

## The year in review 2002-2003

### *New York State Integrated Pest Management Program*



Cooperative Extension



## New York State Integrated Pest Management Program

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It is with a deep sense of appreciation that I present to you the New York State IPM Program's *Year in Review 2002-2003*. Without the commitment of the many people who value the contributions that integrated pest management makes to our economy, our health, and the environment, we would not have the breadth of support we have experienced.

I want to extend a sincere "thank you" to those who are supporting the NYS IPM Program during these challenging times. The list includes members of the New York State Legislature, the New York State Farm Bureau, Susan Henry—Dean of the College of Agriculture and Life Sciences at Cornell University—and many, many others.

The funding we received in 2002-2003 permitted us to remain highly productive and to continue providing the latest IPM methods to New York's agricultural industry. Examples of how these resources were invested include

- offering free access to pest forecasting systems (the Northeast Weather Association), beneficial to thousands of users;
- developing a pest management record-keeping system (TracApple), important to apple growers and others;
- creating integrated crop and pest management websites for field crops, turfgrass, and trees and shrubs;
- ensuring accessibility to information (the IPM website is visited almost 1,000,000 times a year);
- developing and delivering new IPM knowledge through our grants program (see the list in the annual report).

In addition to our agricultural IPM program, our Community IPM Program continued to help address the pest management needs of urban and suburban clientele where they live, work, and play. The opportunities are unlimited.

Last, I cannot stress how important partnerships are to the success of the NYS IPM Program. Along with our staff, many Cornell faculty are developing new IPM tools and seeing them implemented on farms and in urban settings. Partnerships among the 12 states in the Northeast are also being fostered by the Northeast Pest Management Center, and several IPM staff hold leadership roles in this multistate program.

A combination of talent, support, and earnestness makes for excellence in our program. I thank you for being a part of it and for making a difference.

Sincerely yours,

Michael P. Hoffmann  
Director





Our program received the U.S. EPA Region II Environmental Quality Award, the agency's highest honor, last April. NYS IPM Program Director Michael Hoffmann (far right) and assistant directors Jennifer Grant and Curtis Petzolt accepted the award in New York City.

## One year and 8,500 people later

How many people do *you* talk to in a year? We gave 209 presentations, speaking to more than 8,500 people. Many of these carried the message to others in their line of work, sharing how to manage pests in ways that are sustainable, economical, and healthy for humans and the environment.

Staff members also worked in cooperation with dozens of scientists, Extension educators, and others this year, discovering and refining ways to curb pests, then demonstrating these for New Yorkers. We supported 52 research and education projects with our state funds, bringing the cumulative total since 1985 to 947.

While all this was happening, we reached out in other ways. Our website got 750,000 hits. We began posting new pest management guidelines online. We went on the air with the IPM message, providing 165 radio stations with snappy public service announcements. And our affiliated networks (sweet corn trap; NEWA; Vegetable MD Online; *Branching Out*) reached thousands of people.

## With swede midge, an ounce of prevention...

This tiny pest isn't much to look at. It's not even a confirmed resident of New York. But the swede midge has the experts nervous. Since the late '90s, it has devastated up to 90 percent of cabbage, broccoli, and cauliflower crops at the epicenter of its spread in neighboring Ontario, Canada. Those areas are now under quarantine. With New York vying as the nation's top producer of cabbage, growers and food processors of this \$87 million crop have a right to be worried.

The swede midge is difficult to manage with pesticides or by any other means, so vigilance is the best defence. That's why researchers funded by the NYS IPM Program scouted 1,900 acres of crucifers in thirty townships. They didn't find it—which provides some breathing room during which to develop protocols for keeping the midge out of the state. At the same time, the Program funded nine grower meetings and created a color fact sheet to educate growers, industry reps, and researchers about the midge, thus lessening the likelihood that this tiny pest will sneak in undetected.



Now you see it—No, you don't. Containing the spread of swede midge is a priority in Canada, and scouts inspect fields regularly.

