Quarterly Highlight for Fruit Pest Management – Janet van Zoeren

Optimal Timing for Orchard Herbicide Applications

Background:
Weeds compete with fruit trees for water and nutrients, and their presence in the orchard can slow tree growth, increase disease pressure, and provide habitat for mammal pests. The industry standard for managing orchard floor vegetation consists of a mowed sod middle with a weed-free strip maintained by herbicides in the tree row. However, there is not yet sufficient research to show the optimal timing and use of pre-emergent vs post-emergent herbicides throughout the season.

A traditional weed management approach consists of a spring preemergent application, followed by post-emergent applications as necessary. However, timing a spring herbicide application can be tricky in wet springs, and when other time-sensitive orchard tasks may take priority. Studies conducted by Debbie Breth showed that a fall pre-emergent application can provide excellent long-term control of weeds into the spring. However, there is not yet adequate information to inform growers of in which situations the spring timing vs the fall timing is appropriate.

Post-emergent herbicides are generally used to keep things clean throughout the season. However, these post-emergence products may cause trunk injuries or foliar damage if herbicide drifts up to contact low branches.

Need/Opportunity:
Because there is not yet sufficient information about the differences in weed control and tree health between the spring vs fall pre-emergent timing, there is a need to set up plots to monitor the impacts of these differing timings on weed density and diversity, tree growth and development, and soil quality. This information will help growers develop their own weed management programs that will provide adequate weed suppression during the critical growth period, while minimizing the potential negative impacts of regular herbicide use.

LOF Response:
In collaboration with Mike Basedow (CCE-Eastern New York Commercial Horticulture program) we have been funded on an Apple Research and Development Program grant to set up research and demonstration blocks to trial the spring pre-emergent, the fall pre-emergent, and a post-emergent only herbicide regime. The trial plots were set up in the spring of 2020, and throughout last year baseline weed abundance and distribution data was collected. Treatments were first differentiated in the fall of 2020, when only one set of trees received a pre-emergent application of Matrix, Alion and Glufosinate. Another set of trees received the same application in the spring of 2021. During the summer of 2021, we will apply post-emergent herbicides to each plot, as necessary based on weed height and density, and will compare the number of applications necessary for each treatment, as well as the overall effectiveness of the weed control program.

An additional piece of the project is to look at the use of Tyvek trunk guards to prevent herbicide from contacting the trunk of the apple trees. In the summer of 2020 we put Tyvek trunk guards on half of the trees in the plot, then sprayed all trees with the grower conventional herbicide application system. Before application, water sensitive paper strips were fixed to the side of each trunk. There was a 98% reduction in the amount of herbicide coming in contact with the trunk on the trees with the trunk guards. Further research would be necessary to determine if there are tree health implications to this difference.

Results to date were presented at the New York Winter Tree Fruit Conference and through the LOFP Fruit Notes newsletter, the ENYCHP E-Alerts, and the LOFP Fruit Facts.

Janet evaluating the herbicide plots in Olcott, NY.

Quarterly Highlight for Production Economics and Business Management – Mark Wiltberger

NY Fruit Farms Share Lessons Learned for Business to Thrive During COVID-19

Background/Need: The onset of the COVID-19 crisis in March 2020 threw the operations of fruit farms into question for the 2020 season, especially those with direct marketing to the public, such as farm markets and pick-your-own operations. Many fruit farms determined that they would be able to open, following guidance from NYS and materials from Cornell University such as the Best Management Practices for U-Pick and the NY Forward Business Reopening Safety Plan templates for farms. Still, farm owners ran into challenges they could not have anticipated, such as large crowds. At the end of the year, there were many lessons learned by every farm. It would make sense to share those lessons with each other so all could benefit going forward.

CCE Response: Cynthia Haskins of the NY Apple Association organized a track of sessions for apple growers at the virtual 2021 Empire Producers Expo in January. She contacted me to organize and host a session on January 13 called “Apple Grower Roundtable: Dealing with COVID-19,” and put me in touch with Jessica Johnson of the NY Vegetable Growers Association to coordinate. I invited four apple growers from around New York State to participate on the panel. (Warren Abbott, Abbott Farms, Baldwinsville, NY; Mark Lagoner, Lagoner Farms, Williamson, NY; Amy Machamer, Hurd Orchards, Holley, NY; Alec Moore, Reisinger’s Apple Country, Watkins Glen, NY). In a Zoom meeting in the evening, these panelists shared with 25 other farms their challenges and their innovative solutions.

