



The year in review 2000 – 2001



New York State Integrated Pest Management Program

“The New York State IPM Program is an integral component of the future viability of New York’s agriculture industry.”

—Daniel Canipe, President, New York State Agri-Business Association

“...Many significant accomplishments over the years but the greater potential of [the program’s] value lies ahead.”

—Donald R. Specker, Field Sales Agronomist, Pioneer Hi-Bred International

“In 1986, I became a convert to IPM. It was a tough transition; many of us in the ornamentals industry took a lot of heat. The community IPM program validated what we were trying to do; it’s made it a lot easier, providing the research we need.”

—Jon Hickey, Sr., General Manager, Lehman Plant Care Co., Inc.

“This program is one of our success stories.”

—G.W. Miller, Owner/
Operator, HG Miller Farm, Inc.

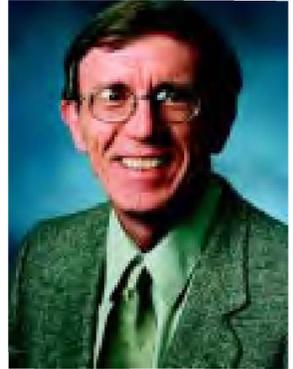
HEALTHY ENV

IPM for all New Yorkers

The New York State Integrated Pest Management Program has been helping address the pest management needs of agriculture in New York State for many years. In cooperation with Cornell University researchers, Cooperative Extension staff, and many others, we continue to develop and implement cost-effective IPM tactics that pose minimal risks to the environment and human health. Support provided by the Department of Agriculture and Markets has helped make that possible. More recently, additional state funding has come to the program through the Department of Environmental Conservation for our new community IPM program, which responds to pest management needs in non-agricultural settings, such as those encountered in schools, offices, landscapes, and homes.

The combination of both an agricultural and community IPM effort permits us to respond to the pest management needs of all the citizens of the state. It also offers us the unique opportunity to help strengthen the connection between consumers and the producers of their food and to draw attention to the fact that the need for pest management is universal, as are the associated risks.

New challenges occur almost daily for all of us working in IPM: new pests, new pest management technologies, new policies, but with each challenge comes opportunity. This report highlights some of the many ways we addressed those opportunities in both our agricultural and community IPM efforts this past year.



Michael P. Hoffmann, Director,
NYS IPM Program

Could the demands of farming be any more intense? Consumers expect cheap, blemish-free, bountiful food. Global competition strains the bottom line; so do the perennial costs associated with weather and pests: diseases, weeds, insects, mammals, and birds. IPM research, demonstrations, and up-to-the-minute information help growers adapt to the evolving realities of agriculture in New York.

IPM for AGRICULTURE

COMMUNITY IPM

To learn how it played out in 2000–2001, read on. And the second section of our report describes our community IPM efforts—now reaching all New Yorkers, where we live, work, play, and learn.

ENVIRONMENT

IPM grows to meet new agricultural



Copper bands wrapped around vineyard posts (above) and the trunks of grape vines, and fly strips (cover photograph of calves in a greenhouse) are two examples of an effective IPM technique: preventing pests from reaching their targets by erecting barriers or using traps.

Photo above: T. Martinson

Snails too costly to be ignored in vineyards

In some parts of New York, striped snails have taken to clambering through grape canopies at harvest time. While it appears they eat neither leaves nor fruit, these snails can still cause extreme economic hardship for grape growers. If one snail turns up when processors sample the load, they'll reject a grower's entire lot of grapes. With lots wholesaling for \$5,400, one snail can cost a grower dearly.

Now researchers have found that barriers made of copper strips provide 100% control because a chemical reaction with the snail's body causes it to drop to the ground unharmed. Although the materials and labor cost to install copper strips on an acre of grapes (600 vines) are high at the outset, they could last for years and may prove to be the least expensive option of all.

Project leader: T. Martinson

Bad weather doubles research yield

In 1999, IPM researchers confirmed the effectiveness of scouting thresholds for carrots that help growers reduce fungicide applications for a common form of fungal leaf blight by 50% or more. This final year's trial on commercial farms was intended both to confirm which carrot cultivars are resistant to blight and to document the savings farmers enjoy when they use these thresholds.

What no one counted on was that the weather—distressingly cold and wet, from most growers' point of view—favored an entirely different kind of leaf blight. Even so, the thresholds worked perfectly. The serendipitous result: researchers now have a handle on thresholds and cultivar resistance to two diseases rather than one.

Project leaders: G. Abawi and J. Ludwig

"The only way to go."

"The Crop Update is the most valuable tool I have in assessing current conditions during the growing season."

"Never missed one. I display it in our store."

"Timely reminders on disease and insect conditions help me make decisions which often save pesticide applications and dollars."

—grape growers discuss the Lake Erie Regional Grape Program's electronic newsletter



This is what "integrated" means—researchers test a combination of IPM techniques in a "whole system" approach to fly management for dairy farmers (see story titled "Flies stuck on IPM"). Photo: P. Kaufman

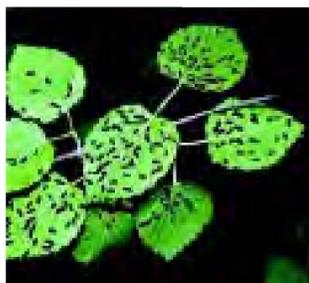
Cultural challenges



Can a microscopic “worm” topple a new pest?

