NEW • YORK • STATE • AGRICULTURAL • EXPERIMENT • STATION

CORNELL UNIVERSITY **STATION NEWS** GENEVA NEW • YORK

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APRIL 2-9, 1999

BRIEFS

BARTON LAB UPDATE

A firm date has now been set for the 6th floor to start the big move into the surge space: the week of April 26, 1999. The 5th floor will move out shortly afterwards—probably the next week.

Anyone needing DOT-approved boxes for moving chemicals should contact the Environmental Health & Safety office (x466 or ssk19). If requested, boxes can be delivered to Barton loading dock.

REPORTING ODORS

For reporting odor related concerns, please contact Buildings & Properties at x301. B&P will investigate the concern and will page Environmental Health & Safety, as necessary. *Soon Kong*

SURPLUS SALE

Bids will be accepted on a 1978 New Holland Ford 6700 tractor, 1,400 hours, 777F front-end loader, from Monday, April 5 though Friday, April 9. An appointment needs to be made to inspect the tractor with Dave Sharman (x455). Envelope must be marked "Bid Enclosed for Ford 6700" and sent to Tiffany Fisk, PGRU, USDA Bldg. Bids will be opened Monday, April 12, 1999 in Room 105 USDA building at 10:00 am. Posters will be sent to each department with a picture of the tractor.

APPLE GROWERS LEARN TECHNIQUES TO LIMIT PESTICIDE USE AT CORNELL FRUIT SCHOOL

Dave Rosenberger (center) (Plant Pathology, Hudson Valley Lab) examines apple blossoms together with Cathy Ahlers (left) and Fritz Meyer (right). Dave gave several presentations at the Apple IPM In-Depth School about disease management during the bloom, petal fall, and summer periods.

Spring got off to a good start for those New York apple growers who attended the Cornell Apple Integrated Pest Management (IPM) In-depth School on March 9 and 10 in Geneva, NY. The fruit school attracted more than 72 participants.

Jeff Soons, from Soons Orchard, Inc., in New Hampton, NY, just 65 miles outside of New York City, considered the school "a very good indoctrination into all the ins and outs of pest control."

"We don't use IPM as intensely as some growers, but I definitely expect to use some of what I learned," he said. The Soons family has been growing apples for 89 years. They currently farm 25 acres of apples along with an assortment of sweet corn, pumpkins, peaches, and other truck- and farm-market crops. "We have signed up with Orange County Extension Service for help with scouting for insects on our apple blocks hoping to gain information that will help us limit and space out sprays better," he said. Apples are one of the most intensively sprayed fruit crops, because they are very vulnerable to damage from insects and diseases.

"Attendance was highest from New York State," said Art Agnello, Station entomologist and chair of the organizing committee. "There were 40 growers, four consultants, and 15 representatives from industry and government."

The purpose of the course was to provide a forum on the recommended methods of incorporating an integrated pest management and decision process into orchard manage-

(FRUIT SCHOOL Continued on page 2)

(FRUIT SCHOOL, cont.)

ment operations throughout the year. The format of the school was based on grower feedback from previous IPM fruit schools.

"In the past, growers have told us they have difficulty incorporating research-based management recommendations into their day-to-day operations," said Agnello. "We constructed these sessions with more of a grower's-eye view of the topics." Speakers were organized by topics that related to each other, and were asked to relate their recommendations to specific times of the growing season, and to include other issues a grower would be dealing with at the same time.

At the school, 29 speakers presented 52 separate talks on apple topics in the fields of entomology, plant pathology, horticultural science, fruit and vegetable science, natural resources, cooperative extension, agricultural engineering, and production practices. Most of the speakers were from the New York State Agricultural Experiment Station in Geneva, the Hudson Valley Lab at Highland, and CCE. Three guest speakers included Helmut Riedl, from Oregon State University, Starker Wright, from the University of Massachusetts, and Jim Gallott, a grower from Vermont.

Speakers gave their best advice on constructing a pest management plan for each part of the growing season for each developmental stage of apple. Input was solicited from other specialists as well as the school audience on how to best integrate and coordinate each strategy into an overall orchard system. In addition, information was presented on alternatives to the most commonly recommended practices, including promising results of current research trials, low-spray options, and alternative technologies that may be applicable in the near future.

"This school was 'in-depth', not so much because we examined every exhaustive detail and ongoing research effort related to each pest, but by how we considered applying each management recommendation as though we were managing an orchard," said Agnello.

Each participant received a syllabus containing a 280-page "Apple IPM Proceedings," and supplementary articles, bulletins and manuals published by CCE, NYS-IPM, NYSAES, and USDA. Copies of the proceedings are available for $30 by contacting Art Agnello at ama4 or x341.

