

Stone fruits (Peach, Plum, etc.)

Disease

Symptoms, source of inoculum and management of stone fruit diseases.

Disease	Symptoms	Source of Inoculum	Management
Armillaria root rot (<i>Armillaria</i> spp.)	Trees appear weak with small, yellowish leaves over the entire tree or confined to one or two branches. The entire tree or single branches may die by the end of the summer or the next year. White mycelial growth can be found beneath the bark of roots or base of affected trees at or about the time of death.	These fungi live in soil and survive for many years in old, diseased roots.	Dig up and burn old roots before planting peach trees. Remove dead trees and as many roots as possible. Fumigate before replanting.
Brown rot blossom blight and/or fruit rot (<i>Monilinia</i> spp.)	Occurs on all stone fruits. The brown rot fungus causes blossom and twig blight, fruit rot and canker. Affected blossoms turn gray or light brown and are covered with spores if wet weather prevails. The fungus may invade twigs from infected blossoms, causing twig blight or canker. Fruit infection normally occurs as the fruit near maturity. Small circular light brown spots develop on fruit, often at insect wounds or spots where scab or other diseases occur. These spots enlarge rapidly if the fruit is mature, often rotting the whole fruit. Eventually, the spots become covered with a brownish-gray spore mass.	The fungus overwinters in peach “mummies” on the tree or ground and in twig cankers.	Remove affected peaches from the orchard at harvest. Remove and bury any peach “mummies” remaining on the trees before spring. Do not just knock fruit to the ground. Destroy wild plum thickets, abandoned stone fruit orchards and fence row seedlings as far away as possible from producing trees. Follow the stone fruit fungicide spray program.
Bacterial spot (<i>Xanthomonas arbuticola</i> pv. <i>pruni</i>)	The disease occurs on leaves, twigs and fruit of almost all stone fruits. Leaf spots progress from grayish and water-soaked to deep purple, brown or black and are angular in shape. Spots fall out to give “shot-hole” appearance. Fruit are roughened with cracked, sunken spots. Small, thick-edged depressed spots occur on twigs and larger spots or cankers occur on branches or the trunk.	The bacterium survives from one year to the next in twig cankers and is primarily rain-splashed.	Obtain healthy, vigorous nursery stock free from bacterial spot cankers. Maintain vigorous growing conditions by proper cultivation and fertilization. Resistant varieties: La. Gold (immune), Bicentennial, La. Premiere (highly resistant), La. Feliciano, Sure Crop, Majestic, Ruston Red and Ouachita Gold.
Black knot (<i>Apiosporina</i> [= <i>Dibotryon</i>] <i>morbosum</i>)	This disease occurs on plum and cherry. Large, rough, coal black, hard swellings or knots occur along the branches, frequently several inches long.	The fungus survives in infected tissue of knots or swellings.	Prune and burn diseased branches during the fall or winter, making the cut at least 4 inches below the visible infection. Destroy badly infected trees. Remove wild plums in the vicinity of desirable trees.
Crown gall (<i>Agrobacterium tumefaciens</i>)	Occurs on many fruits including apple, pear, peach and plum. Affects roots and crown of host plant, causing galling of tissue and reduction in the movement of water and nutrients through the plant.	This bacterium lives in the soil.	Check planting stock for galls or swelling and rogue-infected plants. Treat before planting with Galltrol.