Viburnum leaf beetle, *Pyrrhalta viburni*, is a new and rapidly spreading pest with the potential to devastate both wild and domestic populations of some of America’s favorite shrubs. From a small start in 1996 near Rochester, New York, this insect has spread to 27 New York counties as well as to Pennsylvania and Vermont. Researchers have been working hard to learn the beetles’ biology and areas of vulnerability, and already their investigations have borne fruit. Under laboratory conditions, a microscopic parasitic worm—the nematode *Heterorhabditis bacteriophora* (applied at the rate of one million nematodes per square foot)—gave superb control of the beetle’s soil-dwelling larval stage. Field testing will begin next year.

Project leader: P. Weston



When faced with a new pest, IPM researchers first study its biology and habits, hoping to craft a highly specific response to the pest that doesn’t harm beneficial species or the environment. Above: damage on arrowwood.



Nursery retailers, home gardeners, and professional landscapers may all suffer the depredations of this insect. Above: larval stages. Top, right: adult beetle on a branch. Photos: P. Weston

Brisk research response to new wheat disease

Soft winter wheat for cookies, crackers, doughnuts, and cakes is an important crop for New York farmers because it fits well into dairy, cash grain, and vegetable rotations, helping disrupt the life cycles of pests that damage other crops. But now a new disease of wheat—the wheat soilborne mosaic virus—has entered New York State and is spreading quickly. How to deal? Careful field trials are indicating which New York-grown varieties are resistant to the virus, and these preliminary findings are being shared with seed companies and consultants even as research continues.

Project leaders: G. Bergstrom, L. Davidson, M. Sorrells, S. Gray

Growers gain easy access to critical IPM information

New York’s vegetable growers—who rank nationwide among the top 10 producers of 12 different vegetable crops—have saved hundreds of thousands of dollars a year in pesticide use by following IPM practices. Now they can better their performance and their odds by having, at hand, information that until recently took hours of research to uncover. Our

Spreading the word

To encourage New Yorkers to adopt or refine IPM practices, NYS IPM Program staff offered presentations on a broad range of agricultural and community IPM topics:

- “You’re it! TAG (tactical ag. teams)—helping farmers, agribusiness, and extension personnel find crop and pest management solutions”
- “What’s different about greenhouse IPM?”
- “Bedbugs in the 21st century”
- “Vole, mole, & deer control”
- “The big three vegetable insect pests”
- “Nontoxic pest management using an IPM approach”
- “Protecting your business and the environment with best management practices”
- “Organic vegetable production” conference
- “Entomopathogenic nematodes and other microbial control products for use on golf course turf”
- “Pest management policy development for schools”
- “Mechanical weed control”

Here’s a sampling of complementary resources:

- Lake Erie Region distance-learning center for grape IPM
- *Integrated fly mgmt. around confined livestock* video
- Fifteen online lesson kits for teaching IPM
- *Managing pests in office spaces* brochure
- Powerpoint presentations on livestock IPM
- *Nontox gmt. for collections and their facilities* manual for librarians
- *Insight on IPM*, electronic newsletter
- Series of six radio public service announcements



IPM often requires taking a closer look. Above, extension educator Teresa Rusinek checks the viability of predatory mites before releasing them to control thrips in a greenhouse biocontrol study.

Management success depends on the proper diagnosis of the problem—and that begins with the correct identification of the pests, a process called “scouting.”

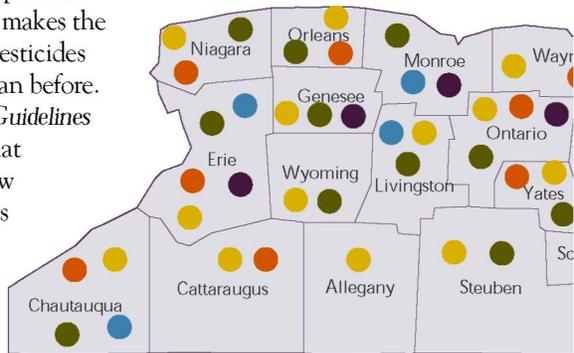
Right, extension educator Gary Couch (at right) teaches participants in a Putnam County workshop how to scout for pests of ornamentals. Photo, above: G. Couch. Photo, right: J. Dampier

Project leaders (thrips biocontrol): S. MacAvery, T. Rusinek, G. Couch
Workshop leaders: J. Dampier, G. Couch



newly revised web-based *Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production* (www.nysaes.cornell.edu/recommends) tells how to use the latest and most enduring biological, cultural, and physical controls.

The format is updated frequently and makes the careful use of pesticides much easier than before. Likewise, the *Guidelines* links to sites that tell growers how to identify pests and when they should start scouting for them.



Project leaders:
C. Patzoldt, S. Reiners, M. Hoffmann

Soft products are hard on apple pest

The obliquebanded leafroller is a serious pest of apples in western New York’s orchards, where it has become resistant to pesticides. Organophosphate insecticides currently used for control are under review by the Food Quality Protection Act and may be removed from the market. To help growers stay ahead of the curve, IPM-funded research assessed several environmentally friendly (“soft”) bioinsecticides. Some of these new sprays should provide excellent control of this leafroller—while allowing natural enemies that can provide some biological control to build up in growers’ orchards.

Project leaders: H. Reissig, A. Agnello, J. Nyrop, R. Straub

Technology can aid a grower’s profits and the environment—especially when it’s used masterfully.

Cornell researchers and extension educators demonstrated productive techniques and equipment to about 100 growers in the Finger Lakes region.