The event was sponsored by the Cornell Fruit Statewide Program Committee.

ANNUAL PESTICIDE APPLICATOR CERTIFICATION ORIENTATION FOR NEW USERS OF PESTICIDES

The CALS Pesticide Use Policy requires that all new pesticide users attend an orientation concerning the policies, procedures, and guidelines for safe and effective use of pesticides. Use of pesticides is defined as:

- application of pesticides including general maintenance applications for pest control on plants and animals, efficacy testing, impact on biological control agents, leaching, residue analyses, environmental fate, etc.;
- direct supervision over one applying pesticides as described above;
- teaching/demonstration of pesticide applications and/or use; and/or
- recommendation of pesticide application or use.

WHO SHOULD ATTEND: 1) Anyone newly involved in, or who is expected to be involved in, pesticide use, as defined above. 2) Anyone involved in pesticide use, as defined above, who has not previously attended the Core Training.

WHEN: May 11, 1999; 8:15 am - 4:45 pm; 1.5 hr lunch

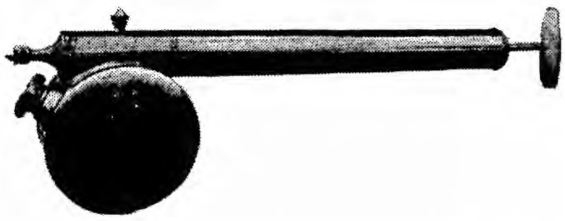
WHERE: On the Ithaca campus; exact space to be announced when number of attendees is more clearly defined.

REGISTRATION: All parties should contact Mary-Lynn Cummings, 8-5-2557 or mc101@cornell.edu. Mary-Lynn will discuss the categories of certification that you require, your eligibility, and other details as necessary. REGISTRATION IS MANDATORY.

ELIGIBILITY: Full Certification is earned if you have applied pesticides during 3 out of the past 5 years, supervised by a certified applicator. Provisional Certification is earned if you do not have the above work experience, but you do have a 2 or 4 year degree, or you have taken a 30 hr accredited course. Provisional certification does not allow you to purchase the pesticides yourself, or allow you to open your own pesticide application business with you as the only applicator. Your provisional status will be removed after 2 years of experience has been acquired.

Combinations of experience and education can reduce provisional status time:

30 hr course = 2 yrs Provisional
30 hr course + 1 yr experience = 1 yr Provisional
30 hr course + 2 yr experience = Full Certification
Associate Degree = 2 yrs Provisional
Associate Degree + 1 yr experience = 1 yr Provisional
Associate Degree + 2 yr experience = Full Certification
Bachelors Degree = 1 yr Provisional
Bachelors Degree + 1 yr experience = Full Certification



Proof of Experience: must be provided on letterhead from the certified applicator under whom you gained your experience and must be within the last 5 years.

(ORIENTATION Continued on page 4)

Biological Weapons Show Promise Against Onion Maggots

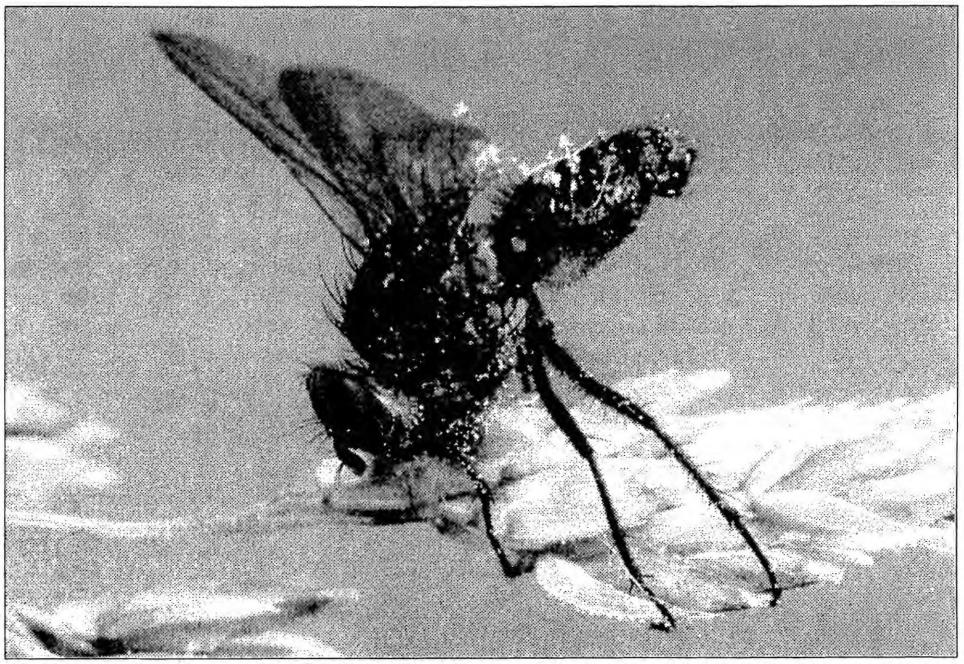


PHOTO: JOE OGRODNICK

Maggot fly killed by naturally occurring fungus. The fruiting bodies of the fungus can be seen on the fly.

