The Plant Doctor's LANDSCAPE TIPS

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Photo 1: Typical galls produced by the Oriental Gall Wasp, Dryocosumus kuriphilus,on chestnut (Castanea) species. *Photo credit: Michele Warmund, Professor of Horticulture, University of Missouri.*

Photo 2: Another gall caused by the oriental chestnut gall wasp. Report any suspicious symptoms of galls on Castanea species to the Michigan Department of Agriculture. *Photo credit: Michele Warmund, Professor of Horticulture, University of Missouri.*

Photo 3: Older galls of the chestnut gall wasp, after the adults have emerged. *Photo Credit: Michele Warmund, Professor of Horticulture, University of Missouri.*

Photo 4: Adults of the oriental chestnut gall wasp are small and measure only about one-eight inches. *Photo credit: Jerry A. Payne, USDA Agricultural Research Service, United States.*

ORIENTAL CHESTNUT GALL WASP

INTRODUCTION:

On May 17, 2010, the Michigan Department of Agriculture (MDA) issued quarantine against the Oriental Chestnut Gall Wasp, Dryocosumus kuriphilus Yasumatsu. This gall wasp was introduced into the U.S. on imported chestnut cuttings in the mid-1970's; it is native to China but is considered a major pest in Japan, Korea and other Asian countries. Subsequently, the gall wasp has been found in some eastern and southern states: Maryland, Pennsylvania, North Carolina, Georgia, Virginia, Tennessee and Alabama. More recently, it has been found in nearby Kentucky and Ohio.

Because Michigan has a burgeoning chestnut industry, utilizing new varieties of chestnut trees that are purportedly resistant to Chestnut Blight, the MDA believed it was necessary to implement quarantine measures for preventing chestnut gall wasp's introduction into Michigan. Living plants and all scion wood of all Castanea species and hybrids are regulated under the Michigan quarantine. It is very important that everyone in the landscape, nursery and forestry industries understand this pest to assist the MDA in combating its introduction and establishment in Michigan.

SYMPTOMS AND LIFE CYCLE:

Most species of chestnut are affected: American chestnut (Castanea dentata), Chinese chestnut (C. mollissima), Japanese chestnut (C. crenata), European chestnut (C. sativa) and Chinquapin (C. pumila). Detection of D. kuriphilus can be very difficult, and it can become established in an area long before it is recognized as a problem. Chestnut trees are adversely affected by this gall wasp because galls may develop on shoots, leaves and catkins (Photos 1-3). These galls suppress stem growth and limit nut production. In severe cases, tree branches or the entire tree may be killed.

Female adult wasps are small and measure only about 2-3 mm (one-eight inch) long (Photo 4). The females lay clusters of eggs in chestnut buds in the early summer after bud set for the following year. Several adult females may visit and oviposit as many as 20-25 eggs into a single bud. The eggs hatch in about 40 days, and larvae mature slowly (Photo 5). The insect overwinters as first instar larvae until the following spring. As bud growth resumes in the following spring, the larvae induce gall formation on leaves, stems, petioles and catkins where they feed on the inner tissues for about 20-30 days until they pupate. Galls are initially one-third to one-half inches in diameter and appear green or reddish in color. Adult wasps emerge in late May and early June; they may fly or be dispersed by wind for many miles distance where the cycle is repeated.

GALL WASP MANAGEMENT:

Because most Chestnut trees are propagated to grow nuts for human consumption, which is the case for Michigan's burgeoning chestnut industry, insecticide treatment is not a good option to manage this insect. The best approach is to support the MDA quarantine which will hopefully prevent the introduction of this pest into Michigan even though its eventual introduction into Michigan is probably inevitable, due to the difficulty of wasp gall detection and the insect's dispersal habits. If found in Michigan, aggressive measures will probably be initiated to prevent its establishment and further spread; these measure will probably include destruction and burning of infested chestnut trees or plant parts. Please report any suspicious symptoms on Castanea species to the authorities at the MDA.

Photo 5: Larvae of the oriental chestnut gall wasp as they might appear in a gall. *Photo credit: Jerry A. Payne, USDA Agricultural Research Service, United States.*

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