Tunnel sprayers, like this one pictured in action at Sheldrake Point Vineyard, are so efficient at targeting and recycling the spray they’ve helped some growers reduce pesticide drift by 90% and total pesticide use by about 30% because of improved deposition. Photo: W. Altman

Project leaders: A. Landers, T. Martinson, D. Weimann, B. Madill



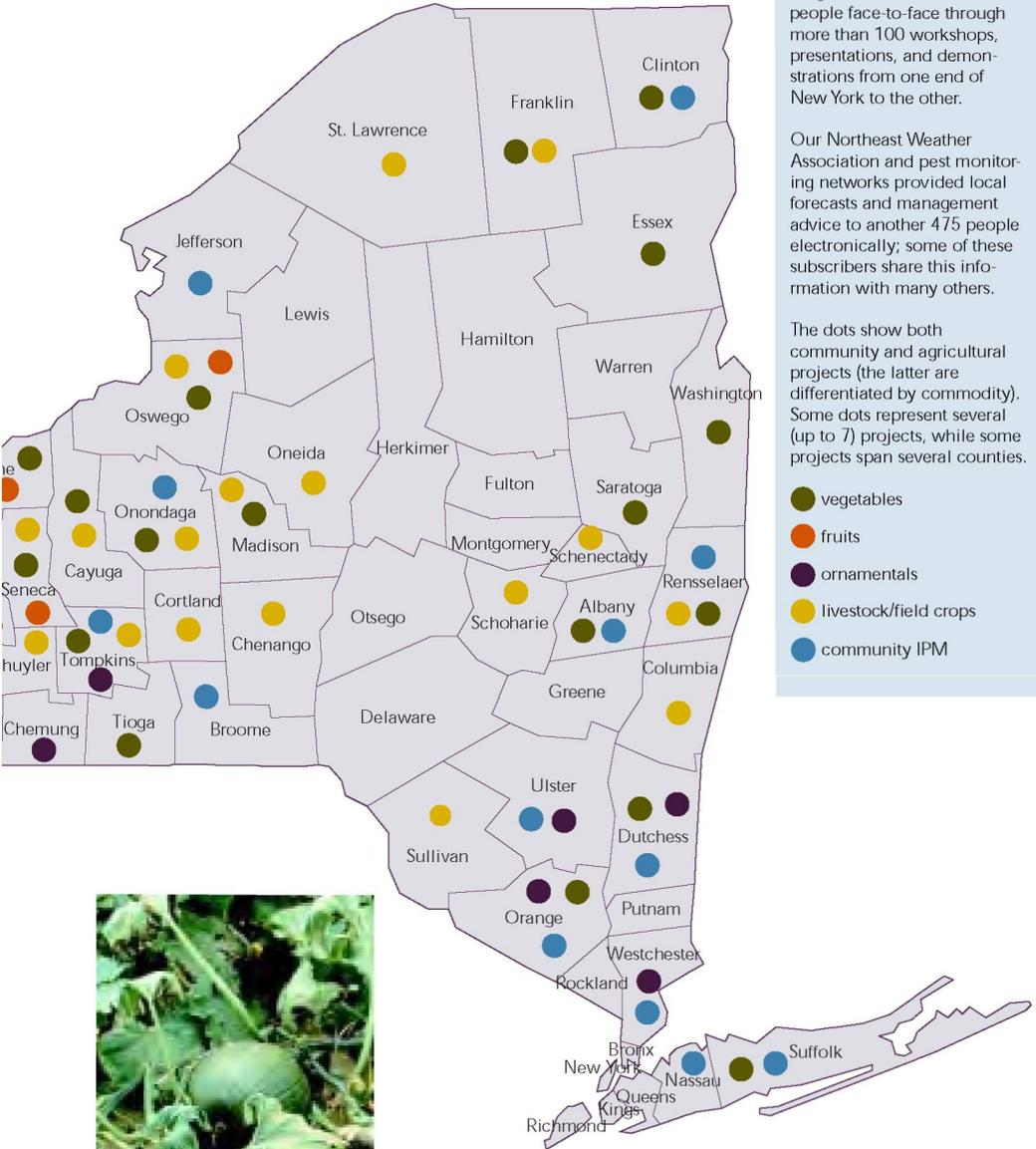
On the farm and in your neighborhood

This past year, the NYS IPM Program reached over 4,600 people face-to-face through more than 100 workshops, presentations, and demonstrations from one end of New York to the other.

Our Northeast Weather Association and pest monitoring networks provided local forecasts and management advice to another 475 people electronically; some of these subscribers share this information with many others.

The dots show both community and agricultural projects (the latter are differentiated by commodity). Some dots represent several (up to 7) projects, while some projects span several counties.

- vegetables
- fruits
- ornamentals
- livestock/field crops
- community IPM



Recently, New York growers noticed an increase in the number of pumpkins and squash afflicted with bacterial wilt, shown at left, a disease transmitted by cucumber beetles. When it hits, wilt can wipe out an entire field.

IPM-funded researchers identified cucurbit cultivars that are less susceptible to the disease and assessed differences among crop types. They also determined which cultivars the beetles prefer.

Growers can use this information today to adjust their management practices for wilt and cucumber beetles, which may help them increase their profitability and reduce their use of insecticides.

