

INTEGRATED PEST MANAGEMENT

# Insights



Photo by Claudio Rubione/GROW

July 2025: Volume 22, Issue 2





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## Zap On Over to GROW's New Weed Electrocutation Page

By Emily Unglesbee, GROW

There's a lot happening in the world of electrical weed control, and GROW (Getting Rid of Weeds) wants farmers to have a starting place to learn about it. The group has published a new educational web page on weed electrocution ([growiwm.org/weed-electrocution/](https://growiwm.org/weed-electrocution/)) on its website.

The GROW network is a nationwide collaboration between federal and academic weed scientists and a team of communications professionals, who are working to coordinate research and outreach on integrated weed management tactics. The goal is to give farmers—and the industry that serves them—a robust toolbox ([growiwm.org/weed-management-toolbox/](https://growiwm.org/weed-management-toolbox/)) of weed control options to help them battle the growing epidemic of herbicide-resistant weeds.

As the field of weed management has expanded, so has GROW's website. In recent years, the organization has developed Extension-vetted, peer-reviewed web pages for its Weed Management Toolbox on cover crops, harvest weed seed control, precision weed management equipment and now, weed electrocution.

The new weed electrocution page was written by Texas A&M graduate student Ryan Hamberg, with contributions from Dr. Muthu Bagavathiannan (Texas A&M), Dr. Marcelo Moretti (Oregon State University), and Luisa Baccin (Oregon State). The page was reviewed by Dr. Lynn Sosnoskie, who has been exploring weed electrocution options for New York growers at Cornell University.



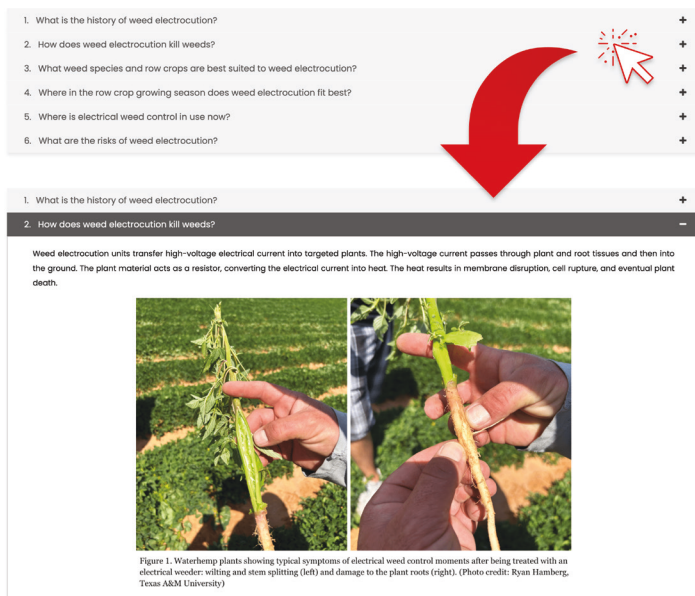
The Weed Zapper at work on a Maryland farm. Photo by Claudio Rubione/GROW.

The new page covers six basic questions about the practice of electrical weed control, in easy-to-expand accordions:

- 1. What is the history of weed electrocution?** This short section digs into the brief history of research into electrical weed control and the first commercial methods to emerge.
- 2. How does weed electrocution kill weeds?** Learn about the two types of electrical weed control tools on the market today, and how they each work to kill weeds via high-voltage currents.
- 3. What weed species and row crops are best suited to weed electrocution?** Here Hamberg breaks down the growing research from U.S. institutions on how well each electrocution method works in different crop settings and on individual weed species.

See "GROW" on Page 2

4. **Where in the row crop growing season does weed electrocution fit best?** Crop height and time of the season are major factors discussed in this section, which also includes a video of a farmer showcasing electrical weed control on his Maryland farm.
5. **Where is electrical weed control in use now?** Here, Hamberg lays out current commercially available weed electrocution devices in North America, including the crop industry where they are most commonly found.
6. **What are the risks of weed electrocution?** You can't discuss high-voltage electrocution devices without covering the dangers! In this section, Hamburg runs down the list of hazards, from fires and accidental human electrocution to the effect on nontarget insects and microbial organisms in the soil.



Easy-to-expand accordion navigation allows users to explore six basic questions about the practice of electrical weed control.

Finally, at the bottom of the page, you'll find a carousel of GROW's most recent news page articles featuring weed electrocution ([growiwm.org/category/weed-electrocution/](https://growiwm.org/category/weed-electrocution/)), so readers can stay up-to-date with current developments in the industry.

