

Hands-Free Hands-On: Transforming a Hands-on Greenhouse IPM Program during COVID and Beyond

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The IPM In-Depth Hands-on Greenhouse Workshop was started in 2008 to provide an alternative to the common 'talking heads' presentation and to give growers practice in IPM techniques that they could use in their own operations. An added benefit was promoting interaction between attendees and between presenters and attendees to encourage discussion and sharing of information.

The workshops, held in July or August on the Cornell Campus, included 3 topics – plant pathology, entomology and crop production. The sessions were held in student labs so we could bring in plant material, soil, water and other messy items, and so that each person could have their own microscope. Because of space limitations and so that there was a lot of individual interaction, we had a maximum of about 50; sessions were 15-20 people each and each topic module was presented 3 times.

A topic module was approximately an hour long, with an emphasis on hands-on activities. After several years, and with many requests to make the program longer, we added 'The Doctor is In' so growers could bring issues from their operations and get a diagnosis, or at least a discussion, and increased the workshop from a ½ day to approx. 10:00-4:00.

In 2020, it was clear that an in-person program was not possible so we made a quick pivot to a Zoom based program, while still trying to emphasize practical activities that growers could do themselves. The 3 topics were Tune Up Your Fertilizer Injector, Bug Matinee: Bad guys and good guys on the big screen! (insect identification and how to do your own close up photography) and Getting to the Root of the Problem: Exploring greenhouse root diseases. To encourage active learning, we incorporated more procedural photos, video, and polling. Pre- and post-tests were done by including Qualtrics links in the chat. Eighty-three people signed up for the program, some of whom would never have traveled to an in-person program.

Although we had an audience with varying experience in Zoom, and a few extra pieces to juggle, the program was deemed a success. So we did it again in 2021, this time offering hand lenses, water testing strips, and a water sample test to increase the hands-on level of the topic training - Malevolent Mites: Exploring the world of plant feeding mites!, Watching Water Quality, and Methods of Magnification: Better diagnosis with a focused view.

What did we learn? Audiences are getting the hang of Zoom and interacting through chat and directly. On-line can take a lot more prep time. The more back up, the better! Measuring learning can be difficult, but the system works and you can reach more people.

What will we do in 2022? Go live AND on-line. Some of the comments from our survey:

- Prefer the hands-on experience and discussing issues with the other growers that attend

- In summer I like online because we're so busy but late fall and winter in person is a nice change
- Thought the on-line training was more interactive
- I'd like to attend in person but the cost of travel could be prohibitive for me.
- I miss the cherries*, and the people (* one of our lunch traditions)

The program won't be live streamed although some portions may be videoed for use later. Instead, we will use the same topics and present them as a webinar like those in 2020 and 2021. We are hoping that the 2 types of programs allow us to reach the most people with interactive content as possible.