(Right) Nipped in the bud: it's curtains for this cabbage, stunted by swede midge, an invasive pest (native to Europe) so tiny that for several years the damage was thought to be a nutritional deficiency. The swede midge was finally identified in Canadian cabbage fields in 2001. Photos: J. Kikkert

Project leaders: J. Kikkert, C. Hoepting, A. Shelton



*In a handful of typical healthy soil*



It may look like a slow game of TAg, but it's a fast learning curve. TAg provides a chance for busy people to bring crop and pest issues to the forefront at a time and in a place that will be considered, addressed, and remembered.  
Photo: K. Wise

Project leaders: K. Wise, M. Stanyard, J. Miller, K. Evans, K. Chabarek

## Tagging around teaches IPM

Your average dairy farm in New York has 95 cows, 415 acres, and upward of a gazillion bugs. Considering how much time it takes to milk those cows and till those acres, it's no wonder that keeping on top of insect pests—as well as weeds and plant diseases—gets lost in the crush of a busy week.

That's why NYS IPM and Cornell Cooperative Extension educators place so much emphasis on TAg—"Tactical Agriculture"—teams. TAg turns farm fields into open classrooms for farmers. To bring key issues home, trained scouts visit those fields every week to update team members about where the pests are and if they are likely to cause problems.

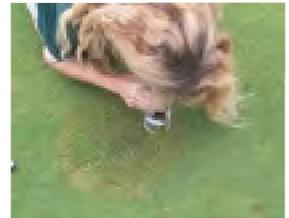
In 2002, growers managing over 23,600 acres of corn and forage crops saw plenty of bugs—and weeds and diseases, too. At meetings hosted by each team member in turn, they learned to identify pests and crop problems, use thresholds, and much more, including underlying pest management principles and steps to the healthy soils and planting practices that help keep pests at bay.

## IPM gets underfoot at U.S. Open

When pros like Tiger Woods master courses like Bethpage Black with consummate power and grace, who gives more than a passing thought to the grounds crews? But they work to exacting standards to deliver US Open Championship playing conditions. Daily mowing to a tenth of an inch on putting greens. Rolling, topdressing, brushing. And pesticides. With current technology you can't do without 'em.

Or can you? All across New York, communities are taking a hard look at pesticide use—and passing laws that restrict it. Meanwhile, the EPA is scrutinizing the safety of many common pesticides. Some that golf courses relied on for years have been taken off the market. More could go.

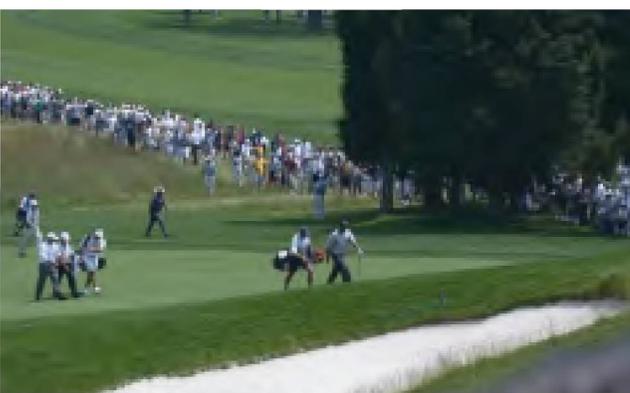
Besides, lots of superintendents want to find low-impact ways to manage turf. But they need to keep playing quality superb. That's why the NYS IPM Program is cosponsoring the most innovative and progressive pesticide reduction project in golf history—on Bethpage Green, in Nassau County. With two years of research under their belts, scientists have reduced pesticide use by 46 percent—yet turf quality remains high.



Micromanaged turf—that's what it takes if you want high-powered play on low-pesticide greens. And at the micro-level you can see it all: the bugs, the fungi, the works, to make decisions that cut pesticide use way back. Photo: J. Grant

(Bottom left) It's U.S. Open week at Bethpage Black, as Tiger Woods leads the pack. Just a few greens away, with the help of IPM staff, grounds crews are working to find IPM solutions to a gamut of special problems that golf courses face. Photos: (bottom left) J. Grant; M. Woods

Project leaders: J. Grant, F. Rossi





Knee deep in bluegrass? New IPM planting protocols promise more feed, less weed in a bale of hay. Photo: C. Koplinka-Loehr.

Project leader: R. Hahn

Christmas tree growers who want to cut pesticides need to time sprays to coincide with disease cycles. Photo: Cornell Univ. Photo

Project leaders: S. Mallozzi, G. Couch



## Seed saves \$\$\$, herbicides

Roughstalk bluegrass, native to Europe, invades alfalfa fields. It matures so early that its stems are already woody and hard before the first cutting of hay in late spring. Farmers have been using herbicides to control the grass—but unfortunately, herbicides also kill desirable grasses such as timothy that farmers seed into their alfalfa.