Project leaders: M. McGrath, S. Beer



Striped and spotted cucumber beetles. Photo: M. Hoffmann. Pumpkins showing wilt damage. Photo: M. McGrath



One of these huge fly strips can trap over 100,000 flies. IPM staff, Cornell researchers, and students are shown checking a trap and counting flies. Photos: P. Kaufman

Flies stuck on IPM

Barn flies are an ever-present source of annoyance, and can reduce milk yields while they transmit disease and cause blood loss. Indeed, calves stressed by flies may perform less well throughout their lives. Barn flies quickly become resistant to insecticides, and if not managed, populations can explode. Sound management includes monitoring fly populations, predator releases, baited traps, and—especially—sanitation. Now researchers have tested a new sticky trap, a real whopper of a fly ribbon at 11 inches by 24 feet, on eight farms with a total herd size of 7,000. Combined with sanitation, the trap holds high potential for dramatically reducing both the costs of fly management and the amount of insecticide used.

Project leaders: D. Rutz, P. Kaufman, K. Waldron

The doctor is ~~in~~ online

Sometimes people forget that plant diseases are pests, too. Now any time growers see pesky blotches and spots on their crops, they can click their way to *Vegetable MD Online* (vegetablemdonline.ppath.cornell.edu) to help learn about and identify the major diseases of commonly grown vegetables in New York and the Northeast. Just as important, *disease alerts* tell growers when to anticipate trouble—while the link to the *vegetable clinic* tells them how to submit samples for diagnosis, and the link to the *vegetable Guidelines* tells them what to do about it.

Project leaders: T. Zitter, M. McGrath

"IPM allows our farmers to remain viable and competitive in the marketplace of the world. It results in the production of locally grown, quality produce with less cost to the producer and more protection for the environment."

A true testament to the NYS IPM Program is the fact that nearly 90% of the growers in the state use some form of IPM on their operations today."

Nathan L. Rudgers,
Commissioner, NYS Department
of Agriculture and Markets



Jim Bittner of Singer Farms in western New York checks a pheromone trap for oriental fruit moths. In this IPM-funded study, growers helped scientists and extension field staff evaluate several pheromone products that disrupt the moth's mating. Early results are quite promising. Bittner also cooperated in a test of a prototype dispenser that greatly reduced the mating of oriental fruit moths, codling moths, and obliquebanded leafrollers in apple orchards.

Growers throughout the state help shape IPM by working with faculty, extension, consultants, and IPM staff. They gather and share forecasting data, participate in research, host workshops and on-site demonstrations, and advise us about industry needs. Photo: A. Agnello

Project leaders: A. Agnello, H. Reissig, D. Breth (pheromone disruption of OFM in peaches); A. Agnello, H. Reissig, D. Combs (pest management tactics for organic apple production)

Researcher discovers scientific windfall

Until recently, no one knew just how many billions of fungicide-resistant disease spores lurked in apple bins from year to year—or how postharvest drenching systems, designed to combat a different, less damaging disorder, actually spread those spores throughout the harvested crop. The discovery came serendipitously during research to improve bin-cleaning techniques. Now New York's packing-house operators can eliminate the fungicide drench for some apple varieties—saving as much as \$430,000 on chemical and application costs.

Project leader: D. Rosenberger



IPM funded projects— agriculture

- Development of a web page on identifying and managing diseases of vegetable crops in New York—T. Zitter, M. McGrath
 - Combining scouting and tolerant cultivars for the effective management of leaf blight diseases of carrots—G. Abawi, J. Ludwig
 - IPM demonstrations in peppers (year 2)—A. Seaman
 - Demonstration and evaluation of pest management alternatives in Finger Lakes grapes (year 2)—T. Martinson, T. Weigle
 - Thrips biological control demonstration in Orange and Ulster Counties (year 2)—S. MacAvery, T. Rusinek, G. Couch
 - IPM demonstration and implementation plan for Christmas tree growers (year 2)—S. Mallozzi, G. Couch
 - *Branching Out: An integrated pest management newsletter for trees and shrubs* (year 3)—G. Hudler, D. O'Brien
 - Promoting sustainable production agriculture in Oneida County through the implementation and evaluation of tactical agriculture teams (TA_g)—J. Miller
 - Demonstrating new technologies for improved corn rootworm management—W. Cox, E. Shields, K. Waldron
-
- Pheromone trap network for fresh market and processing sweet corn (year 7)—A. Seaman
 - Developing additive action thresholds for spotted tentiform leafminer and European red mite—J. Nyrop, A. Lakso
 - Transect sampling to enhance efficiency of corn rootworm monitoring—J. Losey, P. Arneson, K. Waldron
-
- Nature and source of inoculum of *Aspergillus niger* causing the Aspergillus black mold disease of onions in New York (year 5)—J. Lorbeer, V. Ransom, J. Tuffley
 - Occurrence and management of tomato canker—M. McGrath, D. Moyer, W. Erb, T. Blomgren
 - Developing management strategies for bacterial canker on tomatoes—H. Dillard
 - Development of IPM strategies for apple fruit russet (year 4)—T. Burr
 - Microbial products for Pythium root rot prevention in poinsettias (year 2)—K. Hall
 - Biological control of viburnum leaf beetle—P. Weston
 - Influence of creeping bentgrass cultivars on the biocontrol efficacy of microbial inoculants—E. Nelson, F. Rossi
 - Evaluation of seasonal variations in *Carcinops pumilio* dispersal and potential for suppression of dispersal behavior (year 2)—D. Rutz, P. Kaufman, S. Long, K. Waldron
-
- Comparing weed suppression in no-till and conventionally tilled pumpkin systems that utilize stale seedbed techniques and transplants—T. Blomgren
 - Integration of insecticides and biological control tactics for sweet corn—F. Musser, A. Shelton
 - Evaluation of harpin for the control of insect-vectored bacterial wilt of pumpkin and comparison of cucurbit crop types and cultivars for their attractiveness to cucumber beetles and susceptibility to bacterial wilt (year 2)—M. McGrath, S. Beer
 - Flea beetle and the incidence of Stewart's wilt in New York sweet corn—T. Kuhar, L. Stivers, H. Dillard, A. Cobb
 - Managing Stewart's wilt with seed treatments and variety selection—L. Stivers, T. Kuhar, A. Taylor
 - Control of blossom, shoot and rootstock fireblight in young, dwarf apple trees through nutrition, pruning and growth regulators (year 2)—T. Robinson, H. Aldwinckle, J. Norelli
 - The impact of turfgrass pest management system techniques on surface and groundwater quality—A. Petrovic, Z. Easton
 - Evaluation and utilization of allelopathic *Festuca rubra* turfgrass cultivars and selected groundcovers for alternative weed management strategies in the landscape—L. Weston
 - An integrated approach to managing fly pests in dairy calf greenhouses—D. Rutz, P. Kaufman, K. Waldron

