

Thresholds, Monitoring and Sampling

EVALUATION OF A FOOD-BAIT LURE FOR MONITORING OF LACANOBIA  
FRUITWORM, *LACANOBIA SUBJUNCTA*

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A food-bait lure was developed by Dr. Peter Landolt for monitoring noctuid pests in orchards. The food-bait lure was a blend of acetic acid and isoamyl alcohol believed to be attractant specifically to noctuids. In previous tests the attractant was placed in “wet” traps where the moths were collected in a drowning solution. This was the first test of the noctuid attractant in a “dry” lure. Because of this development, the food-bait lure could be used in standard monitoring traps. This allowed for a direct comparison of the food-bait to a pheromone lure with all other conditions being equal. This attractant was deployed in general purpose bucket-style traps (Unitrap, Pherotech, Inc.) and placed in side-by-side comparisons with bucket-style traps baited with a lacanobia fruitworm pheromone lure (Scenturion, Inc.) Twelve orchards ranging from the Royal Slope area of Washington to Brewster were monitored. Orchards selected for study were thought to have lacanobia fruitworm populations based on previous studies. Furthermore, each orchard was chosen because of its history of reduced insecticide inputs. This was important in order to limit disruption to normal phenological development. One of the test orchards was also a lacanobia fruitworm mating disruption site (Lacanobia MD, 400 dispensers/acre, Pacific Biocontrol). A possible benefit of food-bait lures should be the ability to monitor plots with the same lure regardless of the presence of mating disruption products. Each of the bucket-style traps had a small piece (2x1 inch) of “kill-strip” (Hercon Vaportape, DDVP toxicant strip, Great Lakes, IPM) placed in the collection area. A fresh kill strip was placed at the start of each of the two generations. The pheromone lures were replaced every 6 weeks and the food-bait lures every 4 weeks. The traps were monitored every week and the total numbers of lacanobia fruitworm, bertha armyworm and spotted cutworm males and females were recorded.

### **Results and Discussion**

Lacanobia fruitworm were collected at each of the sites in both the pheromone and food-bait traps. Adult lacanobia phenology was closely correlated between the two lure technologies. The food-bait lures attracted lacanobia males and females in a 50:50 ratio average over the entire season. There did not appear to be a significant sex ratio difference either at the beginning or end of the flight period. The food-bait trap was not specific to the lacanobia fruitworm and attracted many noctuid species. Included in the samples were bertha armyworm and spotted cutworm. This monitoring system may be ideal for monitoring all three of these important orchard pests, although a certain skill level was required to differentiate the important pests from various other

noctuids present. The mating disruption product shut down pheromone trap catch for both the first and second generations. However, the food-bait traps in both treatments attracted *lacanobia* males and females at equal levels throughout both generations.

The development of a “dry” food-bait attractant that can be placed into the same monitoring device as a pheromone lure was an important innovation in 2000. These attractants appear to be capable lures for monitoring a variety of noctuid pests under all management practices. These lures should prove to be valuable tools for both research of male and female behavior as well as the practical application of developing consistent treatments and reliable thresholds based on trap catch. If this technology can be developed for all lepidopteran pests, thresholds could be developed that would be consistent whether mating disruption was used or not. It remains important to determine ideal release rates as well as the area of attractancy for non-pheromone baits to best utilize this new technology.