Disease	Symptoms	Source of Inoculum	Management
Peach leaf curl (<i>Taphrina deformans</i>)	This disease occurs only on peach trees. It has not been a problem in Louisiana, except on first-year trees. It apparently does not live over the summer here. In spring, when leaves first appear, they are thickened, and as they develop, the blades become puffed and folded with the edges curling inward so that the undersurface of the leaf is a series of concave chambers. Affected leaves become reddish or purplish, later becoming reddish-yellow and shedding.	The fungus lives from one year to the next on limbs or on the ground.	Monitor trees for symptoms. Apply fungicides if disease is confirmed.
Phony peach (<i>Xylella fastidiosa</i>)	Trees are dwarfed, foliage is abnormally green, and fruit remain small. Phony trees have short terminals and profuse lateral branching. Growth starts in the spring earlier than on normal trees.	This bacterium lives in infected trees of many species and is spread by xylem-feeding insects and root grafting.	Rogue out and burn all infected trees. Also, destroy wild plum and peach seedlings in the neighborhood of producing trees.
Rhizopus rot (<i>Rhizopus</i> spp.)	Normally an important postharvest disease of fruit only. Fruit breaks down quickly into a soft, watery rot after harvest and is covered with “whiskers” or raised white fungal growth with little black spores.	Spores are present in soil on organic matter and airborne.	Avoid wounding the fruit. Practice sanitation within and around the packing shed. Spray with Botran before harvest.
Rust (<i>Tranzschelia discolor</i>)	The disease occurs on leaves, twigs and fruit of almost all stone fruits. Brown pustules occur on the lower leaf surface, marked by a yellowish spot on the upper surface. It may cause leaves to drop prematurely, lowering tree vigor.	The fungus overwinters as mycelium in twigs or as spores on twigs or leaves clinging to the tree.	Follow the stone fruit fungicide spray program.
Scab (<i>Cladosporium carpophilum</i>)	The disease occurs on leaves, twigs and fruit of almost all stone fruits. Spots on fruit are small, circular, dark olive-greenish and usually about 1/16 to 1/8 inch in diameter. Spots may be distinctly separate or merge, giving a velvety blotch appearance to half or more of the fruit (usually on the attachment end). Spots are superficial but cracking or distortion of fruit may follow early or severe infection.	The fungus lives from year to year in infected twigs.	Prune to allow increased air circulation. Avoid low-lying planting sites. Follow the stone fruit fungicide spray schedule.

Table 1. Seasonal fungicide spray schedule for peach, nectarine, plum and other stone fruit.

This table was developed based on recommendations from the 2024 Southeastern Peach, Nectarine and Plum Pest Management and Culture Guide (<https://extension.uga.edu/publications/detail.html?number=B1171&title=southeastern-peach-nectarine-and-plum-pest-management-and-culture-guide>).

Developmental Stage	Pesticide Application Timing	Diseases
Dormant	After leaf fall and before bud swell	<ul style="list-style-type: none"> • Bacterial spot • Leaf curl
Delayed dormant	1-5% bud swell	<ul style="list-style-type: none"> • Bacterial spot • Leaf curl
Early bloom	Less than 5% bloom	<ul style="list-style-type: none"> • Bacterial spot • Leaf curl
Bloom	Full bloom	<ul style="list-style-type: none"> • Bacterial spot • Leaf curl
Postbloom	Petal fall to 1% shuck split	<ul style="list-style-type: none"> • Bacterial spot • Black knot • Scab
Postbloom	Shuck split to 10% shuck off	<ul style="list-style-type: none"> • Bacterial spot • Scab
Postbloom	7-10 days after shuck split spray	<ul style="list-style-type: none"> • Bacterial spot • Scab
Summer cover sprays	7-21 days interval, usually 14 days	<ul style="list-style-type: none"> • Bacterial spot • Scab
Preharvest	21 days before harvest	<ul style="list-style-type: none"> • Brown rot (only if disease pressure is high)
Preharvest	14 and 7 days (or less) before harvest	<ul style="list-style-type: none"> • Botrytis rot • Brown rot • Rhizopus rot
Postharvest fruit handling		<ul style="list-style-type: none"> • Botrytis rot • Brown rot • Gilbertella rot • Rhizopus rot

Table 2. Efficacy of selected fungicides against peach, nectarine and plum diseases.

This table was reproduced from the 2024 Southeastern Peach, Nectarine and Plum Pest Management and Culture Guide

(<https://extension.uga.edu/publications/detail.html?number=B1171&title=southeastern-peach-nectarine-and-plum-pest-management-and-culture-guide>).

Table Legend

Efficacy Rating	Abbreviation
Superior	6
Excellent	5
Good Activity	4
Fair	3
Poor	2
Suppression	1
No Benefit	-

The efficacy rating could be affected by resistance development. If resistance has occurred, use of fungicides in the same class would likewise show resistance, and a substitute fungicide should be considered for pathogen management.

No data is provided for products not labeled for the specific disease or if the efficacy is unknown. These ratings are benchmarks; actual performance will vary.