GROW web pages are dynamic and always expanding as new information and research comes along, so bookmark the page, and see how this electrifying industry develops!

In the meantime, interested farmers, crop advisors and Extension agents should put a **GROW Farmer Forum on weed electrocution on their calendars for July 23, 11 a.m. ET**. The forum will feature a panel of farmers using weed electrocution on their farms in Ohio and Maryland, with guidance from

TAMU's Ryan Hamberg. Register for free at [virginiatech.zoom.us/webinar/register/WN\\_uP-XOdtBSPe5geHz1x3-nQ](https://virginiatech.zoom.us/webinar/register/WN_uP-XOdtBSPe5geHz1x3-nQ).

## Links and Further Reading

GROW website: [growiwm.org](https://growiwm.org)

Weed electrocution page: [growiwm.org/weed-electrocution/](https://growiwm.org/weed-electrocution/)

Weed Management Toolbox: [growiwm.org/weed-management-toolbox/](https://growiwm.org/weed-management-toolbox/)

Cover crops: [growiwm.org/cover-crops/](https://growiwm.org/cover-crops/)

Harvest weed seed control: [growiwm.org/how-harvest-weed-seed-control/](https://growiwm.org/how-harvest-weed-seed-control/)

Precision weed management equipment: [growiwm.org/what-is-precision-weed-management/](https://growiwm.org/what-is-precision-weed-management/)

Dr. Muthu Bagavathiannan: [weedninjas.org](https://weedninjas.org)

Dr. Marcelo Moretti: [extension.oregonstate.edu/news/could-weeds-be-controlled-zapping-them-extension-investigating](https://extension.oregonstate.edu/news/could-weeds-be-controlled-zapping-them-extension-investigating)

Dr. Lynn Sosnoskie: [cals.cornell.edu/weed-science/about-our-programs/sosnoskie-lab](https://cals.cornell.edu/weed-science/about-our-programs/sosnoskie-lab)

Gashler, Krisy. "Projects Aim To Manage Weeds in Organic Fruit, Hemp Farming." *Cornell Chronicle*, September 21, 2021. [news.cornell.edu/stories/2021/09/projects-aim-manage-weeds-organic-fruit-hemp-farming](https://news.cornell.edu/stories/2021/09/projects-aim-manage-weeds-organic-fruit-hemp-farming)

Weed electrocution articles: [growiwm.org/category/weed-electrocution/](https://growiwm.org/category/weed-electrocution/)

GROW Farmer Forums: [growiwm.org/grow-farmer-forums/](https://growiwm.org/grow-farmer-forums/)

Weed Electrocutation Forum registration: [virginiatech.zoom.us/webinar/register/WN\\_uP-XOdtBSPe5geHz1x3-nQ](https://virginiatech.zoom.us/webinar/register/WN_uP-XOdtBSPe5geHz1x3-nQ)

## Outstanding Achievements in Integrated Pest Management Award



GROW (Getting Rid of Weeds), College of Agriculture & Natural Resources, University of Delaware, received an *Outstanding Achievements in Integrated Pest Management Award* from the Northeastern IPM Center in 2025. The annual award, launched in 2019, recognizes individuals or organizations whose work on IPM in the Northeast deserves special recognition.

More details can be found at [neipmc.org/go/ApbM](https://neipmc.org/go/ApbM).



# Cornell Integrated Pest Management: Bringing Safe and Sustainable Pest Management to New Yorkers for 40 Years

By Carrie Carmenatty, Cornell Integrated Pest Management

A research project on apples, a \$75,000 grant from the United States Department of Agriculture's Extension Service, and a pioneering spirit were the catalysts for what has become one of the nation's most acclaimed integrated pest management programs.

The seed for what is now Cornell Integrated Pest Management (Cornell IPM) took root in 1973 when James Tette, Ph.D., a chemist at Cornell's New York State Agricultural Experiment Station in Geneva, was tapped to head a project designed to reduce pesticide use by apple growers. By 1985, the success of that project had led to the establishment of the New York State Integrated Pest Management Program (NYSIPM) by making it a requirement under State Agriculture and Markets law. By 1999, the program expanded to support IPM practices in communities through support from the New York State Department of Environmental Conservation.

Four decades later, the roots of that program have stretched across New York State, bringing IPM practices that reduce risks to human health, the environment, and the community to all of New York's 20 million residents.

