

Tree Fruit Research & Extension Center (Wenatchee, WA)

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Introduction

Washington State University's Tree Fruit Research & Extension Center is an institution dedicated to the tree fruit sciences. The Tree Fruit Research & Extension Center was established more than 70 years ago in Wenatchee, WA which has become the center of one of the primary production areas of the world. The research center focuses on orchard culture, pest control, fruit harvest, fruit maturity, and fruit storage. The research and educational programs of the Tree Fruit Research Center have contributed substantially to the growth, stability, and present stature of Washington's tree fruit industry. Currently, the research center has test blocks around Wenatchee, which they use to test new products and innovations. Every summer, the Tree Fruit Research & Extension Center offers high school and college students the opportunity to work alongside professionals in the fields of entomology, horticulture, soil science, and organic agriculture. This summer of 2012, I had the opportunity to work alongside Entomologist Jay Brunner and technical assistant Keith Granger on research projects that are aimed at bettering the Tree Fruit Industry in both mechanical and pest management aspects.



Resistance Bioassay Tray Set-up
This bioassay consisted of dipping Red Delicious leaves in different concentrations of Entrust (organic insecticide) for 5 seconds. After the leaves were dry, they were cut into leaf discs. After 7 days, we checked our results. For the Leaf Dip Bioassay, the susceptible colony would not survive at concentrations greater than 0.5 ppm Entrust; whereas, the resistant colony would survive at a concentration of 300 ppm Entrust.



I'm picking leaves off Gala apple trees that had been sprayed with *Bacillus thuringiensis* (Bt). These leaves were then later used for the (Bt) bioassay. The purpose of this bioassay was to test the effectiveness of Bt on the control of Obliquebanded Leafrollers. 10 leaves from each of the tree zones were collected. The tree zones included the top, middle, and bottom on both the east and west side of the tree.

Job Duties

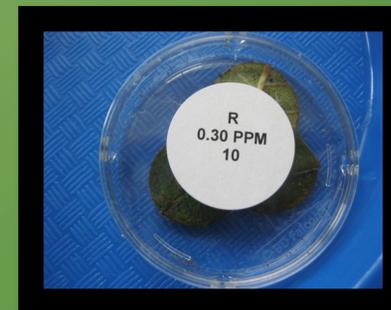
- Setting up *Bacillus thuringiensis* (Bt) bioassay
- Conducting Entrust (Organic Insecticide) resistance bioassay
- Collecting Leaves
- Making paper bag & Petri dish labels
- Analyzing Data & Creating Graphs
- Helping Set up Solid Set Canopy Sprayer
- Checking Codling Moth traps
- Pulling Obliquebanded Leafroller pupae
- Transferring Obliquebanded Leafroller larvae



Since a large percentage of my experiments were focused on pest control, I spent most of my time in the Entomology labs.



Obliquebanded Leafrollers are Primary Insect Pests that Damage the fruit and foliage of apple trees. These leafrollers were used in the Bt Bioassay, the Diet Resistance Bioassay, and the Leaf Dip Bioassay.



(Resistance Bioassay) Each Petri Dish was Labeled with the leafroller Colony (Resistant or Control), the Insecticide concentration, and the Petri Dish number.



Solid Set Canopy Delivery Sprayer (Sunrise Orchard, WA)
This system consists of installing a sprinkler delivery system in the canopy of the tree. Once the sprinkler system is installed, a mobile sprayer is hooked up and the pressure created by the mobile sprayer activates the sprinklers. After the sprinklers activate, it only takes 12 seconds to spray that portion of the orchard.

Summary

After completing my bachelor's degree in Integrated Plant Sciences this upcoming spring, I plan on becoming an Orchard Consultant in the Wenatchee area. The knowledge and skills I gained from working at the Tree Fruit Research and Extension Center will greatly benefit me because the people I met through this internship will be valuable resources as I seek employment or advise. The people I worked with were knowledgeable in the fields of Entomology and Horticulture, which are some of the main components in agriculture. The knowledge and skills I gained from working with the new programs and technologies offered here will also place me above the competition as I seek a career this coming spring. I would highly recommend an internship to people going into the field of agriculture because you meet new people, gain knowledge and skills, and get the opportunity to put into practice the things you've learn in school.