

Spray Safe, Spray Well: Lessons Learned from the Eight-Part Series on Pesticide Safety and Efficacy

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Thanks to support from a Northeast Extension Risk Management Education (NERME) award, ENYCHP vegetable specialists were able to offer a free bilingual workshop series this winter focused on the fundamentals of pesticide safety and efficacy for beginning and organic farmers. For those of you who missed the live series, but would like to access the information that was shared from the guest presenters, all of the “Spray Safe, Spray Well” workshops are available on the ENYCHP YouTube channel. English language recordings are available at <https://www.youtube.com/playlist?list=PLk2Q-bw9Aiu51QWFPEgureC7d8CZDWyyX> and the Spanish language recordings can be accessed at <https://www.youtube.com/playlist?list=PLk2Q-bw9Aiu5jdWmFidvn-L5ZDmtgwlpS>. While it is impossible to distill all of the lessons learned from the series into a single article, some of the most impactful points for many growers will be presented as bullet points below.

- Alejandro Calixto, Director of the NYS Integrated Pest Management Program, gave some excellent examples of IPM programs for organic winter squash growers trying to manage powdery mildew, cucumber beetles, and other common pests. Early detection, proper identification, and early intervention are critical for OMRI-listed pesticides to be effective on these pests.
- Ana Maria Arce from TeeJet Mexico reinforced the importance of regular nozzle maintenance. A single worn nozzle orifice or plugged nozzle tip can result in a sizable impact on spray output that can result in poor coverage and off-label application rates.
- Jason Deveau, the Application Technology Specialist with the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) and co-manager of the Sprayers 101 website (<https://sprayers101.com/>), provided clear examples of how droplet size, pressure, and sprayer type can all combine to impact spray coverage. Using water sensitive paper cards in the target crop is the most effective way to assess your spray coverage, especially for contact pesticides like pyrethroid insecticides and protectant fungicides (chlorothalonil, copper, sulfur, etc).
- Sarah Whelen with the NYS Department of Environmental Conservation clarified which growers legally need to obtain a pesticide applicator license and referenced an online course for growers who are not licensed applicators to become eligible to provide annual Worker Protection Standard trainings (see <http://pesticideresources.org/wps/ttt/course/index.html> for details).
- Davis Blasini and Ricardo Orellana from the Produce Safety Alliance reviewed best practices for selecting and using sanitizers post-harvest. Sanitizers are often overlooked as pesticides on farms and are subject to the same regulatory requirements like Worker Protection Standard training as pesticides used in the field.
- Amara Dunn, Biocontrols Specialist with NYS Integrated Pest Management Program, provided an overview of the different ways that biofungicides work and shared some resources for assessing the performance of different biofungicides for controlling vegetable diseases.
- Teresa Rusinek, vegetable specialist with ENYCHP, discussed the impacts of alkalinity, pH, and other water quality characteristics on pesticide performance.

- Riley Harding, Northeast technical agronomist with ORO Agri, presented some of the basics of what adjuvants are and how they work to improve the efficacy of pesticide applications as well as how to select OMRI-listed adjuvants.
- Dr. Ana Legrand, assistant professor of entomology at UConn, discussed the modes of action of common OMRI-listed insecticides. Not only do the modes of action impact which target pests the insecticides are most effective at managing, the differences also influence the best practices for spray application. For example, *Bacillus thuringiensis* products (i.e. Dipel, Javelin, XenTari, Agree) must be consumed by caterpillar pests in order for them to be effective, while pyrethroids (i.e. PyGanic) must come into direct contact with the target pest, while systemic conventional insecticides are taken up by the plant and consumed as pests feed on the plant.
- Veronica Cervantes with Biobest USA talked about how to incorporate beneficial insect releases into an effective integrated pest management program and precautions to take when combining the use of insecticides with beneficial releases.

The Spray Safe, Spray Well team is excited to transition to the next phase of the project during which direct on-farm technical support will be provided to program participants on related subjects such as sprayer calibration, evaluating coverage, testing water quality, and more. Many thanks to Adriana Pericchi and Lala Montoya who provided translation services and simultaneous interpretation for all of the workshops and to all of the guest presenters for sharing their expertise!

This material is based upon work supported by USDA/NIFA under Award Number 2018-70027-28588



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