

Controlling Entomosporium Leaf Spot On Woody Ornamentals

Leaf spot caused by *Entomosporium maculatum* is a widespread and destructive disease of woody ornamentals in the Rose family (Rosaceae). Red tip photinia and other photinia species along with indian hawthorn are commonly damaged by Entomosporium leaf spot. Other hosts of this disease are loquat, flowering and fruiting pear, firethorn, hawthorn, Juneberry, mountain ash, and quince. Entomosporium leaf spot is most damaging to plants in home landscapes and nurseries following periods of frequent rainfall in the spring and fall.

Symptoms. Tiny circular, bright red spots on both the upper and lower surfaces of young expanding leaves are the first sign of Entomosporium leafspot. Large purple to maroon blotches, much darker than the surrounding healthy tissue, may be found on heavily diseased young leaves of photinia. On indian hawthorn, these blotches are bright red. Leaf spots on the mature leaves of most host plants have ash brown to gray centers with a distinctive deep red to maroon margin, while those on pears have a thin brown margin.

On heavily diseased leaves, the spots merge, forming large, irregular blotches. Tiny black specks, fruiting bodies of the Entomosporium leaf spot fungus, are often found in the center of each leaf spot. Spots similar to those on the leaves often develop on leaf petioles and tender shoots. Light infections usually cause little more than cosmetic damage, while severe infections often result

in early and heavy leaf drop. Severe defoliation not only slows growth but also increases plant sensitivity to environmental and cultural stresses.

Disease Cycle. Spots on the leaves, young shoots, and fallen diseased leaves are important survival sites of the Entomosporium leaf spot fungus. Masses of spores are released from the fungal fruiting bodies from late winter through much of the growing season. These spores are spread to healthy foliage by a combination of splashing water and wind. Symptoms will appear within 10 to 14 days after infection during warm, humid weather.

In nurseries, year-round problems with Entomosporium leaf spot often result from the combination of continuous plant growth, closely spaced plants, and overhead irrigation. Disease development is more seasonal in home landscapes. Leaf spot symptoms appear mainly during the spring growth flush on the younger leaves. The wetter the spring, the more severe the spotting and shedding of leaves. Little fresh damage is usually found during the summer months because mature leaves are quite resistant to infection and hot, dry weather slows disease spread and development. In Alabama's southern counties, this disease may also be active in home landscapes during warm, humid, weather from late fall through early spring.



Typical leaf spot symptoms on red tip photinia.

Control. In commercial nurseries, propagate clean plant material collected from disease-free stock plants. For the home, purchase plants showing no symptoms of Entomosporium leaf spot. Do not locate new plantings near established diseased plants. In both nurseries and landscapes, slow the spread of disease by spacing plants to improve air movement and speed evaporation of moisture from the foliage. Surface or drip irrigation is preferred to watering with overhead sprinklers. Schedule overhead irrigation between 2 and 6 a.m. or at midday to reduce the period of time the foliage remains wet. If possible, collect and discard fallen diseased leaves, an important source of fungal spores.

Currently, no selections of red tip photinia are resistant to Entomosporium leaf spot. In recent trials in Alabama, the indian hawthorn cultivars, 'Dwarf Yedda', 'Olivia', 'Indian Princess', 'Snow White', and *Raphiolepis x delacourii*, have shown excellent resistance to this disease. The recently

released cultivar 'Eskimo' reportedly also has good leaf spot resistance. Cultivars of Indian hawthorn that consistently have suffered severe leaf drop are 'Pinkie', 'Harbinger of Spring', 'Enchantress', 'Heather', 'White Enchantress', 'Springtime', and 'Spring Rapture'. The above cultivars are so sensitive to *Entomosporium* leaf spot that they may require routine preventive fungicide sprays to preserve their health and beauty in the landscape. No information is available concerning the reaction of cultivars of the other hosts of this disease.

Fungicides can provide effective protection from *Entomosporium* leaf spot. See Table 1 for a complete listing of fungicides cleared for disease control. Preventive fungicide sprays are needed all season in nurseries to ensure production of disease-free plants, whether *Entomosporium* leaf spot is present or not. In home

landscapes, routine fungicide applications on healthy plants are rarely needed unless diseased plants are nearby. For effective protection, apply fungicides about every 10 to 14 days from the bud break until all new foliage has matured. Fungicide applications may be resumed in the fall during periods of mild weather. In nurseries, a preventive spray program should run from bud break in early spring through the first hard frost in late fall. If winter weather is unseasonably warm, fungicide applications are suggested in the southern most counties in Alabama.

On partially defoliated plants, a rigorous curative fungicide spray program is often necessary to control *Entomosporium* leaf spot.



Indian hawthorn severely defoliated by *Entomosporium* leaf spot.

Weekly fungicide applications plus severe pruning to stimulate shoot development should restore the beauty of badly diseased plants. Once the plants have produced a healthy canopy of leaves, good sanitation and preventive fungicide sprays should keep the disease in check.

Table 1. Fungicides Recommended For *Entomosporium* Leaf Spot Control.

Fungicide	Rate		
	Homeowner (per gal.)	Commercial (per 100 gal.)	Labeled Host Plants
chlorothalonil			
DACONIL 2787 4.17F	2 t.	2 pt.	photinia
DACONIL ULTREX	-	1¼ lb.	firethorn
mancozeb			
DITHANE T/O 80W	2 t.	1½ lb.	photinia
FORE 80W	2 t.	1½ lb.	hawthorn
thiophanate-methyl			
3336F	-	10-20 fl. oz.	all
thiophanate-methyl + mancozeb			
ZYBAN 75W	2½ t.	1½ lb.	Indian haw-
DUOSAN 75W	2½ t.	1½ lb.	thorn, photinia
triadimefon			
BAYLETON 25W	-	½-1 lb.	photinia
triforine			
TRIFORINE EC 18.2E	-	12-18 fl. oz.	photinia

Key: t = tablespoon lb. = pound pt. = pint fl. oz. = fluid ounce

Pesticides are recommended for use only in accordance with label directions. Pesticide recommendations depend upon their registration with the Environmental Protection Agency and/or the Alabama Department of Agriculture and Industries. In the event of registration cancellation, a pesticide's recommendation is automatically cancelled. Contact county Extension offices for the latest recommendations and information on registration changes.



ANR-392

Austin Hagan, *Extension Plant Pathologist*, Professor, Plant Pathology, Auburn University

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Trade and brand names are used in this publication for information purposes only; no guarantee, endorsement, or discrimination among comparable products by the Alabama Cooperative Extension System is intended or implied.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

UPS, 10M09, Rev. 8:96, ANR-392