Cornell IPM advances research and education on options to manage pests while protecting human, environmental, and economic health and provides critical strategies for managing invasive species, rodents, weeds, and pests that impact structures, livestock health, field and vegetable crops, and fruit. The 2023 addition of the Pesticide Safety Education Program (formally a program of Cornell Cooperative Extension) to the Cornell IPM team further strengthened Cornell IPM's commitment to protecting New Yorkers and the environment by ensuring pesticide applicators have access to essential training and resources.

The program launched a year-long celebration of its 40th anniversary this spring with a rebranding initiative that included the adoption of the name Cornell Integrated Pest Manage-

ment and the completion of a comprehensive strategic plan. These efforts highlight the program's deep connection to the purpose-driven science and innovation of Cornell University's College of Agriculture and Life Sciences and Cornell AgriTech and its commitment to the university's land-grant mission.

Cornell IPM has a team of more than 35 coordinators and support staff who lead research and extension efforts and has become a trusted partner of the New York State Department of Agriculture and Markets and the New York State Department of Environmental Conservation.

From rapid responses to threats from emerging invasive species, to key research initiatives—such as current efforts to explore sustainable alternatives and help growers adopt IPM practices to transition from neonicotinoid seed treatments—to boots-on-the-ground extension work, helping schools and municipalities reduce pest intrusion, and ensuring pesticide applicators have access to the tools

and training they need to stay safe, Cornell IPM continues to leverage the pioneering spirit that made the program possible, while minimizing the impact of pests across the state.



The Cornell IPM team.

## Links and Resources

Cornell Integrated Pest Management:

[cals.cornell.edu/integrated-pest-management](https://cals.cornell.edu/integrated-pest-management)

Cornell IPM strategic plan: [cals.cornell.edu/integrated-pest-management/about-us/cornell-ipm-strategic-plan](https://cals.cornell.edu/integrated-pest-management/about-us/cornell-ipm-strategic-plan)

[cals.cornell.edu/integrated-pest-management/about-us/cornell-ipm-strategic-plan](https://cals.cornell.edu/integrated-pest-management/about-us/cornell-ipm-strategic-plan)

Cornell IPM team and contact info: [cals.cornell.edu/integrated-pest-management/about-us/contact-cornell-ipm-team](https://cals.cornell.edu/integrated-pest-management/about-us/contact-cornell-ipm-team)

[cals.cornell.edu/integrated-pest-management/about-us/contact-cornell-ipm-team](https://cals.cornell.edu/integrated-pest-management/about-us/contact-cornell-ipm-team)

NEWA (Network for Environment and Weather Applications):

[newa.cornell.edu](https://newa.cornell.edu)

EIQ (Environmental Impact Quotient): [cals.cornell.edu/integrated-pest-management/risk-assessment/eiq](https://cals.cornell.edu/integrated-pest-management/risk-assessment/eiq)

[cals.cornell.edu/integrated-pest-management/risk-assessment/eiq](https://cals.cornell.edu/integrated-pest-management/risk-assessment/eiq)

What's Bugging You?: [cals.cornell.edu/integrated-pest-management/outreach-education/whats-bugging-you](https://cals.cornell.edu/integrated-pest-management/outreach-education/whats-bugging-you)



# IPM Institute Welcomes Christopher Stevenson as Executive Director

The Board of Directors of IPM Institute is proud to announce the appointment of Christopher Stevenson as the new Executive Director.

Stevenson brings more than 15 years of leadership experience in mission-driven organizations, with a proven track record in advancing strategic growth, cultivating effective partnerships, and enhancing organizational strategy and engagement. He most recently served as Principal Partner at Citygate, LLC, where he consulted with mission-driven organizations on strategy, leadership development and market positioning. Prior to that, he spent nearly two decades with the Credit Union Executives Society, ultimately serving as Senior Vice President and Chief Learning Officer.

“I am honored to join the IPM Institute as Executive Director. Its mission is both urgent and inspiring,” said Stevenson, “I look forward to building on the organization’s strong foundation, collaborating with our dedicated team and partners to drive innovative, practical solutions that create a measurable difference where it matters most—in our food systems, our environment, and our communities.”

IPM Institute is dedicated to improving sustainability in agriculture and communities. Through collaborative partnerships and science-based strategies, the organization advances practices that reduce risks to human health and the environment while supporting biodiversity, climate resilience, water quality, and soil health. These goals are accomplished through a dedicated team that Stevenson will lead.

Stevenson’s experience working with boards, developing impactful strategic initiatives, and managing complex stakeholder relationships equips him to effectively guide the organization in advancing its mission.



Christopher Stevenson, Executive Director of the IPM Institute.

