

Utah State University Extension
Integrated Pest Management
Mini-Grant Report
October 29, 2004

Optimal Codling Moth Control in Cache County Orchards
Through Insect Trapping and Utilization of a
Degree Day Model for Pesticide Application

Project leaders and producers:

Loralie Cox, USU Horticulturist, Cache County

Diane Alston, Extension Entomology Specialist

Shawn Steffan, IPM Project Leader

Mark Ashcroft, Producer

John Schoonmaker, Producer

Ron Zollinger, Producer

The objectives for this IPM project were to monitor diverse orchard sites in Cache Valley for Codling Moth, collect temperature data from the sites and apply it to a degree-day model to identify optimal pesticide application, and educate producers and homeowners of the benefits of an IPM strategy to control fruit tree insects.

Three producers in the valley participating in the study last year were willing to take part this year as well. Through grant money, I was able to purchase max/min thermometers, sticky traps, and codling moth pheromone; as well as pay mileage for a Master Gardener volunteer to travel to Zollinger's orchard to collect daily temperature data.

In February the producers were invited to meet at the Northern Utah Fruit Growers Meetings in Brigham City. Diane talked with the producers about changes with current pesticide products and use. Supplies were distributed to the producers at the meeting or individually with instruction to place the traps in the orchard and begin taking temperature readings beginning in April. All of the orchards in had traps out and began catching moths the end of April.

Sheets to record weather data were supplied to the producers with columns for the date, moth counts, high and low temperatures, and spray dates. Jim Petersen, Master Gardener, collected data from Ron Zollinger's orchard and routinely brought the information into the Extension office. Mark Ashcroft brought them in bi-weekly. The data was then put on a spread sheet and degree days were computed using the graph provided by Diane. Shawn Steffan, IPM project leader, also collected data from John Schoonmaker's orchard and applied it to the computer model for comparison.

The first application of pesticides is applied when 250 days have elapsed following biofix. About ten days before the anticipated date, I included the first cover spray date in my bi-weekly newspaper article and relayed the date to Master Gardeners and secretaries in the Extension office answering phone calls. Home owners with access to email were placed on a list and were notified of the first spray date. Shawn collected data from John Schoonmaker and included his projected spray dates on the state IPM internet site. Spray date for the second cover spray was distributed the same way.

Producers continued to collect temperature data and watch the moth traps to observe the number of insects in the orchard through the end of July. Late spring frosts had a significant impact on the apple crop in the past few years, but for the summer of 2004 there was an abundance of apples in orchards and home landscapes.

The information for codling moth control was shared with the public through the newspaper, phone calls to the Extension office, the diagnostic clinic at the Gardener's Market on Saturday mornings, public speaking assignments, and the new publication, *Garden Utah!*, distributed through the nurseries, garden centers and libraries along the Wasatch Front and Cache Valley. Maggie Wolf and myself collaborated on this publication as a way to communicate current horticulture issues. The April/May issue highlighted IPM practices and included information for Codling Moth control, especially directed to home gardeners. The Master Gardener training also covered the subject of fruit tree pests and an abbreviated version of how it can be accomplished by monitoring temperature and trapping.

Accumulating several months of temperature data, establishing a bench mark of pesticide application by local producers for codling moth, establishing the new *Garden Utah!* publication and continuing lines of communication between producers and myself are the major accomplishments of the project for this year.

Grower	<u>Biofix</u>			<u>Pesticide applications</u>		
	2002	2003	2004	2002	2003	2004
Ashcroft	5/17	5/17	4/27	None applied	None	6/5 7/16 7/31
Hamson	5/14	5/2	5/7	Guthion/procure 7/1 Guthion 7/25 Guthion 8/16 Guthion		
Schoonmaker	5/15	4/26	4/30	6/11 Guthion 7/10 Guthion 8/8 Guthion	5/29 Imidan/Bayleton 6/19 Imidan/diazinon 7/22 Imidan	5/24 6/17
Weeks	5/17	5/13		None applied	None	
Weidman	5/15	5/14		6/8 Guthion 7/12 Imidan	None 8/12 guthion	
Zollinger	5/17	5/12	4/27	Not reported	5/27	5/7 fungicide 5/24