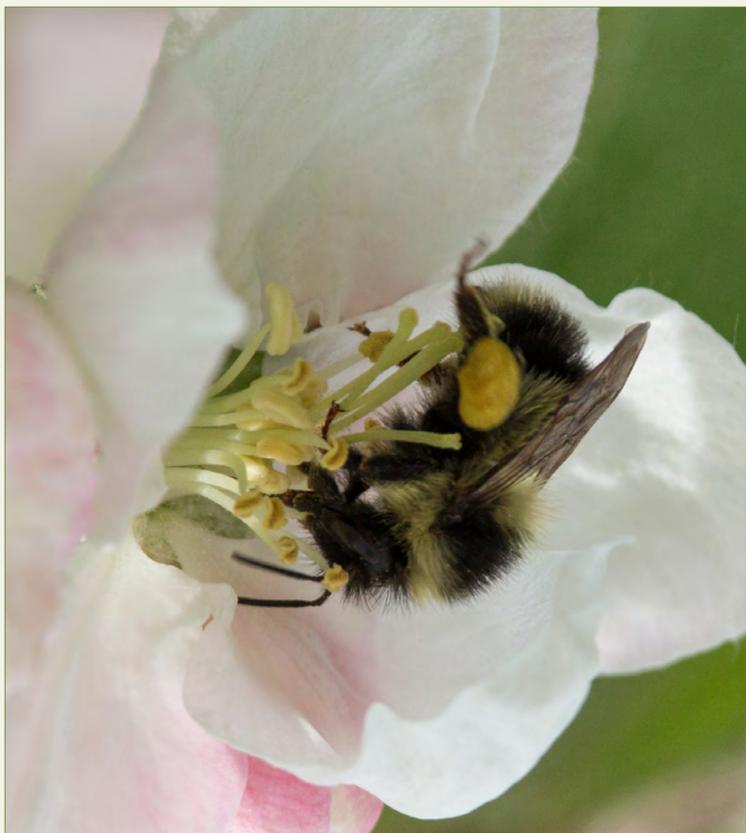




Cornell University
Cooperative Extension



The year in review

New York State Integrated Pest Management Program



Hover flies are pollinators too.

A NOTE FROM THE DIRECTOR: This is — an annual report? Well, yes; here's why. People are still loving our 30th anniversary report. So while that's still circulating, here's an entirely different spin on 2015–16. An infographic to help you *Think IPM* — and you can hang it on the wall. And here, a smattering of mini-stories about what's been happening lately. And that beautiful native bee on the cover? She represents the surge of attention pollinators are getting these days; attention that reminds us why and how to protect these tiny partners in our orchards and fields, landscapes and gardens. *Good science, good sense: IPM.* Last, a big thank you to our partners — state agencies, environmental groups, growers, managers, researchers, educators. *You.*

POLLINATORS: Pollinators boost New York's economy by \$1.2 billion. About 450 species of bees alone populate our fields and gardens. But their numbers are plummeting. Since protecting non-target organisms is core to IPM, we helped advise the governor's Pollinator Task Force in crafting a "Pollinator Protection Plan." And our pollinator conference highlighted an IPM problem-solution approach for the 100 participants — growers, the media, consultants, and policy makers.

FIELD CROPS: Production. Pests. Profitability: That's the Triple P on-farm educational program for growers. With 14 farmers and 10,750 acres, PPP is a grower driven, hands on, and locally adapted educational program where farmers learn together. After all, real data collected from growers' farms is more convincing than hypothetical examples — and each grower said they'd recommend the program to others.



COMMUNITY: Buddy, can you spare a dime? Here's how tiny those blacklegged ticks (*aka deer ticks*) are. But Lyme disease is dangerous. Our resources help you learn what makes ticks tick: their habits, habitats, and how to protect yourself.

COMMUNICATIONS: Pull out your smartphone. Search for NYSIPM. Hey! It's got a clean new look — and it scales to your screen. While you're there, check us out on Facebook, YouTube, Twitter, and our many blogs. Isn't it time you subscribed?

ORNAMENTALS: Some invasive plants are so lovely we plant them unawares, not knowing they outcompete natives. Once on the loose, invasives hammer not only your landscape beds but wild areas as well. Check out our "Alternatives to Invasive Plants" list, which notes beauties that play well with others.

NEWA: The sky's the limit for the Network for Environment and Weather Applications — better known as NEWA. With a strong base in NY and members as far-flung as Minnesota and North Carolina, more than 425 stations now offer thousands of growers pest forecasts that predict if, when, and how hard a problem might strike. And hey — *it's homegrown here at Cornell.* Need peace of mind? Get NEWA.



VEGETABLES: We were part of a team that asked growers to rank their research and extension priorities. Of the seven items on the list, dealing with pests — insects, weeds, and diseases — was the frontrunner. Second? Coping with wildlife problems. Added together they accounted for nearly half the response, and both have *IPM* written all over them.



Fothergilla gardenii

On the cover: Bumble bees are among hundreds of native insects in New York that help pollinate our crops. In fact, more than a third of the foods we eat depend on pollinators. Of the fewer than 50 species of bumble bees that make North America their home, several populations are rare or declining.

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We develop sustainable ways to manage pests, helping people use methods that minimize environmental, health, and economic risks.

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APPLES: Peter Ten Eyck, 4th generation farmer at 320-acre Indian Ladder Farm outside Albany, leads by example — challenging our NYS IPM fruit team and his peers to dig ever deeper in creating sustainable tactics for dealing with pests. For his decades of service and innovation, Ten Eyck received our "Excellence in IPM" award.