Chemical name	Product Names	Leaf curl	Bacterial spot	Blossom blight	Scab	Anthracnose	Red spot	Sooty peach	Brown rot	Rhizopus rot
oxytetracycline	Mycoshield, Fireline	-	3 ^R	-	-	-	-	-	-	-
azoxystrobin	Abound	-	-	-	4 ^R	4	-	-	4 ^R	-
trifloxystrobin	Gem	-	-	-	4 ^R	4	-	-	4 ^R	-
captan	Captan, Captec, etc.	-	-	2	4	3	-	2	3	1
chlorothalonil	chlorothalonil	4	-	3	4	-	-	-	-	-
coppers	various products	3	3 ^R	-	-	-	-	-	-	-
2, 6-dichloro-4-nitroaniline	Botran	-	-	1	-	-	-	-	1	2
	Ferbam	5	-	-	-	-	3	-	-	-
iprodione	Rovral	-	-	4	-	-	2	2	-	-
boscalid+pyraclostrobin	Pristine	-	-	5	4	4	-	-	5	3
penthiopyrad	Fontelis	-	-	4	2	1	-	-	4 ^R	1
pyraclostrobin+fluxapyroxad	Merivon	-	-	6	4	4	-	-	6	3
cyprodinil+difenoconazole	Inspire Super	-	-	5	3	?	-	-	5	?
fludioxonil	Scholar	-	-	-	-	-	-	-	5	4
tebuconazole+trifloxystrobin	Adament	-	-	3	4	3	-	-	3	2
azoxystrobin+difenoconazole	Quadris Top	-	-	4	4	3	-	-	4	2
sulfur	various	-	-	1	3	-	-	-	1	-
tebuconazole	Elite, Orius, Tebuzol	-	-	5	-	-	-	-	5 ^R	-
thiram	Thiram	3	-	-	-	-	3	-	-	-
flutriafol	Topguard	-	-	4	-	-	-	-	4 ^R	-
thiophanate-methyl	Topsin M, Thiophanate-methyl	-	-	4 ^R	4 ^R	-	-	-	3 ^R	-
pyrimethanil	Vanguard, Scala	-	-	4	-	-	-	-	-	-
fludioxonil	Scholar	-	-	-	-	-	-	-	5	4

Chemical name	Product Names	Leaf curl	Bacterial spot	Blossom blight	Scab	Anthracnose	Red spot	Sooty peach	Brown rot	Rhizopus rot
propiconazole	Orbit, PropiMax, Bumper	-	-	4	-	-	-	-	4 ^R	-
myclobutanil	Rally	-	-	3	-	-	-	-	1 ^R	-
fenbuconazole	Indar	-	-	5	2	-	-	-	5 ^R	-
metconazole	Quash	-	-	5	-	-	-	-	5 ^R	-
ziram	Ziram	3	1	-	1	-	3	3	-	-

^R Resistance (or occasional failure of control) has been observed in some southeastern states; thus, if control failure occurs, it could indicate resistance has developed.

Table 3. Recommended pesticides, rates and pesticide use restrictions for pear, nectarine, plum and other stone fruit.

Chemical Name	Product Choices ¹	Product Mode of Action Group (FRAC) ²	Rate ³	Maximum Use	PHI ⁴	Comments
aluminum tris	Alette	33	5 lb/100 gal	20 lb	NA	Controls collar and root rot caused by <i>Phytophthora</i> spp. Apply only to trees that will not produce fruit for 12 months.
azoxystrobin	Abound	11	12-15.5 fl oz	92.3 fl oz	0	See labels for application timings specific to each disease.
azoxystrobin	Willowood Azoxy 2SC	11	12-15.5 fl oz	92.3 fl oz	0	See labels for application timings specific to each disease.
azoxystrobin + difenoconazole	Quadris Top	11, 3	12-14 fl oz	56 fl oz	0	See label for application timings specific to each disease.
azoxystrobin + propiconazole	Quilt Xcel	11, 3	12-14 fl oz	56 fl oz	0	See label for application timings specific to each disease.
boscalid + pyraclostrobin	Pristine	7, 11	10.5-14.5 oz	72.5 oz	0	NA
captan	Captan 50WP	M4	4-8 lb	24-32 lb ai	0	See label for rates specific to each commodity and disease.
captan	Captan 80WDG	M4	2.5-5 lb	30-40 lb	0	See label for rates specific to each commodity and disease.
captan	Captan 4L	M4	0.75-1 qt/100 gal	24-32 qt	0	See label for rates specific to each commodity and disease.
chlorothalonil	Bravo Ultrex ⁵	M5	2.8-3.8 lb	18.8 lb	See label	Do not apply Bravo Ultrex or Echo 90DF after shuck split or before harvest.
chlorothalonil	Chloronil 720 ⁶	M5	3.1-4.1 pt	20.5 pt	0	NA
chlorothalonil	Echo 90DF	M5	2.25-3 lb	15.5 lb ai	See label	Do not apply Bravo Ultrex or Echo 90DF after shuck split or before harvest.
chlorothalonil	Equus DF	M5	2.8-3.8	16.9 lb	0	NA
copper hydroxide	Badge SC	M1	5-14 pt	63.4 pt	21	See label for application rates specific to each disease.
copper hydroxide	Badge X2	M1	3.5-7 lb	18 lb	21	See label for application rates specific to each disease.
copper hydroxide	Champ WG	M1	8-16 lb	36 lb	21	See label for application rates specific to each disease.
copper hydroxide	Champ Formula 2	M1	5.33-10.66 pt	49.6 pt	21	See label for application rates specific to each disease.

