

Pome Fruits—Biology

Lesser Appleworm

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The Japanese government has requested information on the lesser appleworm, *Grapholita prunivora* (Walsh) (Lepidoptera: Tortricidae), as a quarantine pest of apples from the western United States. The lesser appleworm has been reported as an occasional pest of apples in the eastern United States but has rarely been encountered as a pest in the West.

In 1990, we, in cooperation with the Washington Department of Agriculture, conducted a limited survey for the lesser appleworm in selected areas of Washington and Idaho. In 1990, lesser appleworm adults were trapped only in the Bellingham and Snohomish areas of western Washington and only in small numbers. No infested fruits were found.

In 1991, our survey was expanded to include the Walla Walla, Washington/Milton-Freewater, Oregon area of southeastern Washington/northeastern Oregon, where the lesser appleworm had been studied as a pest of prunes and other fruits in 1948-52 but had not been considered a pest since. Pherocon 1C traps baited with (Z)- and (E)-8-dodecenyl acetate were placed in thickets mostly composed of wild apple, hawthorn, and wild rose, each a reported host of the lesser appleworm. No traps were placed in orchards.

In our 1991 survey, as in 1990, a few lesser appleworm adults were again trapped in the Bellingham/Snohomish area of northwestern Washington. For the second year, no lesser appleworm adults were caught in the same apple tree locations in central Washington as in 1990.

Relatively large numbers of lesser appleworm adults were found in the Walla Walla/Milton-Freewater area. The first adult was trapped in the area the first week in May, when the traps were first placed. Flights in the area continued through October 22. Peak catches of 204 males per trap the first week of July and of 98 males per trap the third week of September were recorded. Our pheromone trap data indicate that there are 2 generations in the area. It was earlier reported from the studies using bait traps in 1948-52 that there were two complete, and sometimes a partial third, generations in the area.

It had also been earlier reported that lesser appleworm adults respond to dimalt bait traps. In an attempt to capture females, we tried both the standard molasses bait and a diastatic barley malt extract bait but caught no lesser appleworm with either bait.

While we caught relatively large numbers of lesser appleworm adults in these thickets, we found no concentration of larvae. Adults were reared from apples, hawthorn berries and wild rose hips but in small numbers.

A small laboratory colony has been reared to the third generation on immature apples and hawthorn berries. If we are able to maintain and increase this laboratory colony, we should be able to conduct the efficacy tests required to meet MAFF-Japan's import quarantine requirements for apples.

A second approach to meeting Japanese import quarantine requirements is the establishment of "lesser appleworm-free" areas. The Washington Department of Agriculture, in cooperation with the Washington apple industry, initiated a survey in 1991 for the lesser appleworm in apple orchards throughout the state where the growers wish to have the fruit considered for the Japanese market. Two consecutive years, including the current year, of no detection of the lesser appleworm will be needed to meet quarantine requirements.