The leading enemy of New York State's fall onion harvest is a fly with the Latin name, *Delia antiqua*. Onion growers just call its immature stage the onion maggot and for two decades it increasingly has been wreaking economic havoc in the state's onion fields.

New York's 12,000 acres of commercial onion fields annually produce a crop with a value of between $50 million and $75 million. If a field gets infested with the maggot, between 20 percent and 90 percent of unprotected onion seedlings can be wiped out.

Until now the maggot has resisted attempts at control. But Cornell University agricultural researchers are reporting that two biological tools are showing promise in field tests against the onion maggot: a fungus called *Beauveria bassiania* and a bacterium known as *Bacillus thuringiensis* (Bt).

"The research is encouraging," says Charles J. Eckenrode, Jr., professor of entomology and researcher at the Station. "We've had very good success in the laboratory and Jan van der Heide had good results in the field. *Beauveria* looks exciting, but we have to work out more details." Van der Heide is a Cornell Cooperative Extension (CCE) agent in Oswego County, N.Y.

Cornell laboratory experiments have shown that when *Beauveria*, commercially available as Mycotrol ES, made by Mycotech, is sprayed on seedlings, onion maggot damage is reduced to 8.1 percent from 30.3 percent in untreated plots. The researchers believe that this is the result of increased fly mortality and thus leaves fewer maggots on the seedlings. "We do have evidence that *Beauveria* kills flies, but this is indirect evidence," says van der Heide. The researchers first reported their findings in February at the New York State Vegetable Conference in Syracuse.

In a New York growing season, the onion maggot has three generations. The first is the most destructive because the young plants are very susceptible to maggot damage caused by larval feeding after emergence in late May to early June. Farmers' major line of defense has been soil insecticides, specifically an organophosphate that is applied in the seed furrow at planting. Pyrethroid insecticides are labeled for use on onions, and are sometimes used in an attempt to kill adult onion maggot flies later in the season. Unfortunately, these pyrethroid applications only kill a very small percentage of the flies, because most seek refuge from warm, dry conditions in weedy borders and hedge rows, and consequently spend little time on onion field seedlings.

Since 1996, as an alternative to organophospate, onion growers have received Environmental Protection Agency permission during each growing season to use seed pellets augmented with cyromazine, an insect-growth regulator.

In controlled field plots without soil insecticides, *Beauveria* wiped out the first generation of onion maggots, limiting seasonal damage to between 2 and 10 percent, the point at which the maggots become only a minor nuisance, the Cornell researchers say.

"We still have to learn how to use *Beauveria*, and when to use it. This would enable the growers to reduce their dependence on more conventional pesticides," says Eckenrode. "New control approaches such as Bt and *Beauveria* are urgently needed, so we must continue to invest significant amounts of research and time and attention on the ones that show promise."

Eckenrode says that *Beauveria* fungi occur naturally and are believed not to affect humans. Flies killed by these fungi can readily be found in homes and gardens each year. "By taking one of nature's epidemics against flies, and using it commercially, we hope to speed up the process," Eckenrode says.

In New York, onions are grown very intensively in a highly organic, peat-type soil, known in the industry as muck. This usually requires a yearly grower investment of $3,000 to $3,500 an acre before harvest. The muck soil holds water well and allows the onion bulbs to expand. Even in this favorable environment, plant nutrients must be added at strategic times, and a wide array of pests (including the onion maggot), plant diseases and weeds must be controlled.

Cornell researchers recommend that growers rotate out of onions, if they can. One possibility for rotation is sorghum Sudan grass. Planting it not only breaks the maggot's life cycle, but reduces the nematode population in the muck soil. The grass roots also aerate the ground, allowing increased onion harvests in subsequent growing seasons.

