts present. Removing the bark beneath the soil surface reveals a white mantle of mycelium between the bark and the wood. The wood remains firm and intact.

Prevention & Treatment: There is no treatment or prevention once the tree is in the ground. Do not plant where oak trees have been removed. Do not replant with a peach tree or a susceptible species. Again, planting the tree shallow on a raised bed will help extend tree life.

Peach Tree Short Life

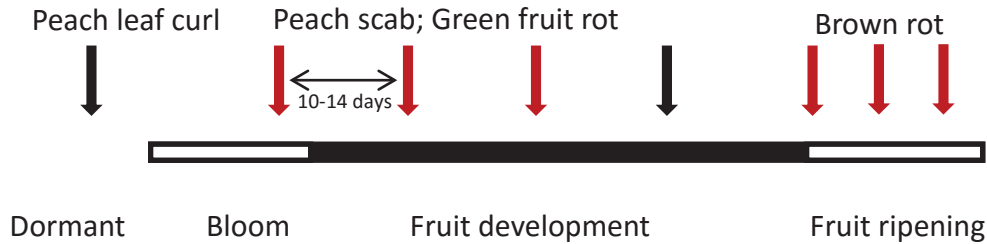
This is a disease caused by the ring nematode, bacterial canker organism (*Pseudomonas* species), fluctuating winter temperatures, pruning the wrong time of year and poor horticultural practices. Trees suddenly collapse shortly after leafing-out or prior to leafing-out in the spring of the year. Removing a piece of bark from the lower trunk has a characteristic sour sap odor. The root system appears healthy and frequently puts up a flush of sprouts.

Prevention & Treatment: Prune trees only in February and early March. Adjust the [soil pH](#) to 6.5 prior to planting and lime regularly to maintain this pH after planting. Select sites that are on heavier soils and are well drained. There is no nematode control after planting for homeowners. Select peach trees that use the variety 'Guardian' for their rootstock. 'Guardian' is more tolerant of the ring nematode.

Do not replant old peach tree sites with new peach trees. Where ring nematode is present plant Stacey wheat as a winter crop and sorghum as a summer crop at least one year in advance and two years is preferred. Fertilize to maintain at least 18 inches of new terminal growth per year. Remove all dead wood and dying branches as soon as possible.

Note: Control of diseases and insects on large trees is usually not feasible, since adequate coverage of the foliage with a pesticide cannot be achieved. Prune peach trees to a height of 8 to 9 feet.

Spray Schematic for Peaches



*Red arrows indicate important fungicide applications

*Black arrows indicate optional fungicide applications

Note: Insecticides need to be added to each application, except during bloom.

Table 1. Fungicides Labeled for Peach Disease Control.

Pesticide Active Ingredient	Examples of Brand Names & Products
Boscalid & Pyraclostrobin	Bonide Fruit Tree & Plant Guard Concentrate (also contains Lambda Cyhalothrin – an insecticide)
Captan	Drexel Captan 50W Bonide Captan 50% WP Southern Ag Captan Fungicide Arysta Captan 50% Wettable Powder Hi Yield Captan 50W Fungicide
Chlorothalonil ¹	Bonide Fung-onil Concentrate Hi-Yield Vegetable, Flower, Fruit & Ornamental Fungicide Concentrate Ferti-lome Broad Spectrum Landscape & Garden Fungicide Concentrate Monterey Fruit Tree, Vegetable & Ornamental Fungicide Ortho MAX Garden Disease Control Concentrate Tiger Brand Daconil Concentrate Southern Ag Liquid Ornamental & Vegetable Fungicide Concentrate
Copper Fungicides	Bonide Copper Fungicide (copper sulfate) Monterey Liqui-Cop Fungicide Conc. (a copper ammonium complex) Southern Ag Liquid Copper Fungicide (a copper ammonium complex)
Myclobutanil	Spectracide Immunox Multi-Purpose Fungicide Concentrate Ferti-lome F Stop Lawn & Garden Fungicide
Propiconazole ²	Monterey Fungi Fighter Ferti-lome Liquid Systemic Fungicide II Bonide Infuse Systemic Disease Control Martin’s Systemic Fungicide RTS ³
Sulfur ⁴	Bonide Sulfur Plant Fungicide Ferti-lome Dusting Sulfur (also wettable for spray) Hi-Yield Wettable Dusting Sulfur (also wettable for spray) Safer Brand Garden Fungicide Concentrate Southern Ag Wettable or Dusting Sulfur

Thiophanate-methyl	Cleary's 3336 WP Turf & Ornamental Fungicide
<p>¹Do not apply chlorothalonil within one week before or after a horticultural oil spray application. The maximum number of applications of chlorothalonil is 3. For example, make one application at bud break, a second spray after 10 days if conditions favor disease (at full bloom), and a final spray at shuck split to prevent infections on young fruit. Do <u>not</u> apply after shuck split.</p> <p>²Make no more than 4 applications of propiconazole; apply at 21 day intervals.</p> <p>³RTS = Ready to Spray (hose-end applicator)</p> <p>⁴Never apply a horticultural oil spray within 2 weeks of a sulfur spray, and do not apply sulfur when the temperature is above 90 °F or to drought-stressed plants.</p> <p>With all pesticides, read and follow all label instructions and precautions.</p>	

Revised by Guido Schnabel, Extension Plant Pathologist, Clemson University 03/16. Pesticides updated by Joey Williamson, HGIC Horticulture Extension Agent, Clemson University, 10/16. Originally prepared by Nancy Doubrava, HGIC Horticulture Specialist, R.W. Miller, Jr., Extension Plant Pathologist, and James H. Blake, Extension Plant Pathologist, Clemson University. New 05/99. Images added 3/15 & 3/16.

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