

Evaluation of Economic Thresholds for Alfalfa Weevil Control 2007

IPM/SA Mini-Grant Report

Project Title: Examining Traditional Economic Thresholds for the Control of Alfalfa Weevil in Established Alfalfa Stands

Project Leaders:

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Situation:

Many alfalfa producers have incorporated the practice of applying an insecticide such as 'Furadan' (*carbofuran*) as a preventative alfalfa weevil control. This application is often made early in the season before an alfalfa weevil infestation has been identified. Others apply an insecticide later in the season when weevil populations seem to justify treatment.

Three years of Utah data shows that weevil numbers collected per 180 degree sweep with a 15-inch net, are often below the generally accepted economic threshold used to justify an insecticide treatment. However, hay growers and crop consultants are observing that non-treated fields, especially after the harvest of first crop, are extremely slow to recover. As such, yields appear to be lower than what is observed in treated alfalfa fields.

As a result, we suggest a need to re-assess the generally accepted economic threshold of 20 larvae per sweep. The increasing value of quality alfalfa hay, ever changing costs of insecticide treatments, and potential impacts of insecticides applications on beneficial insect populations calls for an analysis of a defensible economic threshold. In addition to monitoring weevil populations, researchers must also collect yield data before an economic analysis can be made.

Objectives:

- 1) Assess the validity of the generally accepted economic threshold of 20 alfalfa weevil larva per 180 degree sweep with a 15 inch net.
- 2) Monitor production levels in established alfalfa fields, treated and control, by use of Rising Plate Meter's fitted with electronic accumulator counters.
- 3) Develop a response curve for alfalfa forage DM production as a function of insect populations in order to apply some economic projections in order to establish a threshold.

Results:

In order to collect yield data in alfalfa fields, four electronic Rising Plate Meters were ordered in February 2007 from Kencove Farm Fence Inc. As the order moved through the University system, we found we had raised a few “red flags” by not following exact University procedures. As such, there were delays in shipment and the Rising Plate Meters were not delivered until first crop hay was ready to harvest. Therefore, we did not have the yield data we needed for our study. We also found that we needed extensions on the meters to adequately measure the tonnage on tall alfalfa hay. One extension was ordered, which proved to be useful. We will likely need to order 3 more extensions for the 2008 season.

Because we did not have data from first crop alfalfa we simply experimented with the meters to determine yields for second crop alfalfa. Since the Rising Plate Meters are designed to measure pasture height and density, we are not totally convinced that the charts and equations used in the documentation manual are valid for alfalfa. As such, we will likely need to order some clippers and quadrants to properly calibrate our instruments. We think we are far enough along in the process now to be ready for data collection during the 2008 season.

We very much appreciate the availability of IPM/SA funding to help implement sustainable agriculture knowledge across the state of Utah. We wish our report was more impressive than it is. We think we will have a better report at the end of the 2008 season.