“We’re thrilled to welcome Christopher as Executive Director. The board is confident that his passion for our mission and stakeholders, purpose-driven focus, and track record of leading effective strategy will take IPM Institute to its next level of success and influence in our field,” said Tom Green, Board President.

Operations Director, Kelly Adams, added, “The leadership team is very excited to work with Stevenson as we focus on organizational strategic planning and growth, enabling us to collectively and collaboratively expand the reach and impact of IPM Institute’s programs.”

Stevenson holds an Executive MBA from the University of Wisconsin–Madison and has completed executive education programs at Harvard Business School, MIT Sloan, and Stanford Graduate School of Business. He is also a Certified Executive Coach and Certified Association Executive.

He began his role as Executive Director in April 2025.

## About IPM Institute

Founded in 1998, IPM Institute is a nonprofit organization dedicated to improving sustainability in agriculture and communities. Through collaborative partnerships and science-based strategies, IPM Institute advances practices that reduce risks to human health and the environment while supporting biodiversity, climate resilience, water quality, and soil health. The Institute’s work spans integrated pest management, sustainable and regenerative agriculture and other key sustainability challenges across the food system.

For more information about IPM Institute and its initiatives, visit their website at [ipminstitute.org](http://ipminstitute.org).



## Northeastern IPM Center Releases 2024 Annual Report

The Northeastern Integrated Pest Management (IPM) Center has published its annual report for 2024.

The report compiles, summarizes, and discusses many of the Center’s key activities, programs, and initiatives from throughout the year.

It illustrates how the Center fosters IPM research, adoption, and implementation in the Northeast and beyond through grants and awards, webinars and conferences, publications and other communications platforms, evaluation, and the StopPests in Housing Program.

To view the report, along with previous annual reports, visit [www.northeastipm.org/about-us/publications/annual-reports/](http://www.northeastipm.org/about-us/publications/annual-reports/).



# Working at the Intersection of IPM and Organic

By Abby J. Seaman, Cornell Integrated Pest Management

Throughout my career with the New York State Integrated Pest Management Program, recently rebranded as Cornell IPM, I've been most interested in the cultural and biological control aspects of IPM—those basic and not-so-basic cultural practices that help reduce pest (insects, diseases, weeds) levels to minimize pesticide inputs. I always ask how we can use our understanding of pest biology to thwart their development and where could biological controls be incorporated into our pest management systems.

## Where Did These Interests Come From and Where Did They Lead Me?

I'm pretty sure my family's interest in gardening and subscription to Rodale's *Organic Gardening* magazine started it all, as well as my mom's conviction that **I would attend Cornell**. I eventually did, after starting as an environmental science major at SUNY Plattsburgh. After seeing a high school friend's Cornell course roster (there's an entire course on photosynthesis?!), I transferred to CALS as a junior. At that time, there was a major called plant protection, which enabled me to take courses across the spectrum of agricultural disciplines, including plant pathology, entomology, and weed science, as well as my first course in biological control. My post-undergraduate time working in insect pathology and tree fruit entomology research labs furthered my education and led me to team up with two brand new faculty members to work on biological control of grape berry moth for a master's degree in entomology. My time working as a technician in an agroecology research lab introduced me to new concepts as well as a group of graduate students who met regularly to discuss how to foster support for sustainable and organic agriculture at CALS. During that time, I also started volunteering with the NOFA-NY's Organic Certification Standards Board, helping to establish standards and review applications for certifying New York farms as organic.

This is the background I brought with me to NYSIPM in 1993. At that time, many people were still apprehensive about the concept of IPM. I still remember the look of dismay on the face of one grower who was struggling to control Colorado potato beetle (CPB) on his small-acreage diversified farm. At that time CPB was resistant to just about every insecticide that was labeled for its treatment. I suggested he rotate his solanaceous crops as a block to take advantage of the fact that when CPB emerge in the spring they aren't able to fly, and the further you can rotate your crop away from last year's crop, the longer it takes them to find it. Clearly, he was hoping I would pull a miraculous insecticide out of my pocket that no one else knew about! A few years later, I learned that large scale potato growers in Wyoming County were teaming together to swap land for

distance rotations to control Colorado potato beetle. I wonder if the look on their faces was the same when this practice was first suggested to them.

With the help of supportive Cornell Cooperative Extension colleagues and CALS faculty, and the NYSIPM Small Grants Program, I spent my first years learning about and conducting on-farm demonstrations of basic IPM practices in a variety of vegetable crops. At the same time, I was being asked to present at organic farming conferences, where my approach to IPM aligned with the organic farming philosophy. I found an audience that was mistrustful of Cornell and feeling underserved by Cornell Cooperative Extension, but eager to share their challenges and work together to develop solutions. I found myself unable to provide solutions for some of the more challenging pest management problems in organic vegetable production and began to focus more on developing resources and collaborating with colleagues to research pest management solutions for organic vegetable farmers. Some of these projects are described below.