Top: Growers struggle mightily against weeds whether their plants are in the field or under glass. When weeds become resistant to herbicides, like the triazine-resistant common lambsquarters pictured above in a corn field, a difficult problem may seem unmanageable. IPM stresses the use of several techniques at once, which often provides a cushion should one tactic fail. A reduced reliance on pesticides also helps to delay the development of pesticide resistance in pests. Photo: K. Waldron

Education and demonstration

Monitoring, forecasting, and economic thresholds

Biological control and pest biology

Multifaceted projects

Pest-resistant crops

Cultural methods

Pheromones; biorational and conventional pesticides

- Breeding and characterization of thrips resistance in cabbage (year 2)—P. Griffiths
- Introgression and characterization of black rot resistance derived from *Brassica carinata* in cole crops—P. Griffiths
- Breeding and evaluation of squash and pumpkin with multiple disease resistance (year 4)—R. Robinson
- Efficacy of resistance to scab in transgenic 'McIntosh' apple exposed to populations of *Venturia inaequalis* (year 2)—D. Gadoury, R. Seem, J. Norelli, H. Aldwinckle, J. Bolar
- Reducing damage from potato leafhoppers on alfalfa in New York through cultivar selection: A comparison of resistant vs. susceptible cultivars under insecticide treatment and no treatment (year 4)—J. Hansen, J. Miller-Garvin, K. Waldron, D. Viands
- Developing an IPM response to a new wheat health threat in New York: Wheat soilborne mosaic virus—G. Bergstrom, L. Davidson, M. Sorrells, S. Gray
- Analysis of onion management practices as they relate to levels of *Aspergillus niger* (black mold) and development of IPM scouting protocols for black mold (year 2)—T. Rusinek, J. Mishanec
- Managing onion thrips in fresh market cabbage—J. Curtis, A. Shelton
- Feasibility of sanitizing apple field bins to eliminate postharvest pathogens—D. Rosenberger
- Using herbicide-resistant corn hybrids to establish an alfalfa cover crop (year 3)—N. Gift, R. Hahn, J. Mt. Pleasant
- Managing quackgrass infestations as cover crops in herbicide-resistant corn (year 2)—N. Gift, R. Hahn, J. Mt. Pleasant
- Evaluating new nozzles and an air-assist sprayer for improving spray coverage and powdery mildew control on underleaf surfaces—M. McGrath, A. Landers
- Controlling oriental fruit moth in peaches using pheromone disruption—D. Breth, A. Agnello, H. Reissig
- Management of the obliquebanded leafroller and organophosphate insecticide resistance with soft pesticides in New York apple orchards (year 2)—H. Reissig, A. Agnello, J. Nyrop, R. Straub
- Evaluation of pheromone disruption in combination with insecticide applications for control of peachtree borers in peaches—A. Agnello, D. Kain
- Reduced rates of Roundup Ultra and tank-mix partners for herbicide resistance management—R. Hahn
- Herbicide-resistant corn for reducing use of residual herbicides and for wirestem muhly control (year 3)—R. Hahn



Distribution of funds for the NYS IPM Program: Agriculture, 2000–2001

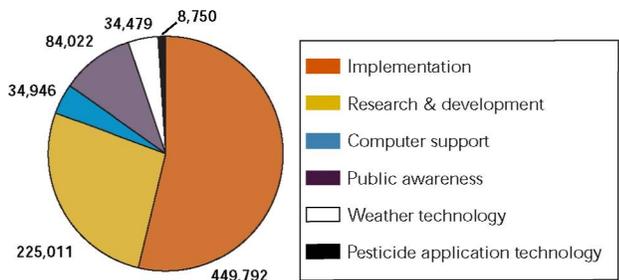


Photo above (and on cover): **This apple tree only looks ghostly.** Research across the country has shown that kaolin clay film protects fruit trees, grapes, and vegetables from over a dozen insect and mite species. Cornell researchers funded by the Organic Farming Research Foundation are evaluating this product's potential in New York's wetter climate. Even with an unusually wet spring that made it difficult to keep the trees properly coated, the clay nearly halved the damage caused by one insect pest, the plum curculio. Photo: A. Agnello

Project leaders: A. Agnello, H. Reissig, D. Combs

How easily could you find out about research like this? The NYS IPM Program is connected to regional, national, and international IPM efforts—to over 150 groups, including the new Northeastern Pest Management Center, grower groups, universities, professional associations, businesses, crop consultants, and pest managers. We bring this wealth of IPM knowledge to New York growers.

“Money well spent...
IPM is important
to all of us.”