A challenge for all of the U-Pick operations was crowd control. Numbers were high: people were eager to get out of the house and do something outdoors that was safe and healthy. Associated problems with crowds were managing people during check-in and check-out, and preventing people from over-picking unripe fruit that would be better to let ripen. The panelists’ most interesting answers were to the question, “Of all of the changes that you made to the way you operate, which things are you going to keep doing, post-pandemic?” Answers included: we are going to keep our prices high and not undercharge; we are going to keep multiple check-out stations out in the orchard, where people are picking; and we are going to keep selling by a fixed price for larger take-away containers and do away with weighing purchases in arbitrarily-sized bring-your-own containers. All on the panel agreed that the most important quality they brought to the crisis was an ability and willingness to adapt quickly to unpredictable circumstances, and that they would need this character for the 2021 season, since they have learned that one never knows what the future holds.

Scenes from Lagoner Farms in Williamson, NY, for a COVID-safe apple U-Pick in Fall of 2020.
Quarterly Highlight for Fruit Quality Management – Craig Kahlke

Conducting Farm Food Safety Plan Writing Workshops Remotely

**Background:**
The requirements for food safety for producers of fresh fruits and vegetables are ever increasing. As smaller farms strive to expand and gain increased market access, a common barrier is food safety certification. Despite FSMA compliance, which does not require a food safety plan, 3rd party audit schemes requested by most major wholesale buyers require a written plan. A farm food safety plan is documentation of a farm's proactive management to reduce the risk of microbial contamination. This is documentation of food safety practices.

**Target Audience:**
Commercial fruit & vegetable growers.

**LOFT Response:**
Worked with the organizer, Laura Biasillo (CCE-Broome), and other extension collaborators- Robert Hadad (CCE-CVP), Elisabeth Hodgdon (CCE-ENYCHP), Lynn Bliven (CCE-Alleghany), Lindsey Pashow (CCE-Harvest NY), Caroline Boutard-Hunt (CCE-Yates), Judy Wright (CCE-Seneca), Nathaniel Larney (CCE-Orange), Yolanda Gonzalez (CCE-Harvest NY) along with several auditors from the New York State Department of Agriculture & Markets (NYSDAM) to host two Farm Food safety Plan-Writing Workshops via Zoom on January 28th and March 4th. I led the discussion on the exploration of the food safety plan resources on the flash drive which was mailed to all participants. In addition, I led the groups through the start of writing their food safety plans. Following this we split into breakout rooms with similar farms matched to the expertise of the extension educators. I led a breakout room consisting of another educator, a NYSDAM auditor (floating between rooms) and 3-4 medium to large commercial wholesale fruit and vegetable farms. We tackled key Good Agricultural Practices and answered all grower questions. We also engaged in some excellent discussion about electronic record-keeping.

**Predicted Outcomes:**
Previous surveys and evaluations indicate that the development and writing of a comprehensive farm food safety plan is a key barrier to getting increased market access by having food safety certification. By the completion of these workshops, all growers had a key understanding, along with the tools and resources, to complete their plans. Most were 25-50% complete by the close of the workshops. In addition, Robert Hadad and myself share our contact info and stated we would review anyone’s food safety plans free of charge.

Quarterly Highlight for Cultural Practices – Mario Miranda Sazo

CCE LOF Virtual Pruning Training in the Spanish Language

CCE LOF continued taking advantage of virtual educational programming but in the Spanish language this quarter. During the dormant pruning season, four farms requested individualized pruning training via Zoom. A total of 25 Spanish employees were trained and introduced to modern pruning techniques. The two-hour pruning sessions were delivered for a maximum of 8-10 employees/session. Employees had significant amount of time for questions and answers during the training. These farms were split between Niagara and Orleans Counties.

Dormant pruning in an Orleans County orchard several years ago.

Flagging trees to be pruned in an orchard in Wayne County several years ago.