HOPS: Growing starter plants for hops farmers in your greenhouse? It was year one of a three-year project and we're getting a handle on the issues growers face. Next up: crafting a Sustainable Hops IPM Program from Greenhouse to Harvest.

GREENHOUSE: Overfertilized plants with nitrogen coursing their veins appear to attract aphids, which plug into plant veins like phyto-Draculas. But do they *always*?

We tested two aphid species on peppers and pansies. Results? Wrack and ruin for the peppers. The pansies? Not so much. Time for more research.



COMMUNITY: OK, compost makes for healthy soil, and healthy soil helps prevent pest problems. And — composting can keep about one-third of solid waste out of landfills. It's a win-win all the way around. That's why we funded a seven-county project in the Hudson Valley region to promote and teach composting 101. After all, preventing pests is IPM 101 too.

FIELD CROPS: Which pests? Where, when, why — and how to deal? Year in and out, a cadre of IPM and extension educators work behind the scenes to keep farmers in the know with weekly pest reports—now 15 years strong and reaching 9,500 growers, consultants, and educators throughout the growing season. Timely, pertinent information: Think IPM!

SCHOOLS: Last year our community team gave 30 presentations, reaching 900 school personnel. Not to mention our *ABCs of School IPM* blog — always on time and on topic. And we helped schools scope out their pest problems, sometimes finding that the culprit they thought was there ... wasn't. Identify the problem, that's good IPM!

POLLINATORS: Golf courses offer valuable green space for pollinators *and* people. We surveyed Bethpage State Park's golf courses, finding over 92 species of pollinators hard at work — fodder for how other golf courses could amplify their pollinator habitat. Besides, flowers that feed pollinators make golf courses more attractive to people too.



VEGETABLES: Pumpkins, melons, and their kin occupy more than 13,500 acres in New York, and farmers have to outsmart some nasty pests to produce that perfect pumpkin — all compelling reasons to bring IPM outreach to growers. Our "take it to the farm" demos made it clear — scouting for incipient signs of pests is among the smartest moves a grower can make. New disease problem cropping up? Don't skip a fundamental IPM practice. Rotate those pumpkin fields.

FRUIT: Birds enrich our lives. But not the birds that plague sweet cherry, grape and blueberry growers where it hurts the most — their wallets. Our four-year multistate research project told us which birds damaged which fruit most, their economic impact, new ways to control them, and much more. Learn about it on our info-packed YouTube channel.



Problem



Bees, flies, wasps, and other pollinators are crucial for crops, landscapes, and natural areas. But they're under threat.



Greenhouse growers want more IPM methods for insect and disease pests of ornamental and vegetable crops.



Fire blight is a potentially lethal disease of apples. Now it's becoming resistant to standard controls.

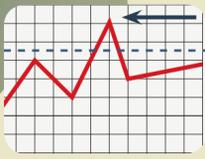


Hot and bothered! Flies hassling cows means less milk. But often sprays don't work.



Goose droppings on playfields are slick and unsanitary. Athletes can get hurt.

Considerations



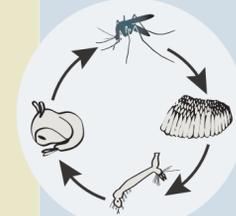
Thresholds



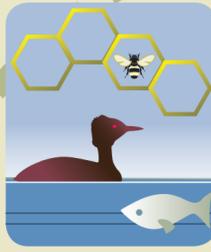
Identification



Monitoring: How many?



Biology: How does it live?



EIQ: Environmental Impact Quotient

NEWA
Weather Monitoring and Pest Forecasting

Blossom Blight Forecast				
Date	10	11	12	13
Risk	High	High	High	Caution

REPORT

Apples	<input type="checkbox"/>
Grapes	<input checked="" type="checkbox"/>
Cherries	<input type="checkbox"/>
Pears	<input checked="" type="checkbox"/>
Berries	<input checked="" type="checkbox"/>
Turfgrass	<input type="checkbox"/>

Trac Software



Interactive Plant Manager



Apps



Public Opinion



Local Preferences

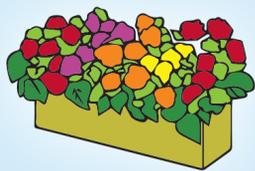


Laws and Policy

Actions

- Survey pollinators at Bethpage State Park Golf Courses
- Recommend plantings for pollinator habitat on farms, golf courses, and back yards
- Keep pollinators happy and healthy with bee-friendly IPM practices

- Test biopesticides and biocontrols on greenhouse crops
- Share data with growers
- Growers track insect pests and biocontrols using our *Greenhouse Scout* app



IPM helps greenhouse vegetable and ornamental growers stay ahead in the pest management game.

- Improve NEWA's fire blight forecast tool
- Survey where fire blight is most prevalent
- Create IPM guidelines to manage resistance



Healthy orchards and delicious apples.

- Clean barns, hang sticky traps, release parasites
- Trap flies out of pastures
- Encourage dung beetles that outcompete horn and face flies



Happy cows. Lots of milk!

- Test remote-control trucks, drones, and other novel ways to deter geese
- Build a team with grounds managers, coaches and parents
- Choose best methods for the site—and make a plan



Athletes play safely on sports fields.

Outcome



Pollinators thrive in agricultural and community settings.

IPM BASICS

LOCAL

ENVIRONMENT

COMMUNITY

INTEGRATE

EXPERIENCE

What worked in the past?



Trial A

Trial B