



## Leaf Blight of Hawthorn: *Diplocarpon mespili*

### Introduction

Hawthorn leaf blight, caused by the fungus *Diplocarpon mespili*, (conidial state = *Entomosporium mespili*) is also known as Entomosporium leaf spot. The conidial state of this fungus may infect and cause leaf spots on many species of plants, most in the rose family. The disease first shows up as a leaf spot in early summer. Some hawthorns are so severely infected that trees may drop all their leaves by mid-late August (Fig. 1). Diseased trees, weakened after a few years, succumb more easily to adverse weather conditions and other diseases. English hawthorn (*Crataegus oxyacantha*) and Paul's scarlet hawthorn (*C. oxyacantha* 'Pauli') are more susceptible to this disease than are other hawthorns.



Figure 1: Severe defoliation.

### Symptoms and Signs

The initial symptom is the appearance of small, angular red-brown spots up to 14 mm in diameter.

The spots form mostly on the upper leaf surface. Tissue immediately surrounding the spots may remain green while leaf tissue beyond that yellows. As the spots enlarge, they coalesce and blight the leaves, and infected leaves yellow (Fig. 2) and fall prematurely. In addition, lesions may develop on the twigs and branches. These lesions, called cankers, become elongated and sometimes girdle and kill the shoot resulting in dieback. With a hand lens, numerous tiny, black dots can be seen in the center of the leaf lesions after that tissue has died. These dots are fruiting bodies (acervuli) of the fungus.



Figure 2: Infected leaves.

### Disease Cycle

Two types of fruiting bodies are produced. The asexual state produces conidia (in acervulia) which cause infection. The sexual state produces ascospores in apothecia, but their role in producing infection is unclear. Both stages overwinter in infected leaves that drop to the ground. Conidia from dead leaves or

from twig cankers may be windblow--or rainsplashed to the newly emerging leaves and begin the infection process again. By mid July the fungus produces spores that cause more infections. Severely diseased leaves fall to the ground and, after a cold winter, serve as a source of infectious spores again the following spring.

fungicide applications may be necessary during rainy growing seasons. Plant resistant hawthorns such as cockspur (*Crataegus crus-galli*), Washington (*C. phaenopyrum*), Toba (*C. mordenensis* cv. 'Toba') or Lavalley's (*C. lavalleyi*) to avoid this disease.

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## Management Strategies

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As this fungus normally overwinters in dead leaves, gather and destroy or compost fallen leaves in autumn. Plants with dieback resulting from chronic defoliation and branch infections should be pruned to remove dead wood. Destroy or discard clippings. Disinfect the pruning tools between each cut by swabbing the blades with a solution containing 7 parts rubbing alcohol and 3 parts water. If needed, homeowners in New York State may be able to use some products containing the active ingredient chlorothalonil to treat this disease on small trees. Numerous Home Garden fungicide products may be registered for use in New York. Be certain any product used is labeled for this use, and follow label directions.

Additional products may be available for commercial applications. Commercial applicators should refer to the appropriate commercial pest management guidelines, or contact their local Cooperative Extension Office for more information on currently registered products. Apply the initial spray as flower buds are opening, and reapply twice more at 10 day intervals or according to label directions. Additional

**READ THE LABEL BEFORE APPLYING ANY PESTICIDE!** Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

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