¹ Reference to commercial or trade names is made with the understanding that no discrimination or endorsement of a particular product is implied by LSU or the LSU AgCenter.

² Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

³ Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

⁴ Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

⁵ Other generic products include Daconil Ultrex and Ensign 82.5.

⁶ Other generic products include Bravo Weather Stik, Chlorothalonil 720SC, Docket WS, Echo 720 or Ensign 720 (do not apply after shuck split), Initiate 720, Equus 720SST and Daconil Weather Stik.

Chemical Name	Product Choices ¹	Product Mode of Action Group (FRAC) ²	Rate ³	Maximum Use	PHI ⁴	Comments
copper hydroxide	Kentan DF	M1	6-16 lb	18 lb	21	See label for application rates specific to each disease.
copper hydroxide	Kocide 3000	M1	3.5-7 lb	60 lb	6 app	See label for application rates specific to each disease.
copper hydroxide	Kocide 2000	M1	6-12 lb	51.4 lb	21	See label for application rates specific to each disease.
copper sulfate	Cuprofix Ultra 40 Disperss	M1	5-7.5 lb	45 lb	See label	Do not apply Cuprofix Ultra 40 Disperss after shuck split.
copper sulfate	Cuproxat	M1	10-20 pt	88.7 pt	21	See label for application rates specific to each disease.
copper sulfate	Top Cop with Sulfur	M1	0.75-1.26 qt/100 gal	See label	See label	See label for application rates specific to each disease.
copper sulfate + copper oxychloride	C-O-C-S WDG	M1	12-15.6 lb (dormant) 1-2.9 lb (bloom)	35 lb	See label	NA
cyprodinil	Vanguard WG	9	5 oz	30 oz	2	No more than 2 applications by air.
difenoconazole + cyprodinil	Inspire Super	3, 9	16-20 fl oz	80 fl oz	2	No more than 2 applications by air.
dicloran	Botran 75W	14	2 lb	5.3 lb	10	NA
fenbuconazole	Indar 2F	3	6 fl oz	48 fl oz	0	Do not graze livestock in treated areas or feed livestock cover crops grown in treated areas.
fludioxonil	Scholar	12	8-16 oz/100 gal	1 app	16 oz	Use as a postharvest dip to control brown rot, gray mold, Rhizopus rot and Gilberella rot. Dip for 30 sec and allow fruit to drain.
fenhexamid	Elevate 50WG	17	1.5 lb (alone) 1-1.5 lb (tank mix)	6 lb	0	NA
fluxapyroxad + pyraclostrobin	Merivon	7, 11	4-6.7 fl oz	20.1 fl oz	0	NA
iprodione	Iprodione 4L AG	2	1-2 pt	2 app	See label	NA
iprodione	Meteor	2	1-2 pt	2 app	See label	NA
iprodione	Nevado 4F	2	1-2 pt	2 app	See label	NA
iprodione	Rovral Flowable	2	1-2 pt	2 app	See label	NA