—G.W. Miller, Owner,
HG Miller Farm, Inc.

Thriving further afield— community IPM

Simple and sophisticated. Common sense and cutting edge. Scientific and—above all—sustainable. It's the combination that makes IPM for homes, parks, and workplaces (called "community IPM") so appealing and effective. Here's what we've done this past year to make New York State a better place to live, work, and play.

Schools ask, we investigate: Nontoxic ways to manage wasps and their kin



Yellowjackets. Bald-faced hornets. Paper wasps. While these insects do a great job of controlling cabbage worms and other pests, they're *persona non grata* around school yards and public buildings. After all, in susceptible people a single sting can cause a severe reaction. But can you keep them away without using pesticides? Generally, yes—according to research this past year at several schools, a county farm, and a jail. Prevention is the first line of defense; caulking and sealing cracks keeps them from nesting in wall and attic cavities. Scouting comes next: identifying their nests and foraging areas early in the season makes stinging insects that much easier to deal with. Removal techniques for hornet and wasp nests range from hosing nests down with a high-pressure water gun, to spraying them with mint oil, to vacuuming them. Pineapple juice cocktails lured thousands of yellowjackets to traps. But is trapping effective in reducing the risk of being stung? This year, researchers hope to answer that question.

Project leaders: L. Braband, C. Klass, J. Rodler, J. Gangloff-Kaufmann

Scientists root out underground pest

Several species of parasitic nematodes, tiny root-feeding wormlike organisms, may cause unthrifty turf—turf that can die rapidly if it's stressed, whether from lack of rain, or being cut too short, or too many people tramping over it day after day. New York's 800 golf courses, comprising over 80,000 acres, often have all three conditions going at once—along with diseases, insects, and more. Yet little research has been conducted on the severity and extent of nematode damage, and sampling techniques that distinguish it from other turf problems have been all but nonexistent. That's even though the consequences of choosing the wrong treatment could mean no improvement and money wasted—or worse yet, continued turf decline or death. Now IPM researchers have identified the types of nematodes commonly found on cool-season turfgrasses and learned more about their distribution across a putting green—information that should lead to better sampling procedures.

Project leader: K. Snover



They're everywhere. We're catching up. Pests are equally at home on a farm and in a school cafeteria.

Our community IPM program is growing to provide environmentally sensitive options to pest managers and homeowners. IPM projects can be found in new territories—schools, office buildings, museums, parks, and town halls. Photo: K. English-Loeb



IPM extension educator Lynn Braband decided that a powerful water gun is a great tool for removing small wasp nests from school buildings (ski poles work well, too). Photo: J. Shultz. At left: paper wasps building a new nest. Photo: J. Shellman-Reeve



Yes, he really is vacuuming the golf course. Why? To find out where the annual bluegrass weevil congregates so future treatments can focus on those areas. Such spot treatments provide effective management with the smallest amount of pesticide and are the preferred IPM approach.

A modified leaf vacuum allows extension educator Joe Heller to sample for the surface-dwelling larvae. The vacuum can be used anywhere and is less obtrusive to golfers than other devices tested during this IPM study.
Photo: G. Couch

Project leaders: T. Schongalla, J. Lee, J. Heller, G. Couch, P. Vitum

Encores for ecology play

The script is simple, the props are plain. But that makes it all the easier for kids to join in. And they do, enthusiastically, when the Underground Theater comes to town. In this IPM-funded project, the audience is the cast for “The Community Beneath Our Feet,” which tells the story of the beneficial but largely unseen organisms that build healthy lawns. A “pre-test” and “post-test,” cleverly built into the action, showed that kids got the take-home message: choose low-risk methods for yard care! From schools to county fairs to summer recreation and library programs—over 350 kids took part this past year. Now the playwrights (extension educators in Genesee County) have a new challenge: to meet the demand for the play, statewide and beyond, from teachers, club leaders, museum educators, master gardeners, and even farmers with educational activities on the farm.

Project leaders: P. LaPoint, G. Culver, C. Malone

IPM on the air and on the streets

“Very timely.” “Please continue to send.” “A real work... alternatives admirably and effectively depicted...nothing but good can come of it.”

These comments on return postcards from radio announcers indicated that our first series of radio spots are reaching listeners at up to 160 stations in every region of the state. Some stations report playing them ten times a week. The 30-second messages describe techniques listeners can use in their homes and yards to discourage common pests. The spots also tell about our website and give our 800 number. These new public service announcements are a great way to make “IPM” a household word.

Another way the IPM Program helps towns, cities, and our neighbors adopt IPM is by supporting the educational efforts of government agencies. Albany County needed to educate its municipal employees about pest management in offices, so we helped create a coordinated brochure, poster, and display for their campaign. We also helped Erie County with their IPM outreach projects. Photo: Erie County Department of Health

And we’re not the only ones using innovative methods to educate the public about IPM. Thousands of commuters see the billboard pictured below or its companion bus ad every day. Created by the Erie County Health Department with advice from IPM staff, 20 billboards and 30 bus ads are rotating through Buffalo and all of Erie County—and are slated to appear in every legislative district in the county.

Project leaders: C. Koplinka-Loehr, J. Shultz (PSAs), J. Eiss, P. Tripi, K. Montgomery (billboards/bus ads)

RATS

If You Feed Them, They Will Come!

