MISIN Midwest Invasive Species Information Network

Asian chestnut gall wasp

Dryocosmus kuriphilus

Description

First reported in the U.S. in 1974. It was observed on Chinese chestnut trees in Georgia after it was introduced on imported plant material. Over time, the geographic range has expanded. The gall wasp is now established in Virginia (2001), Ohio (2002), Kentucky (2003), Maryland and Pennsylvania (2006), Connecticut (2011), Massachusetts and Ontario (2012).Continued to spread across eastern North America by natural dispersal (e.g., adult wasp flight) and via human transport of infested plant material. The gall wasp was confirmed in Michigan in June 2015.

Identification

Adults are very small (2.5 to 3.0 mm). They have glossy black bodies with clear wings, and six orange legs. The abdomen is bulbous in shape, giving them an ant-like appearance. Yellow sticky traps may be hung to capture adults. Scouting for the galls caused by the gall wasp is

Source: MISIN. 2024. Midwest Invasive Species Information Network. Michigan State University - Applied Spatial Ecology and Technical Services Laboratory. Available online at https://www.misin.msu.edu/facts/detail.php?id=342.

the most common method of initial location. Visually inspecting for galls is one method of locating the gall wasp in the field. Scouting can take place at any time of the year as the galls persist on the tree even after the wasps emerge in early summer. Leaves often remain attached to the galls during the winter making them highly visible at that time.

Habitat

Native to Asia. All species in the genus Castanea (chestnut) are susceptible, including American chestnut (C. dentate), Chinese chestnut (C. mollossima), sweet chestnut (C. sativa), Japanese chestnut (C. crenata). Several species of native Chinquapins (also in the genus Castanea) are also susceptible.

Reproduction

One generation per year via asexual reproduction. Adult females lay eggs inside buds in early summer and eggs hatch soon after. After egg hatch, the larvae remain inactive until budbreak the following spring, when they induce the formation of galls. Galls can form on the stem, petiole, or leaf and provides the larvae and pupae protection. Adults emerge from galls in the early summer and locate new chestnut shoots,

laying eggs for the next generation. After the wasps emerge, galls become woody and dry out, potentially persisting on the tree for several years.

Impact

Causes globular twig, shoot, and leaf galls on actively growing shoots of all Castanea species. Galling reduces fruiting and nut yield, suppresses shoot elongation, reduces tree vigor and wood production, and can kill trees. Galling also prevents infested shoots from producing new shoot growth and flowers, thereby reducing or eliminating future production.

Similar

Adult females closely resemble the European oak cynipid wasp, Dryocosmus cerriphilus, known to induce galls only on Quercus cerris.

Monitoring and Rapid Response

Reporting new locations where the gall wasp is discovered is critical to an effort currently underway to evaluate a beneficial parasitoid (Torymus sinensis) biological control agent that reached Michigan last year, probably in infested chestnuts from out-of-state. This parasitoid has controlled the gall wasp overseas and in the southern USA. Biological control is the only tactic that has a chance to manage the gall wasp on a landscape level. To prevent the spread of the gall wasp, some states (including Michigan) have quarantines in place. Be sure to follow all import and export restrictions.

Credits

The information provided in this factsheet was gathered from Anagnostakis, S.L., Payne, J.A. 1993. Oriental chestnut gall wasp. NA-PR-02-93. Asheville, NC: U.S. Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry. Dixon, W.L., Burns, R.E., Strange, L.A. 1986. Oriental chestnut gall wasp, Dryocosmus kuriphilus Yasumatsu (Hymenoptera: Cynipidae). Entomology Circular No. 287. Gainesville, FL: Florida Department of Agriculture and Consumer

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