Now IPM-funded researchers tested whether a higher seeding rate of timothy could eliminate the niche that bluegrass occupies. They found, indeed, that it does—plus it cuts costs. Farmers might pay \$2,400–3,600 to spray herbicides year in and out on a hundred acres of hay, but investing in a higher seeding rate of timothy would run them only \$750 for a stand that lasts three or four years. Not only that, but milk yields per acre are higher when farmers seed in timothy.

## Forecast: Sunny with a chance of IPM

Powdery mildew on your grapes? Potato leafhoppers on your alfalfa? You can always blame it on the weather. And why not? Rain or drought provoke plant diseases, especially those on leaves and fruit. Wind and frost make for heavy insect pressure or none at all—depending on the pest in question. So weather-based pest forecasts are a boon to the farmer.

The Northeast Weather Association (NEWA) has been providing forecasts for farmers for seven years now. Go to their website (<http://newa.nysaes.cornell.edu>) and you can find up-to-the-minute forecasts for everything from cabbage maggots to early blight of potatoes to black mold in onions. Thirty-six data loggers in 18 counties feed weather data to command central, and the results—pest forecasts for alfalfa, apples, cucumbers, grapes, onions, ornamentals, potatoes, squash, sweet corn, and tomatoes—are just a mouse-click away. In fact, this past year the website got over 34,000 hits—up 40 percent since we provided free access, while membership in NEWA skyrocketed 2,000%. Don't have a computer? The forecasts, tallied and redistributed in Cooperative Extension newsletters around the state, go into 1,200 farm homes every week.

“Thanks to NEWA, we save thousands of dollars every year on pesticides for late blight on our 220 acres of potatoes,” says Dave Votypka of Wayland, NY. “We’ve probably saved at least \$75,000 since NEWA began.”

Project leaders: J. Gibbons, C. Petzoldt, T. Weigle, C. TenEyck

## Santa's helpers check trees for naughty, nice

Santa's helpers down on the farm—the Christmas tree farm—work hard to keep Christmas green in Dutchess County. By April, scouts are out looking for pests, including rhabdocline—which many growers consider to be the #1 killer of the ever-popular Douglas fir tree. This deadly fungal disease usually begins releasing spores by mid-spring and may keep it up well into early summer. IPM-trained field scouts visit each farm in the county's Cornell Cooperative Extension Christmas Tree IPM Program. Growers use the scouts' reports to know when pest outbreaks are likely.

*there are more creatures*



Spring cleaning may not look like this at your house, but it's Community IPM in action. At left, a hot-water machine cooks weeds in the pavement, replacing herbicides. Below, a long-nosed vacuum sucks up stinging insects from the crannies of a school building. Photos: (vacuum) J. Gangloff-Kaufmann; J. Grant



## Video helps city foresters turn over new leaf

Street trees are the original multi-taskers. The value of the services they provide for New Yorkers—stormwater management, energy conservation, pollution abatement—runs in the millions of dollars per year. Yet street trees often get short shrift. Hard, inhospitable soils. Inelegant pruning by utility crews. Too much reflected light and heat from nearby buildings and streets. Meanwhile they've got to repel pests as they struggle to survive on scanty rations of sun, water, and food while choking on soot and exhaust. Indeed, in many places you could count the survival rate for street trees in difficult sites on the fingers of your hand.

Now *Tough Trees for Tough Sites*, a video funded by the NYS IPM Program, helps urban foresters, municipal arborists, and landscape architects think through what's involved in selecting city trees. "The budget for planting and replacing street trees is a big ticket item in any city's parks department, and they never seem to be able to keep up with all the trees that die," says City Forester Andy Hillman in Ithaca, NY. "This video helps people think through *all* the variables involved in truly matching the tree with the site—and in creating an urban forest that can thrive for generations."

Project leader: N. Bassuk

## Mighty mite is boon in apple belt

Yes, it's color-coordinated with the fruit of its favorite tree. But there's little else that's good about the European red mite. Uncontrolled, it can easily reach damaging densities of 100 mites per leaf.

