

Home Orchard Management Through Education, Insect Trapping and Utilizing Degree Day Model to Assist in Spray Recommendations in Box Elder County

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Situation Statement:

Box Elder County is known in Utah for its Famous Fruit Way where orchardists produce peaches, apples, sweet and tart cherries, apricots, pears and other tree fruits. Besides the commercial orchards, we also have a lot of home owners with fruit trees from the south end of the county to the north end. In the south end of the county, Willard and Perry area, we are seeing an influx of growth as many orchards are being replaced with homes. Many of these homes are using existing fruit trees for their own uses. These trees along with the other small home orchards in the area can create breeding ground for insects that travel to commercial orchards and increase the chance of insect damage to their fruit and increase the chances of them having to spraying their orchard.

Many home owners do not know how or when to prune their trees, when to apply dormant oils and what insecticides to use to protect the fruit and the trees from insect damage. In many cases, the USU Extension office has to base their recommendations for spraying schedules from the insect traps and biofix dates we have in the Willard and Perry areas of the county. Because of the difference in growing conditions and elevations, many of the spray dates for the northern part of the county are incorrect. We need to be able to give home owners up-to-date information on how best to manage their fruit trees and apply timely insecticides for the control of major insects in the area; namely Codling Moth, Peach Twig Borer, and Western Cherry Fruit Fly so that they do not host the insects commercial orchards are trying to minimize the damage from.

Objective:

We propose a program be implemented in Box Elder County to instruct home owners with fruit trees on proper management practices. This instruction would cover: 1) basic pruning techniques; 2) educating them about fruit tree pest management and integrated pest management programs; 3) educating them about properly timing insect sprays based on degree-days and biofixes; 4) determining the biofixes of Codling Moth, Peach Twig Borer, and Western Cherry Fruit Fly for the Tremonton, Honeyville, Deweyville and Brigham City areas with the use of pheromone traps and biophenometer data loggers; 5) create a fact sheet with an up-to-date lists of pesticides and organic control methods for home owners for Codling Moth, Peach Twig Borer, and Western Cherry Fruit Fly.

Procedure:

We will set up and teach classes in each of the different communities (4-5 total) to discuss home orchard tree care such as pruning techniques, applying dormant oils and pesticides, fruit tree insects and diseases and IPM. We will purchase insect pheromone traps for the insects listed above and will have home owners who are willing to work with us, collect data in their respective towns or cities. We will have a meeting with these volunteers to explain when to set the traps out, how to install the traps correctly and how to collect the data. They will then report the information (first flights or catches) to the USU Extension office and we can determine when they should spray for the insects. Two biophenometer data loggers will be purchased and positioned in the Tremonton area and the Deweyville/Honeyville areas to collect degree-day information for the north end of the county. Two existing biophenometer data loggers would be used in Perry and Willard areas to collect data. Degree-days will be collected and insect monitoring would be checked daily, by the homeowner, to determine the biofix. Critical information on spraying periods for the home owners will be updated weekly or daily when we are approaching the biofix on a homeowners hotline, Extension web site and newspaper articles.

Budget:

Biophenometer data loggers	\$ 800	(2 @ \$400 each)
Pheromone Traps and Lures	\$ 230	(10 pheromones @ \$3.50 each for Codling Moth, Peach Twig Borer and Western Cherry Fruit Fly) (35 wing traps @ \$3.20 each)
Pruning Equipment	\$ 250	(1 pruning shears, 1 lopper, 1 folding saw, 1 pole saw)
Publishing Costs	\$ 75	
<u>Travel Expenses</u>	<u>\$ 225</u>	
Total	\$ 1,580	

Summary:

This program, when implemented in Box Elder County, will benefit both the home orchard grower and the commercial businesses that line the Perry and Willard highway. As of now no insect monitoring information has been available for Brigham City or the Tremonton areas. This program will enable these communities to protect their fruit trees with better accuracy. The education of the home growers will limit the amount of pesticides they are applying, increase their knowledge of orchard management, determine biofixes for their areas and give them a list of current pesticides they can use in their orchards. The education and information we give home owners will ultimately help the commercial growers and create a safer environment with less pesticide usage.