

## CHERRY BARK TORTRIX IN THE PACIFIC NORTHWEST – BIOLOGY AND APPLIED BIOLOGICAL CONTROL

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The cherry bark tortrix (CBT), *Enarmonia formosana* Scopoli (Lepidoptera: Tortricidae), was first detected in British Columbia, Canada in 1989. Since then it spread southward to Washington in 1991 and was found in Oregon for the first time in 2000. This insect is native to Europe, northern Africa and western Asia. Since introduction into the Pacific northwestern region, it has been found on various woody rosaceous plants. Unlike other leaf-rolling tortricids, CBT is a bark feeder. Larvae bore and tunnel under bark. Heavy or repeated infestations can girdle and subsequently kill trees. Some landscape and ornamental cherry trees were killed as a result of infestations. Because of the importance of woody rosaceous plants to landscape and nursery (also orchard) industries, CBT has become a serious threat in the region.

Naturally occurring *Trichogramma cacoeciae* Marchal (Hymenoptera; Trichogrammatidae) populations occur as an egg parasitoid on CBT in Bellingham, Anacortes and Seattle, WA. In July 2000, 50 parasitized CBT eggs were collected from cherry trees in Anacortes to establish a colony at Washington State University, Pullman. Mass production of this species is straightforward due to their genetically thelytokous nature. In 2001, field studies were conducted in Seattle to look at the dispersal, parasitism rates, and the overall efficacy of *T. cacoeciae* as a biological control agent for CBT. Our release program was greatly aided by the USDA APHIS PPQ agreement to utilize their Biological Control Laboratory in Niles, MI to mass-produce *T. cacoeciae*.

In 2001, field experiments in Seattle included weekly releases of *T. cacoeciae* to acquire data on their intra- and inter-tree dispersal dynamics. Sentinel traps baited with irradiated eggs of the Mediterranean flour moth were placed at certain distances from the point of release to measure how far *T. cacoeciae* disperses. Inter-tree dispersal appears to occur less, than intra-tree dispersal, supporting the idea that their dispersal is mostly by walking or hopping and not flying. Similar releases provided data on CBT egg parasitism, which ranged from an average of 55% to as much as 95% at certain sites.