Laboratory and field work discussed here were conducted by Eckenrode and van der Heide; Mary-Lou Hessney, entomologist

(BEAUVERIA, Continued on page 4)

CALENDAR of EVENTS
APRIL 2-9, 1999

MEETING

The **Geneva Arboretum Association** will meet at noon, Wednesday, April 7 in G19 Hedrick Hall (conference room) to discuss the campus' Arbor Day plans for this year. The Association invites anyone interested in this event or other campus landscape planning to participate. Contact the Association's chairman, Martin Goffinet (x392), if you have questions or concerns.

SAVE THE DATE

Friday, July 16, 3:00 pm
Pavilion
Station Club picnic

SEMINARS

PLANT PATHOLOGY

Date: Tuesday, April 6, 1999
Time: 3:00 pm
Place: Room A133, Barton Laboratory
Speaker: Greg Martin
Boyce Thompson Institute and
Dept. of Plant Pathology
Cornell University, Ithaca
Title: Pathogen Recognition and Signal Transduction Events Involved in Plant Disease Resistance

There will be a reception at 4:00 pm.

GENOMICS

Date: Wednesday, April 7, 1999
Time: 3:00 pm
Place: 433 Plant Sci. Bldg., Ithaca
Speaker: Rasmus Nielsen
Organismic & Evol. Biology
Harvard University
Title: Estimation of Population Parameters from Single Nucleotide Polymorphisms

Dr. Nielsen is a candidate for the Statistical Genomics position

BEAUVERIA (cont.)

at the Station; Kathleen Hahn, CCE researcher in Oswego County; Mark Ramos, USDA Agricultural Research Service; and John Dunsmoor, an onion grower in Oswego. *Blaine P. Friedlander, Jr*

ORIENTATION (cont.)

Proof of Education: must be provided via a copy of your degree or transcript, or a copy of the 30 hr course certificate.

You will be required to bring proof of experience and/or education to the exam.

REQUIRED READING: Each applicator needs to have 1) a copy of the Pesticide Applicator Training Core Manual (Fourth Printing, 1998); 2) at least one category manual, and probably two, and 3) the Pesticide Applicator Handbook (PAH). All manuals and the PAH are available from Media Services Publication Orders at 8-5-2080. Media Services can send the manuals to a campus address through campus mail, and they will take Cornell account numbers for payment. We will discuss the required category manuals when you call to register.

Each applicator must also have a copy of the EPA How to Comply manual for information about the Worker Protection Standard. Mary Lynn will send this manual through campus mail to each person who registers.

EXAM: The exam will be offered on campus (in Ithaca) by the DEC on Thursday, May 20, promptly at 1:00 p.m. More details on the exam will be provided at the Core Training.

If you absolutely must begin doing your own pesticide applications before May 20, and you qualify to sit for the exam, you may call Gail Mortimer (716/226-2466) at the DEC to schedule to take the exams in Avon. However, you MUST still attend the Pesticide Applicator Certification Orientation, even after passing the exams.

STATION CLUB MEMBERSHIP DRIVE

The Station Club membership drive is now underway and will continue until April 30. The cost for joining the Station Club is $8 for a family membership and $5 for a single membership. Retirees receive a one-dollar discount.

This is why you should join:

• To receive a discount on the price of Station Club events, such as the banquet, golf tournament, summer picnic, bowling party, holiday party. In fact, the discounts you receive are worth the price of joining, and the more events you attend the more you save!

• To receive a discount on Station Club souvenirs such as T-shirts, sweat shirts, book bags, etc.—always great for gift-giving.

• To support Station Club sponsorship of such events as the Bike/Walk to Work Week, the Corporate Cup team, and the Outstanding Employee-of-the-Year Award.

• To support the Station Club's assistance with such projects as the Sawdust Cafe renovations and Bring Your Child to Work Day.

Contact your Station Club representative to join-up or renew your membership:

Administration	**vacant**
B&P, Security, Fleet & Heating Plant	**Ralph D'Amato**
Communications	**Sandy Antinelli**
Entomology	**Donna Roelofs**
Field Research Unit	**Lee Hibbard**
Food Science & Technology	**Nancy Long**
Horticultural Sciences	
Hedrick Hall	**Gemma Osborne**
Sturtevant Hall	**Kristin Ondik**
Integrated Pest Management	**Cheryl TenEyck**
Plant Genetic Resources Unit	**Tiffany Fisk**
Plant Pathology	**Colleen VanAllan**

CLASSIFIED

FOR SALE: Baby Holland lop rabbits. Small breed, good pets $10 each. Born February 17. Ready now. John Ludwig 539-3155.

SHRUBS AND TREES AVAILABLE: Over 80 varieties of shade trees, flowering trees, native plants, flowering shrubs and foundation plants. Contact Jim Engel (jpe6@nysaes.cornell.edu or x378).