

Cynipid Gall Wasp (Crypt Gall Wasp)

CAPE COD COOPERATIVE EXTENSION

HORTICULTURE PROGRAM

Pest: *Bassettia ceropteroides* (Bassett, 1900), *Callirhytis ceropteroides* (Melika & Abrahamson, 2002)

Order: Hymenoptera

Family: Cynipidae

Host: Black Oak (*Quercus velutina*) and Red Oak (*Quercus rubra*)

Description: Symptoms of infestation include lack of foliation in the spring, flagging of twigs in summer, and swollen twigs. Swollen twigs vary in size from slightly swollen to obvious. Exit holes made by the emerging wasps are often present on swollen twigs (Figure 1). Cankers likely caused by *Botryosphaeria sp.* are also often associated with infested trees. Formation of the gall chambers and exit holes created by emerging adults significantly disrupt the vascular system. Lack of foliation can be near 100% on heavily infested trees. Tree dieback may not appear until year 2 or 3 of infestation. Tree demise often occurs from the top of the tree downwards. By early summer, trees that lack initial spring foliage often produce epicormic growth, shoots growing from the trunk and large limbs (Figure 2). Flagging of shoots has been seen on some trees starting in July. Removing bark from swollen twigs will expose brown/black roundish chambers produced by the pest (Figure 3).

Life Cycle: There are hundreds of Cynipid wasp species in North America that form galls on oak. Little is known about *Bassettia ceropteroides* and at this time the lifecycle is not completely understood. It is thought that female wasps lay eggs in early spring before foliage is completely unfolded. The eggs hatch and larvae feed into the twig as the tree grows, forming an enclosed chamber. The larvae feed on nutrients within the enclosed chamber. The larvae mature into an adult female wasp, within the chamber. The female wasp then chews thru the twig to emerge on the surface. This stage of the lifecycle is thought to be asexual since only female wasps have been observed in twig galls. Nothing is known about the activities of the female wasp after emergence but it is believed to go thru another generation which has both males and females, possibly forming leaf galls.

Management: The organism *Bassettia ceropteroides* and the fungal organism *Botryosphaeria sp.* were found to be the major causal organisms of Black Oak Decline on Long Island, NY in the early 1990s. Results of a study done on Black Oak Decline concluded that trees that grew faster previous to infestation had less dieback than trees that grew slower previous to infestation. No specific controls resulted from the study or were developed to solve the decline. The severity of the issue had abated by the mid-1990s because the population of *B. ceropteroides* had crashed. Trees that suffer severe infestation are likely to have dieback but mortality is rare. Dieback may cause a tree to lose its aesthetic value or become a hazard, resulting in tree removal. Trees that are stressed (drought and defoliation) are more likely to have dieback. Steps should be taken to improve tree health on susceptible trees. Improving tree health may include avoiding drought stress, avoiding defoliation or other infestations, and improving fertility. There are insecticides labeled for control of cynipid gall wasps; however, no research trials have been conducted on this particular species of gall wasp.



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FIGURE: 1

Twig galls with exit holes



FIGURE: 2

Lack of foliation and epicormic growth



FIGURE: 3

Gall chambers in twig

