

The Effectiveness of New Homeowner Products and Techniques for Controlling Codling Moth Larvae in Backyard Grown Apples

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Situation Statement:

Many homeowners in Box Elder County and the state of Utah enjoy raising their own apples for fresh eating, baking, and preservation. One of the last things they want to find is that most of apples have worms (codling moth larvae) in them. To prevent this from happening, they want to know when to spray their apples and what to spray them with in order to keep them worm free. In the process, they are always looking for better and easier ways and sometimes none chemical ways to minimize the damage from this insects.

To successfully control codling moth in apple trees, larvae must be prevented from entering the fruit. In commercial orchards, pheromone traps are placed in the orchard to monitor for the presence of adult insects. Commercial orchardists or other agencies will collect high/low temperatures determine the period of time required for the eggs to hatch and know exactly when controls must be applied prior to a specific degree day. This degree day information is vital to applying fruit protection and must be made for each of the 3 to 4 generations of codling moth per year in Utah.

Most USU Extension offices give out recommendations for cover sprays or fruit protection to the homeowners based on information they receive from University specialists and their pest allerts. Many times we do not have experience with the recommendations we give out for controlling codling moth. We need to be able to give home owners information about products that are more effective, easier to apply or sometimes none chemical ways to minimize the damage from codling moth.

Objective:

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Procedure:

We have an older orchard in Honeyville that the owner is no longer maintaining and we will place all of the treatments in this orchard (we are pursuing one or two other commercial orchards to assist with this project as well). We will also have smaller home orchards that we will use to apply one or two of the other treatments in. We will purchase insect pheromone traps for codling

moth and place them in the orchards. Through monitoring the active adult moths we will get our biofix date for the areas. We will use minimum/maximum thermometers to collect the degree day totals for all the sites. We would like to purchase two additional minimum/maximum thermometers so we may have one at each site monitored. Degree-days will be collected and insect monitoring will be checked by the homeowner with supervision by the Extension office staff. When the biofix and the required degree day units are met, the homeowners will apply the treatments in their orchards and we will apply the treatments in the Honeyville orchard. We will select 6 trees to apply each treatment to in this orchard. The number of trees treated in the homeowner orchards will be based on how many trees they have.

We will continue each treatment throughout the growing season based on the recommendations of the chemical or product label. At the end of the growing season, we will harvest 100 apples per treatment per site and compare them to the various treatments. We will also compare the ease of application and the time required to make the application to the percent control we achieve with the various products.

Educational Materials Produced

A bulletin will be written to summarize our research and will be shared with other Extension offices in the state. The information can be presented at state association meetings, Master Gardener presentations and trainings and similar horticulture meetings. We will also use this information in our horticulture and gardening classes each year along with putting it on our home orchard hotline and give it out in our verbal recommendations from the office. The final report and presentation will also be posted on the IPM webpage for other interested individuals to access.

Budget:

What	Quantity	Price	Total
Minimum – Maximum Thermometers	2	\$40.00	\$ 80.00
LPD Traps	10	\$3.50	\$ 35.00
Replacement Liners	40	\$0.75	\$ 30.00
Pheromone Lures (L2)	15	\$1.40	\$ 21.00
Travel Expenses	2000	\$0.30	\$600.00
Sprayer – Solo model 432	1	\$550.00	\$550.00
Last Call™ CM, 150 g dispensers + shipping	2	\$120.00	\$ 240.00
Apple Bags		\$20.00	\$20.00
Merit Insecticide – 64 fl oz	4	\$35.00	\$140.00
Malathion – 16 oz bottle	3	\$20.00	\$60.00
Cyd-X – (this is the smallest amount they sell of this product. We would like to get some FREE for this project if anyone has a contact for it.)	1	\$300.00	\$300.00
Spinosad – Garden Insect Spray (Monterey) (pint)	3	\$20.00	\$60.00

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