## *Trichogramma ostriniae*

A project that did not initially target organic producers was working with entomology professor Mike Hoffmann and his lab, researching and demonstrating releases of *Trichogramma ostriniae* to control European corn borer in sweet corn and peppers. The original intent of the releases was to reduce pesticide use in conventional systems, but organic growers showed much more interest than conventional growers. I and colleagues in other states worked mostly with organic growers on research and demonstration trials to establish effective release rates and timings. European corn borer has since disappeared as a pest for conventional growers, but persists on some farms growing organic sweet corn, where *Trichogramma ostriniae* is still used.



*Trichogramma ostriniae* packet attached directly to a corn plant. Photo by Abby Seaman.

## Organic Production and IPM Guides

One of the first projects I coordinated that was strictly focused on organic production was the development of organic production guides for several processing vegetables in response to industry interest in sourcing those products in New York. With support from the NYS Department of Agriculture and Markets, Cornell faculty and CCE colleagues collaborated to create guides for eight vegetable crops. Those are currently being updated and expanded to include additional crops.



## Efficacy of Products Allowed for Organic Production

For a variety of reasons, some insects and diseases on organic farms are not adequately controlled by cultural practices and biocontrol options are not available. In these cases, pesticide solutions are needed. While there were products on the market, little was known about their efficacy, and little research was being conducted. For nine years, starting in 2009, I obtained funding and collaborated with now Cornell AgriTech director Chris Smart and professor Brian Nault to conduct trials evaluating the efficacy of products labeled for pests that growers most frequently identified as problematic including striped cucumber beetle, crucifer flea beetle, squash vine borer, squash bug, cucurbit powdery and downy mildew, and tomato foliar diseases. Since that funding ended, faculty colleagues have routinely included products allowed for organic production in their trials.



Removing weeds between rows of organic squash. Photo by Allison Usavage.

## Organic Squash Systems Trial

Successful organic production involves developing systems of cultural practices for managing pests, and the system developed for one pest can influence other pests. Systems trials are the best way to examine these interactions. In 2000 and 2001, Bryan Brown, weed IPM specialist with Cornell IPM, and I collaborated with Chris Smart and Brian Nault on organic winter squash systems trials. We focused on four weed management systems, looking at their impacts on weeds, pest and beneficial insects, diseases, and profitability with and without the use of pesticide applied following IPM thresholds. The trial showed that the weed systems can have subtle impacts on pest and beneficial insects as well as diseases and that the cost of the IPM practices can be recouped in higher yield and quality in some systems.

So much has changed since I started with NYSIPM in 1993. IPM is now standard practice on most vegetable farms. Relationships and trust between organic vegetable farmers and Cornell are



Abby Seaman in the field. Photo by Allison Usavage.

much stronger. Vegetable specialists with regional extension programs routinely work with organic farmers. One of the signature programs of the Northeastern IPM Center is IPM and Organic Systems, and its former director Carrie Koplanka-Loehr was instrumental in forming a national Organic and IPM Working Group to facilitate collaboration between organic and IPM communities.

Working with organic farmers has shown me how beneficial cultural practices and biological control can be to pest management, and when (and sometimes why) they aren't enough. I consider organic farmers to be high-level IPM adopters. It's challenging and there are sometimes failures, but what we learn by helping organic farmers successfully manage pests can also help conventional IPM practitioners reduce their environmental impact. Research that focuses on better understanding agroecosystems, enhancing ecosystem services, developing management solutions that don't require conventional insecticides, and developing cropping systems based on this research will benefit all farmers, regardless of their production philosophy.

**Abby Seaman**, Associate Director of Agricultural IPM and the Vegetable IPM Coordinator, Cornell IPM, received an *Outstanding Achievements in Integrated Pest Management Award* from the Northeastern IPM Center in 2025. The annual award, launched in 2019, recognizes individuals or organizations whose work on IPM in the Northeast deserves special recognition.



## Credits

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**Northeastern IPM Center:** Deborah G. Grantham, Jerrie Haines, Jana Hexter, Kevin Judd, David Lane, Susannah Reese, Mike Webb.



This work is supported by the Crop Protection and Pest Management Program, project award number 2022-70006-38004, from the U.S. Department of Agriculture's National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.