Yet a natural predator—also a mite—is indigenous through much of New York's apple belt. The problem: some of the sprays used for other, difficult apple pests can also kill the beneficial mite. This past year, Cornell researchers in the Champlain and Hudson Valleys reintroduced predator mites into orchards. They demonstrated their voracious appetite for European red mite and showed growers how easy it is to conserve those beneficials by carefully and selectively applying the new generation of "low-risk" pesticides. They showed, too, how predatory mites rebound on their own if growers simply switch pesticides. Indeed, growers can get complete biological control of red mite within three years from these naturally rebounding populations—but can get it within two years if they also release the beneficials.



Apple trees besieged by European red mites get relief from the beneficial mite *T. pyri* because IPM-savvy growers help conserve populations. Here a yellowish predatory mite feasts on a European red mite. Photo: G. Catlin

Project leaders: J. Nyrop, P. Jentsch

*than there are humans*



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

**Farmers here in New York manage nearly eight million acres of land. They grow crops that consistently rank New York in the top ten in the nation for commodity after commodity. IPM helps keep them there.**



Do hole-pocked leaves wreak havoc on the inner life of strawberry plants? Could be. This meter measures the difference in the rate of photosynthesis between healthy leaves and those damaged by diseases such as leaf blight and leaf scorch. Once we know how that difference corresponds with both degree of damage and crop yields, we'll be better able to devise thresholds that predict whether a spray is needed or not. Photo: M. Woodsen.

Project leaders: W. Turechek, M. Pritts

# Funded Projects—Agriculture

## Demonstration/Education

- Using Apple Scab Pseudothecial Squash Mounts for Timing Early Scab Sprays (Year 2)—D. Rosenberger, Plant Path., Highland
- Biological mite control in Hudson and Champlain Valley Apple Orchards Through the Distribution and Conservation of *Typhlodromus pyri* (Year 2)—J. Nyrop and P. Jentsch, Ent., Geneva
- Controlling Oriental Fruit Moth in Peaches Using Pheromone Disruption (Year 3)—D. Breth, Lake Ontario Fruit Program
- Biological Control of Western Flower Thrips in Capital District Greenhouses (New)—C. Logue, CCE—Schenectady County, and G. Couch, NYS IPM
- Fostering the Use of Predacious Mites for Western Flower Thrips Control in Commercial Greenhouses (New)—G. Couch, NYS IPM
- Prevention of Diseases in Zinnia Plug Production (Year 2)—J. Lamboy, NYS IPM; N. Call, Flower Fields, Elba; R. McCoy, Lilies of the Field, West Falls
- IPM Demonstration and Implementation Plan for Christmas Tree Growers (Year 4)—S. Mallozzi, CCE—Dutchess County, and G. Couch, NYS IPM
- Branching Out, an IPM Newsletter for Trees and Shrubs (Year 5)—G. Hudler, Plant Path., Ithaca
- Tough Trees for Tough Sites: A video and companion booklet to help nursery producers match urban demands—N. Bassuk, Hort., Ithaca
- Detection of Swede Midge in Western New York Crucifer Fields (New)—J. Kikkert, CCE Vegetable Program Ontario County; C. Hoepting, CCE Lake Plains Vegetable Program; A. Shelton, Ent., Geneva
- Implementing a Management Program for Phytophthora Blight of Cucurbits (Year 2)—M. McGrath, Plant Path., Riverhead; C. MacNeil and J. Kikkert, CCE—Ontario/Wayne/Yates Counties; A. Erb, Lake Plains Vegetable Program; T. Blomgren, Capital District Vegetable Program
- Overcoming Barriers to Success in Reduced-Tillage Pumpkin Production: Implementing Effective Plant Establishment and Weed Management Strategies (New)—T. Blomgren, Capital District Vegetable Program
- Implementing Soil Health Monitoring on Vegetable Farms in New York State (New)—T. Blomgren, CCE Capital District Vegetable Program; C. MacNeil, CCE—Ontario County; J. Vanderheide, CCE—Oswego County; A. Erb, CCE Lake Plains Vegetable Program; D. Moyer, CCE—Suffolk County
- Continued Development and Maintenance of the Vegetable Grower News Web Site (New)—J. Mishanec, NYS IPM, and C. Converse, CCE—Washington County
- Using NEWA Internet Resources to Increase Use of Onion IPM (New)—C. MacNeil and J. Gibbons, CCE—Ontario County
- Evaluation of Green Manure Rotational Strategies for Potatoes in Upstate New York (New)—J. Mishanec, NYS IPM
- Implementing a Management Program for *Sclerotinia sclerotiorum* in Snap Beans (New)—A. McFaul, C. Hoepting, and A. Erb, Lake Plains Vegetable Program
- Western NY Sweet Corn Pheromone Trap Network (Year 9)—A. Seaman, NYS IPM
- Alternative Fly Control Methods for Pastured Livestock (New)—K. Bartlett, CCE—Steuben County
- Tactical Agriculture, (TAg) for Eastern New York (New)—K. Wise, NYS IPM
- Integrated Pest and Crop Management TAg Teams in NWNy (Year 2)—M. Stanyard and N. Herendeen, NWNy Dairy Livestock and Field Crops Team