Use Solid Containers For Garbage
Cover All Dumpsters & Trash Cans

Sponsored by Erie County Department of Health www.erie.gov

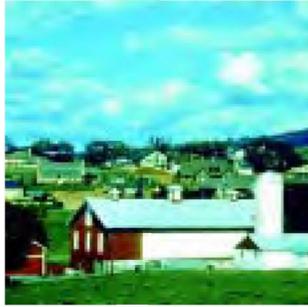
Joel A. Giambra - County Executive Anthony J. Billitter IV, M.D. - Commissioner of Health

LAMAR

For a new approach, municipalities turn to IPM

New York's cities, towns, and counties have tens of thousands of facilities staffed by hundreds of thousands of workers and used by millions of people. They deal with age-old problems: rats, cockroaches, pigeons, quackgrass, and dandelions—even mildew. And they deal with them in places ranging from playing fields, museums, and office buildings to nursing homes, jails, and hospitals. Even with conventional methods, managing these pests is a formidable task.

Adding to the challenge, new rules requiring prior notification of pesticide use have been adopted in some places. Meanwhile, several heavily populated areas—including



Albany, Westchester, and Suffolk counties—have passed sunset laws that phase out pesticides. In each county, representatives from the public, industry, local government, and regulatory agencies are coming together to forge policies that rely increasingly on integrated pest management. And they're asking us to help them.

It's no picnic maintaining Westchester County's five public golf courses. They operate with about three times the traffic and a third of the materials and equipment of many private courses. Although products for use on some pernicious diseases of turf are exempt under Westchester's recent phase-out legislation, chemical pesticides are prohibited for everything else, from grubs to dandelions. IPM demonstrations on Westchester's golf courses showed what's involved in using natural controls and tested new products. One—a natural substance secreted by soil microorganisms—offered good control for annual bluegrass weevil grubs, a very destructive pest in the metro New York area. Initial trials with a tiny wormlike nematode that parasitizes the weevils didn't result in thorough control but were promising; this year's research will build on what was discovered. Meanwhile, other IPM-funded work explores turfgrasses that excrete weed-suppressing chemicals from their roots, which may someday help keep dandelions, quackgrass, and other weeds at bay.

Field surveys in Albany County showed that pigeons pose a major problem. Pigeon droppings can build up by the bushful in inaccessible places, corroding roofs and window ledges. When they accumulate near air vents, disease spores often waft in to contaminate workspaces. *Build them out* is the IPM

Both pests and pest management practices may pose risks to water quality and our health. Pest management can become contentious in public spaces such as parks and schools and where suburbs meet farms. IPM may help people find common ground because it offers science-based solutions that are practical and flexible; the nature of IPM is to balance many goals.

STRONG ECONOMY



Erin M. Crotty, Commissioner,
NYS Department of Environmental
Conservation

"We need creative approaches to protect our environment and ensure clean air and clean water for all of us. We need them now."

IPM combines innovative science, environmentally sensitive technologies, and natural solutions for managing pests. It's making a difference in our schools, parks, public buildings, gardens, city housing...all over New York.

The one IPM tip I recommend to everyone? Think.

Think before you spray. Why are the pests there? How did they get in? What are your best options? For answers, turn to the NYS IPM Program."

motto: install exclusion devices such as bird netting, electrified tracks, and porcupine wires that discourage roosting and nesting. Our program is providing pest management manuals, displays, scouting expertise, and much more to help Albany County meet the challenges of the new regulations. We're also seeing how often (and how well) common-sense solutions work in tandem with our groundbreaking research on biological controls and environmentally sensitive products.

At one Suffolk County office building, troops of under-appreciated ants were thronging on the windowsills and traipsing across office desks. A group of six teens from the Suffolk County Youth Community Corps spent three afternoons cleaning and caulking—cleaning to wash away the ants' scent trails to known food sources, caulking to exclude them where possible. Next, they set up bait stations inside and out.

Meanwhile, at an agency across town, the mice on the second floor were raiding everyone's cookie drawers. Sanitation and traps were the first line of defense, while future structural repairs will make entry a more daunting prospect for mice. And whatever management system we employ, educating ourselves and others is key. At both Suffolk locations, IPM's educational materials helped workers understand pest biology and how simple changes in their habits can thwart pests.

This story describes several research and staff projects, with contributions from: K. Bonds, L. Braband, J. Burns, K. Carnes, G. Couch, T. Gallagher, J. Gangloff-Kaufmann, P. Hadad Hurst, J. Heller, T. Lavigne, J. Lee, R. Muscarella, J. Rodler, T. Schongalla, P. Vittum, and L. Weston

COMING SOON:

Lawn Rangers.

 These volunteers will help homeowners in Westchester and Putnam Counties understand how their lawn care practices affect water quality, and encourage them to adopt IPM and other "green" techniques to grow and maintain healthy lawns. Cornell researchers and extension educators created *The Homeowner's Lawn Care and Water Quality Almanac*, pictured above, to complement the program (they're also training the "Lawn Rangers"). The New York City Department of Environmental Protection, NYS IPM Program, and New York Community Trust's Henry Phillip Kraft Family Memorial Fund, through its affiliate, the Westchester Community Foundation, helped fund the project. The almanac was written by Eva Gussack and Frank S. Rossi, illustrated by Jim Houghton of The Graphic Touch, and produced by Cornell's Media and Technology Services.



Project leaders: T. Schongalla, J. Lee, J. Heller, A. DeCordova, J. Dampier

The IPM Discovery Center. This multi-media exhibit will open to the public in summer 2001 as part of the Learning Farm in Canton, near the St. Lawrence River. North Country residents and agricultural producers will explore basic IPM principles and best management practices in an environment that combines the best modern and classic educational techniques. But if wireless internet services deliver as promised, the exhibit may as likely be found in a mall, on a fairgrounds, or in a school.