Chemical Name	Product Choices ¹	Product Mode of Action Group (FRAC) ²	Rate ³	Maximum Use	PHI ⁴	Comments
mefenoxam	Ridomil Gold SL	4	2 qt	3 app	See label	Soil application only. Apply to the soil to cover the entire root zone. Do not apply to trees under stress. Do not graze livestock in treated areas or feed livestock cover crops grown in treated areas.
metconazole	Quash	3	2.5-4 oz	12 oz	14	See label for application rates specific to each disease. Do not make more than two applications AFTER petal fall.
myclobutanil	Eagle 20EW	3	2-3 fl oz/100 gal	84-100 fl oz	0	See label for maximum application rates specific to each commodity.
myclobutanil	Rally 40WSP	3	2.5-6 oz	2.75-3.25 lb	0	See label for maximum application rates specific to each commodity.
oxytetracycline	Mycoshield	41	12 oz/100 gal	12 lb	21	Bacterial spot management only.
phosphite	Confine Extra	33	1-3 qt (foliar)	NA	0	See label for root dip and trunk injection rates.
phosphite	Fosphite	33	1-3 qt	NA	0	See label for root dip and trunk injection rates.
phosphite	Fungi-phite	33	1-2 qt	NA	0	See label for root dip and trunk injection rates.
phosphite	Helena Prophyt	33	2 pt	4 apps	0	See label for root dip and trunk injection rates.
phosphite	Rampart	33	1-3 qt	NA	0	See label for root dip and trunk injection rates.
propiconazole	Propiconazole	3	4 fl oz	20 fl oz	0	NA
propiconazole	Banner MAXX	3	2-4 fl oz/100 gal	see label	See label	Do not apply to trees that will bear harvestable fruit within 12 months.
propiconazole	Bumper 41.8EC	3	4 fl oz	20 fl oz	0	NA
propiconazole	Bumper ES	3	4 fl oz	20 fl oz	0	NA
propiconazole	Fitness	3	4 fl oz	20 fl oz	0	NA
propiconazole	Procon-Z	3	2-4 fl oz/100 gal	see label	See label	Do not apply to trees that will bear harvestable fruit within 12 months.
propiconazole	Strider	3	2-4 fl oz/100 gal	see label	See label	Do not apply to trees that will bear harvestable fruit within 12 months.
propiconazole	Tilt	3	4 fl oz	20 fl oz	0	NA

Chemical Name	Product Choices ¹	Product Mode of Action Group (FRAC) ²	Rate ³	Maximum Use	PHI ⁴	Comments
propiconazole	Topaz	3	4 fl oz	20 fl oz	0	NA
propiconazole	Willowood Propicon 3.6EC	3	4 fl oz	20 fl oz	0	NA
propiconazole + thiophanate-methyl	Protocol	3, 1	1.3-3.75	6.6 pt	1	See label for application rates specific to each disease.
pyrimethanil	Scala SC	9	9-18 fl oz	54 fl oz	2	Do not use on cherries.
sulfur	Liquid Sulfur Six	9	0.66-2.75/100 gal	See label	See label	NA
sulfur	Microfine Sulfur	9	40-50 lb	See label	See label	NA
sulfur	Microthiol Disperss	9	10-20 lb	See label	See label	NA
sulfur	Yellow Jacket Wettable Sulfur	9	40-50 lb	See label	See label	NA
tebuconazole	Elite 45WP	3	4-8 oz	3 lb	0	NA
tebuconazole	Orius 20AQ	3	8.6-17.2 oz	103 oz	0	The amount of Orius 20AQ depends on tree size and the amount of foliage present.
tebuconazole	Tebuzol 45DF	3	4-8 oz	3 lb	0	NA
tebuconazole + trifloxystrobin	Adament 50WG	3, 11	4-8 oz	32 oz	1	NA
thiophanate-methyl	Cercobin	1	21.8-32.7 fl oz	82.7 fl oz	1	NA
thiophanate-methyl	Incognito 4.5F	1	20-30 fl oz	80 fl oz	1	NA
thiophanate-methyl	T-Methyl 4.5F	1	20-30 fl oz	80 fl oz	1	Can only be applied to peaches and cherries during nonbearing years of new plantings and nursery stock
thiophanate-methyl	T-Methyl 70WSB	1	1-1.5 lb	4 lb	1	NA
thiophanate-methyl	Thiophanate methyl 85WDG	1	0.8-1.2 lb	3.3 lb	1	NA
thiophanate-methyl	Topsin 4.5FL	1	20-30 fl oz	80 fl oz	1	NA
thiophanate-methyl	Topsin M 70WP	1	1-1.5 lb	4 lb	1	NA
thiophanate-methyl	Topsin M WSB	1	1-1.5 lb	4 lb	1	NA
trifloxystrobin	Gem	11	1.9-3.8 fl oz	15.2 fl oz	1	NA
ziram	Ziram	M3	3.75-10 lb	40-72 lb	14	See label for rates specific to each commodity and disease.

The stone fruit section was revised October 2023 by R. Singh.