## Research

- Using 1-MCP as a replacement for postharvest drenching with diphenylamine, thiabendazole, and captan for control of superficial scald and rots on NY apples (New)—J. Wargo, CCE Lake Ontario Fruit Team, and C. Watkins, Hort., Ithaca
- An Organic Apple Production System for New York (Year 2)—T. Robinson, Hort., Geneva; A. Agnello and H. Reissig, Ent., Geneva; I. Merwin, Hort., Ithaca; D. Rosenberger, Plant Path., Highland; J. Schupp, Hort., Highland
- Preplant soil compost or fumigation, rootstock disease resistance or tolerance, and previous tree or grass rows as management factors in apple replant disease (New)—I. Merwin, Hort., Ithaca
- Developing Damage and Economic Thresholds for Foliar Disease Management in Perennial Plantings of Strawberry (Year 2)—W. Turechek, Plant Path., Geneva, and M. Pritts, Hort., Ithaca
- Redefining IPM for Strawberry Production under the Emerging Threat of Anthracnose and Strawberry Sap Beetle (New)—W. Turechek, Plant Path., Geneva, and G. English-Loeb, Ent., Geneva
- Monitoring Growing Degree-Days in Commercial Greenhouses for Predicting Western Flower Thrips Emergence (New)—G. Couch, NYS IPM, and J. Sanderson, Ent., Ithaca
- Developing a Cost-effective and Reliable Integrated Management Program for Western Flower Thrips (New)—Sanderson, Ent., Ithaca; G. Couch, NYS IPM; R. VanDriesche, UMass Ent.
- Enhancing the Efficacy of *Beauveria bassiana* for Bedding Plant Insect Pests (Year 2)—J. Lamboy, NYS IPM; M. Brownbridge, Ent. Research Lab, VT; E. Lobbell, Syracuse
- Biological Control of Viburnum Leaf Beetle (Year 3)—P. Weston, Ent., Ithaca
- Evaluation of Hemlocks for Resistance to Hemlock Woolly Adelgid (New)—P. Weston, Ent., Ithaca
- Biological Control of Ground Ivy Using a Rust Fungus (Year 2)—A. DiTommaso, Crop & Soil Sciences, Ithaca, and L. Weston, Hort., Ithaca

