

Evaluation of Preventative Alfalfa Weevil Control 2006

IPM Mini-Grant Proposal

Project Title: The Evaluation of Furadan as a Preventative Insecticide on Alfalfa Weevil

Project Leaders:

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Situation:

Many alfalfa producers have incorporated the practice of applying the insecticide 'Furadan' (*carbofuran*) as a preventative alfalfa weevil control. This application is made early in the season before an alfalfa weevil infestation has been identified.

Research has been done in this area in 2004 with trials conducted in fields in Box Elder and Weber Counties showing that early applications of Furadan were effective in reducing weevil numbers. However, the weevil populations never reached levels high enough to warrant control of the alfalfa weevil.

In 2005, the early Furadan treatment was effective in reducing the alfalfa weevil larvae and adult populations. However, of the twenty six "control" field evaluations completed in 2005, only eight had twenty or more larvae per sweep or had reached the economic threshold level to warrant spraying. All of the twenty five treated field evaluations had less than 20 larvae per sweep throughout the growing season. We note that the spring of 2005 brought an unusual amount of precipitation and delayed 1st crop harvest which may have produced non typical results for the year.

We would like to do a third and final year on this study to solidify the information we currently have before we print our results and make our presentations to growers, chemical dealers and other agents.

Objective:

- 1) Verify the 2004 and 2005 results which showed that the early application of Furadan was effective in reducing alfalfa weevil populations.
- 2) Verify that in most years, a majority of the alfalfa fields do not need to be sprayed with an early application of Furadan for alfalfa weevil because they do not reach the economic threshold level.

Procedures:

Trials this year will be established in Box Elder, Millard, Beaver and Cache counties. Each agent will select fields for sampling that have an alfalfa stand that is two to five years old. Six fields (greater than 5 acres) will be monitored in each county with close proximity to each other. Half of the fields will receive the early season application of

Furadan (done by the producer or a commercial applicator), the other half will not be treated early (the Control Treatment). However, they may receive an in season treatment with an insecticide if alfalfa weevil populations are over the 20 larvae per sweep threshold. This would be done by the individual producer if they choose to apply the pesticide or not.

* Treatments

- 1) Preventative Treatment (application of Furadan in early spring approximately 60 days prior to first harvest)
- 2) Conventional/Control Treatment (application of Malathion or other insecticide labeled for weevil control if/when needed as shown in sweep net counts.)

* Sampling

Alfalfa fields will be sampled by the Agent for alfalfa weevil at least twice before the first cutting and twice before the second cutting. The first sampling will take place when the alfalfa reaches 8 to 10 inches and second sampling will take place when the hay is 18-22 inches.

Each monitoring session will consist of counting the adult weevil and weevil larvae found in five sub-samples from each field replication (see Diagram #1). The sub-samples will be collected by taking ten 180° sweeps with a 15 inch sweep net thru the top of the foliage (like the previous two years procedures). We will meet at one face-to-face meeting (Annual Conference) to make sure each agent will be collecting the samples the same way and to answer any questions.

Training and Educational Materials to be Produced

Mike will take the lead in writing the report and the publication in cooperation with the other agents. All agents will assist in producing the PowerPoint presentation and getting the information out to the clientele. The impact of this project has the potential to save growers thousands of dollars each year in pesticide costs and reduce the amount of pesticides being sprayed each year for alfalfa weevil control. A printed color bulletin highlighting the 3-year study and the conclusions of the trial will be published and distributed to each County Extension Office in Utah. It will also be placed on the USU Extension webpage. It will include such items as dollars saved, increased profits, reduced pesticide applications and other findings from the research. Results of the study will be presented at Utah Hay and Forage Symposium for hay producers (125 participants), Ag Agent Annual and Regional Meetings (75 agents) along with county crop schools and grower meetings (500 plus participants) that request it. Agents can then use the information to educate and train growers in sampling for economic threshold levels for alfalfa weevil and that they should only spray when the populations reach this level. This information can also be shared with local chemical dealers. The PowerPoint presentations and report will also be made available on the IPM website.

Budget for 2005:

Travel		
Project leaders- 4 agents @ 500 miles each = 2,000 miles @ \$0.37 /mile =		\$740
Wages		
Stipends for Agents – 4 @ \$200 each		\$800
Publication Costs – 500 copies of a two page color brochure		<u>\$350</u>
	Total Expense	\$1,890

Diagram #1

