

1. Thresholds/Monitoring/Sampling

UNKNOWN MOTH SPECIES ATTRACTED TO THE SEX PHEROMONE OF THE LESSER APPLEWORM AND ORIENTAL FRUIT MOTH

D. O. Hathaway and P. J. Landolt
Yakima Agricultural Research Laboratory, USDA-ARS
5230 Konnowac Pass Road, Wapato, WA 98951

M. Cooper and C. Braumiller
Idaho Department of Agriculture
Division of Plant Industries
Bureau of Feeds and Plant Services
P. O. BOX 790
Boise, Idaho 83701

The Idaho State Department of Agriculture has had an interest in a detection program for Oriental Fruit Moth (OFM) in Boundary County, Idaho and has conducted trapping with commercial OFM sex pheromone lures in an effort to determine if OFM are present. In 1996 approximately 500 lesser appleworm (LAW) moths were captured in these traps, confounding detection efforts for OFM.

In 1997 an experiment was conducted to compare two ratios of pheromone components for attractiveness to LAW and to determine if OFM were present. These two different pheromone ratios were determined by Roelofs and Carde (1974) to be optimum for LAW and OFM respectively. The objectives of the experiment were to determine if LAW responds preferentially to one ratio of the components, determine if OFM were in the area, determine the number of generations of LAW in Boundary County, Idaho and determine the seasonal flight pattern of LAW in that area.

Red rubber septa were loaded with one mg of pheromone to make lures for LAW (2.2% E-8-12:AC in Z-8-12:AC) and for OFM (6.4%E-12:AC in Z-8-12:AC). Lures were used to bait Pherocon 1C traps placed in abandoned apple, peach, and prune trees in areas with abundant wild hawthorn, the primary host of the lesser appleworm. Traps were set up at five such sites, with a pair of traps (one with the LAW lure, one with the OFM lure) at each site, hung in trees at a height of 1.7 meters. Traps were maintained from early June through August 1997, checked weekly, and lures changed every four weeks. Trap liners were shipped to Yakima where trapped moths were identified under a dissecting microscope.

Some moths were not identifiable because of a greasing effect of the stickum in trap liners over time. However, all identifiable moths were either LAW or a third, as yet unidentified, species. No moths captured were positively identified as OFM. Lesser appleworm moths were captured throughout the experiment, but with peaks in captures during late June and again in late July, possibly indicating two flights or generations (Figure 1-A). There was no difference in numbers of LAW captured in traps baited with the LAW pheromone ratio

the LAW pheromone ratio or in traps baited with the OFM pheromone ratio. Additional experiments are needed to determine the relationship between component ratio and LAW attraction, over a broad range of pheromone ratios.

A large number of moths of the third species were captured throughout much of the season, but with a preponderance capture in traps baited with the LAW pheromone. One peak in captures was evident with the species, not corresponding to the LAW (Figure 1-B). The size and shape of this species are close to that of OFM and LAW but the scale coloration is strikingly different. We are currently trying to determine the species of this moth.

Boundary County, ID 1997

Elevation - 800 Meters

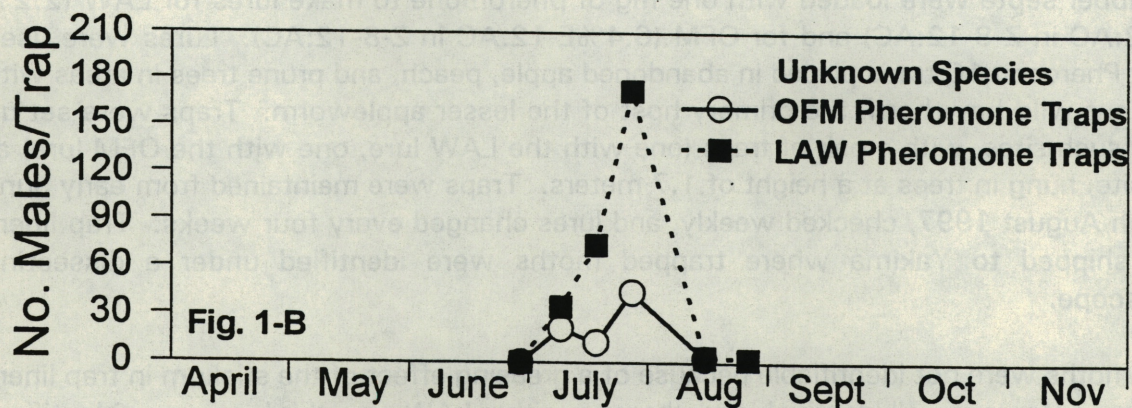
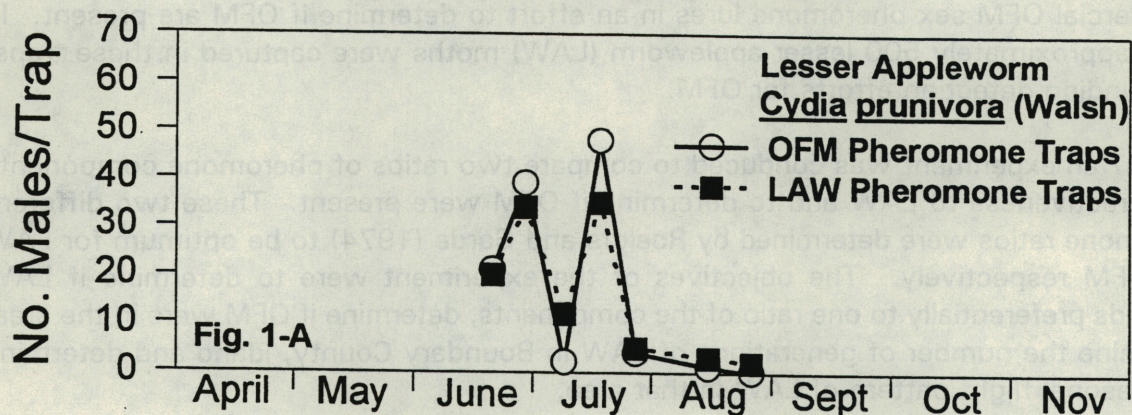


Figure 1. Capture of LAW males, and a unknown species of male moth.