on the entire planet, and hundreds

Evaluation and Utilization of Allelopathic *Festuca rubra* Turfgrass Cultivars for Alternative Weed Management Strategies (New)—L. Weston, Hort., Ithaca  
 Development of Bt Collard as a Trap Crop for Cabbage (New)—E. Earle, Plant Breeding, Ithaca  
 Breeding Cabbage for Resistance to Black Rot, *Xanthomonas campestris* (New)—P. Griffiths, Hort., Geneva  
 Breeding and Evaluation of Squash and Pumpkin with Multiple Disease and Insect Resistance (Year 6)—R. Robinson, Hort., Geneva  
 Evaluation of Composts for Managing *Phytophthora capsici* (Year 2)—A. Rangarajan, Hort., Ithaca; M. McGrath, Plant Path., Riverhead; D. Moyer, CCE—Suffolk County  
 Developing a Management Program for Powdery Mildew in Winter Squashes with Resistant Varieties (New)—M. McGrath, Plant Path., Riverhead  
 Evaluation of Phaseolus Germplasm to Identify Resistance to Cucumber Mosaic Virus (New)—P. Griffiths, Hort., Geneva  
 Comparing Effectiveness of Selected Cover Crops Incorporated as Green Manures without and with a Surface Seal Against Root Pathogens of Beans/Vegetables (Year 2)—G. Abawi, Plant Path., Geneva, and J. Ludwig, Plant Path., Geneva  
 Nature and Control of the Aspergillus Black Mold Disease of Onions in NY (New)—J. Lorbeer, Plant Path., Ithaca  
 Evaluation of Fall Planted Cover Crops on Muck Soils (Year 2)—J. Mishanec, NYS IPM  
 Onion Maggot and Seed Maggot Management in Onion Using Insecticide-Treated Seed (New)—B. Nault, Ent., Geneva; R. Straub, Ent., Highland; A. Taylor, Hort., Geneva  
 A New Approach for Detecting Insecticide Resistance in Onion Maggot Populations (New)—B. Nault, J. Nyrop, and A. Shelton, Ent., Geneva; R. Straub, Ent., Highland  
 Identification of Crops which Regulate Soil Population Levels of *Burkholderia cepacia* Causing Bacterial Canker and Sour Skin of Onions (New)—J. Lorbeer, Plant Path., Ithaca  
 Monitoring Black Bean Aphid Pressure, Movement and Distribution in Snap Beans (New)—A. McFaul and C. Hoeping, Lake Plains Vegetable Program  
 Relationship of Sweet Corn Silking Stage to Oviposition by the Corn Earworm (Year 2)—R. Straub, Ent., Highland  
 Trials for the Evaluation of IPM Procedures to Control Insects on Early Season Sweet Corn (New)—J. Mishanec, NYS IPM Program  
 Demonstrating New Technologies for Improved Corn Rootworm Management (Year 3)—K. Waldron, NYS IPM; B. Cox, Crop & Soil Sci., Ithaca; E. Shields, Ent., Ithaca  
 Roughstalk Bluegrass Suppression in Alfalfa-Timothy Seedlings (New)—R. Hahn, Crop & Soil Sciences, Ithaca  
 Developing an IPM Response to a New Wheat Health Threat in New York: Wheat Soilborne Mosaic Virus (Year 3)—G. Bergstrom, Plant Path., Ithaca; M. Sorrells, Plant Breeding, Ithaca; S. Gray, USDA-ARS Plant Path., Ithaca  
 Statewide Survey of Mosquito Breeding, Species Identification and Prevalence on NY Dairy Farms (New)—D. Rutz, P. Kaufman, and L. Harrington, Ent., Ithaca; K. Waldron, NYS IPM



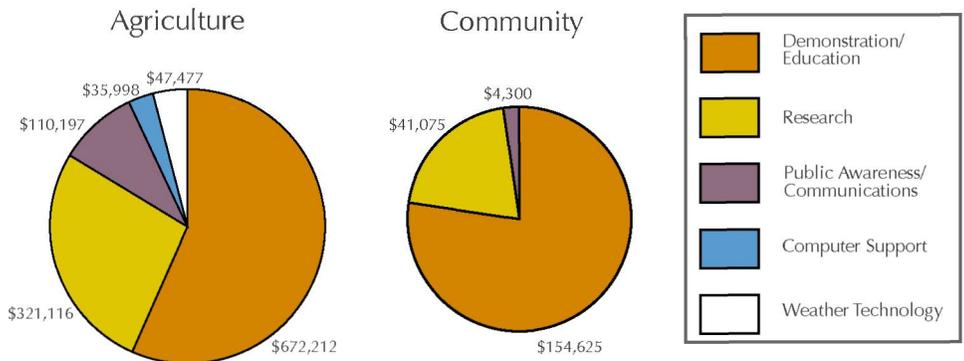
Erin M. Crotty, Commissioner  
 NYS Department of Environmental  
 Conservation

*The Department of Environmental Conservation will continue to work with our partners in search for better ways to keep pests at bay. The collaborative efforts fostered through IPM encourage the development of measures that reduce risks to ourselves, our families, and the environment.*

## Funded Projects—Community

We were unable to award Community grants in 2002–03.

### Distribution of funds for the NYS IPM Program, 2002–2003



This report published by the NYS IPM Program, which is funded through Cornell University, Cornell Cooperative Extension, the New York State Department of Agriculture and Markets, the New York State Department of Environmental Conservation, and USDA–CSREES. Writing: Mary Woodsen. Editing and design: Carrie Koplinka-Loehr. Cornell Cooperative Extension provides equal program and employment opportunities. Printed on recycled paper. 3 M GP 6/03

*of miles of fungal threads.—D. Wolfe*