Project leader: S. VanderMark

IPM DELIVERS

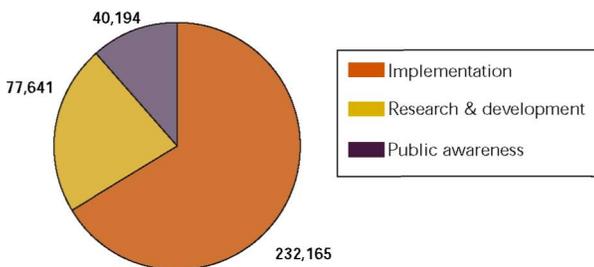
IPM funded projects— community



- The underground theater presents “The community beneath our feet”—P. LaPoint, G. Culver, C. Malone
 - “Lawn ranger” volunteer training—T. Schongalla, J. Lee, J. Heller, M. Keith, J. Dampier
 - IPM workshops for schools and/or municipal properties—L. Braband
 - Advanced pest diagnosis workshop for master gardeners and greenhouse/nursery professionals—G. Culver
 - Integrated pest management field day: focus on diagnosis—B. Eshenaur, S. Rosenblum
 - Community IPM discovery center—S. VanderMark
 - IPM for greener lawns and landscapes—K. Stewart
 - Community IPM educational resources—R. Baglia, D. Weiner
 - Garden retailer training (year 2)—S. Mallozzi
 - Improving diagnostic skills through regional training sessions—K. Snover
 - Putting IPM to work in schools and institutions—A. Ivy
 - IPM for New York State ants—L. Braband, C. Klass
-
- Stinging insect pest management: Pilot IPM project in New York State—L. Braband, C. Klass, J. Rodler, J. Gangloff-Kaufmann
 - Evaluation of alternative grass types on low maintenance athletic turf—J. Grant
 - Facilitation of school district IPM implementation—L. Braband
 - Control of white grubs with beneficial nematodes on school athletic fields—J. Gangloff-Kaufmann, J. Burns, T. Yeh
 - Orange County school IPM—R. Baglia, D. Weiner
 - Current pest management practices of school districts in New York State—L. Braband
 - 2000 Westchester County golf course IPM demonstration project—T. Schongalla, J. Lee, J. Heller, G. Couch, P. Vittum
 - Impact of scarab grub management tactics on non-target soil fauna—M. Villani
 - Organic management of turfgrass: A comparison of composts in Monroe, Nassau, Tompkins, and Tioga Counties—J. Lamboy, J. Grant, B. Eshenaur, W. Nelson, T. Yeh*
 - Evaluation of golf course turf management systems with reduced chemical pesticide inputs—J. Grant, F. Rossi
 - The Cornell turfgrass hotline: A pest management decision-making tool for extension staff and turfgrass managers (year 2)—F. Rossi, E. Gussack
 - Evaluation of turfgrass phytonematode population distributions on a New York State putting green—K. Snover

* This project continued into the 2000-2001 field season with funding from the previous year. Although the project’s report is included with those funded in the 2000-2001 cycle, its funding isn’t reflected in the chart below.

Distribution of funds for the NYS IPM Program: Community IPM, 2000–2001



Education

Research,
development,
implementation

Photo, top: **Abandoned tires become home to the next generation of mosquitoes (and the next one, and the one after that, and...).** Discovering West Nile virus in New York reminded us that mosquito control is an important public health concern. To reduce their populations, the NYS Department of Health promotes IPM strategies such as eliminating mosquito breeding sites. The NYS IPM Program’s brochure and new radio PSA urge New Yorkers to search for anything that collects water, such as an abandoned tire, outdoor planter, rain gutter, or garbage can. Then keep it covered, keep it clean, or dump out any standing water twice a week. Photo: M. Woodsen

For more information:

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Funding opportunities:
nysipm.cornell.edu/
reports/fundingopps.html

Cover photos (clockwise, spiraling in from top right)

- Apple tree coated in kaolin clay, A. Agnello
- Striped snails on a grape vine, T. Martinson
- Aphids on a flower bud, J. Sanderson
- Expectations change when farm meets suburb
- Grower and extension educator discuss a greenhouse biocontrol project, G. Couch
- Onions readied for weighing to compare yields on IPM and conventional plots, C. Petzoldt
- Water gun blasts wasp nest off school, J. Shultz
- Canada geese can be pests, too
- Checking a pheromone trap, A. Agnello
- Before releasing predatory mites, an extension educator makes sure they're healthy, G. Couch
- Vacuuming the larvae of annual bluegrass weevils, G. Couch
- Fly strips in a dairy greenhouse, P. Kaufman
- Viburnum leaf beetle larvae, P. Weston

New York State IPM Program

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

RESEARCH: Each year, the New York State IPM Program provides funds to scientists, Cornell Cooperative Extension field staff, growers, pest managers, and others who develop and test IPM methods.

EDUCATION: Our staff teams with other extension educators, growers, university faculty, municipal governments, schools, private pest managers, and many others to develop workshops, websites, teaching modules, hotlines, diagnostic services, brochures, presentations, demonstrations, and more, on a wide range of IPM topics.

IMPLEMENTATION: We help growers, schools, and municipalities train their staffs, craft and implement IPM policies, and solve existing pest problems. We support consultants, extension staff, and volunteers who provide IPM information to the public. And we sponsor pest alerts and weather forecasting services to provide timely, local information for growers and pest managers.

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