

VOLUME LXXX • NO. 37  
 SEPTEMBER 17-24, 1999

## BRIEFS

### GREEN BEANS ON THE MOVE

If you've been salivating over those tractor trailer loads of green beans on Rtes. 5 & 20 this week, you aren't the only one. According to a report in September's *The Vegetable Growers News*, U.S. consumption of green beans has reached its highest level in two decades: 1.8 lbs per capita, which represents an increase of .4 lbs or about 30 percent in just two years. This is up from a low of 1 lb/person in the late 1980s. According to produce experts at Asgrow, the increase is due to improved bean types, including a new variety they call Greener Beans, and greater consumer interest in green vegetables overall.

Plant breeders at Asgrow have developed newer bean plants that can be harvested young, straight and smooth, with small seeds. They also bred in a more appealing darker green color, as well as good shipping characteristics and shelf life. In a recent survey by Asgrow, 91 percent of the respondents preferred darker green beans to the lighter colored beans.

### DROUGHT MAY LESSEN IN COMING MONTH

The severe drought extending over the eastern portion of the U.S. has hit the mid-Atlantic region the hardest. In New York, the southern and eastern portions of the state have been the hardest hit. The long range forecast for the region through October calls for a better than average chance of above normal precipitation, which would be good news for growers and well owners. According to an article on the drought in *The Vegetable Growers News*, Keigh Eggleston, regional climatologist with the Northeast Regional Climate Center at Cornell, says the forecast is partly based on a more active than normal hurricane season which should bring more precipitation to the region.

## SHELTON TAKES ISSUE WITH THREE RECENT STUDIES ON THE EFFECTS OF GENETICALLY ENGINEERED CROPS

Two prominent entomologists, one from the Experiment Station, warn that three recent studies on the effects of genetically engineered crops have distorted the debate about engineered crops and that this could have "profound consequences" for science and public policy.

The article, "False reports and the ears of men," in the latest issue of *Nature Biotechnology*, is authored by Anthony M. Shelton, professor of entomology, and Richard T. Roush of the University of Adelaide, Australia. They urge that the public should not be swayed "by laboratory reports that, when looked at with a critical eye, may not have any reality in the field or even in the laboratory."

The first of the three studies they comment on was led by John E. Losey, Cornell assistant professor of entomology. This study of the effect of *Bacillus thuringiensis* (Bt) corn on the monarch butterfly "can only be considered a preliminary laboratory study," they write.

In the May 20 issue of *Nature*, Losey and his colleagues reported that pollen from commercial corn, genetically engineered to produce a bacterial toxin to protect it against European corn borers, kills monarch butterfly larvae in laboratory tests. While Shelton and Roush note that this result was expected under such laboratory test conditions, they question whether this test was realistic.

"If I went to a movie and bought a hundred pounds of salted popcorn, because I like salted popcorn, and then I ate the salted popcorn all at once, I'd probably die. Eating that much salted popcorn simply is not a real-world situation, but if I died it may be reported that salted popcorn was lethal," Shelton said in an interview. "The same thing holds true for monarch butterflies and pollen. Scientists have a duty to be incredibly responsible for developing realistic studies. Scientists need to make assessments that are pertinent to the real world."

In the second study discussed in the article, researchers at Kansas State University reported in *Science* that they had discovered corn borer resistance to Bt toxins. Shelton and Roush question the methodology used in the study, "including that the authors did not demonstrate that resistance was actually to the same Bt toxin as in the plant or that the insects could survive on the Bt plant." Even so, they write, "this questionable laboratory study has generated considerable debate over whether the present resistance management policy should be overturned."

(SHELTON, Continued on page 2)



(SHELTON, cont.)

In another recent issue of *Nature*, a University of Arizona study showed that the pink bollworm's resistance to Bt-cotton was recessive in inheritance, but the paper questioned whether resistant bollworms developed more slowly than susceptible bollworms. This could possibly knock out random mating and dilute the insect's resistance in the field. "We hope that the take-home message won't be converted to another premature claim that Bt crops are doomed," Shelton and Roush say in their commentary.

Since the release of the monarch butterfly study, write Shelton and Roush, companies that make the genetically engineered agricultural seed have been confronted by freezes on the approval process for Bt transgenic corn by the European Commission and by "possible trade restrictions by Japan." In the United States, there have been calls for a moratorium on the further planting of Bt-corn.

In discussing the Cornell monarch butterfly report, Shelton and Roush voice their surprise that a "previous and more relevant and realistic study has been largely overlooked." While the Cornell laboratory study showed high mortality among monarch larvae that ingested genetically engineered pollen, an Iowa State University study by Laura Hansen and John Obrycki showed low mortality even when Monarch larvae were fed milkweed that had the highest levels of Bt pollen that would be encountered in the field. Shelton and Roush note that it is unlikely that these high Bt pollen levels would be encountered by the insects in the field, and they say that "few entomologists or weed scientists familiar with the butterflies or corn production give credence to the *Nature* article."

Crops are genetically engineered with Bt to control pests without the use of broad spectrum insecticides, which may cause environmental and human health problems. For example, the European corn borer is the most notorious pest that corn farmers face and causes an estimated \$1.2 billion in crop losses annually. To combat this pest, an estimated 24 to 28 million acres of Bt-corn were planted in the United States in 1999.

B. Friedlander

Now that more and more  
Station employees are  
learning Dreamweaver and designing their own Web pages, here are a few helpful suggestions to make Web pages flow smoother.

## DREAMWEAVER HINTS

By John Zakour

- Have a good title or descriptive banner on all pages. Many people will be entering your pages from a search engine, with descriptive banners they will know where they are.
- List author or contact person at least on the home page.
- It's always a nice touch to have date created and last modified on pages. This lets reader know how current the information is. Many sites are now also including the url on the bottom of the page.
- Have links back to your home page on all pages.
- Use descriptive titles in <TITLE></TITLE>tags. These are what will get bookmarked.
- Use meta tags to help search engines better index or not index your pages. If you don't know what a meta tag is feel free to contact John Zakour at X250.
- Try to optimize image sizes and colors as much as possible. Remember GIF format often works best with line art and JPG works best for photos.
- Use <ALT>tags to describe the image and <WIDTH> and / or <HEIGHT> tags to help the browser load the image more efficiently. Dreamweaver usually fills the <WIDTH> and <HEIGHT> tags for you, but not the <ALT>.
- Make menus more distinctive by placing them in tables with a different background color.
- Try to have the colors and fonts on the page compliment each other.
- Avoid anchoring links to words that are device dependent but don't really describe the item being linked. For instance instead of:  
You may <A HREF="manual.html">Click here</A> for manual.  
Use: A <A HREF="manual.html">manual</A> is available.
- Remember, that while FRAMES may be useful at times, certain search engines do not handle them well, therefore these search engines may not notice your pages.

## CORNELL SCIENTISTS TURN TO THE SHADY UNDERWORLD TO PROTECT VINEYARDS

To do battle against powdery mildew, Cornell scientists have turned to the shady underworld of wild grapes. Underneath wild grape leaves exist tiny hairlike structures called acarodomatia. Tydeid mites, as well as other potentially beneficial mites, make themselves at home among them, says Gregory English-Loeb, assistant professor of entomology at the Experiment Station. What English-Loeb and other Cornell scientists learned is that the mites feed on powdery mildew, which is considered a nemesis to vineyards.

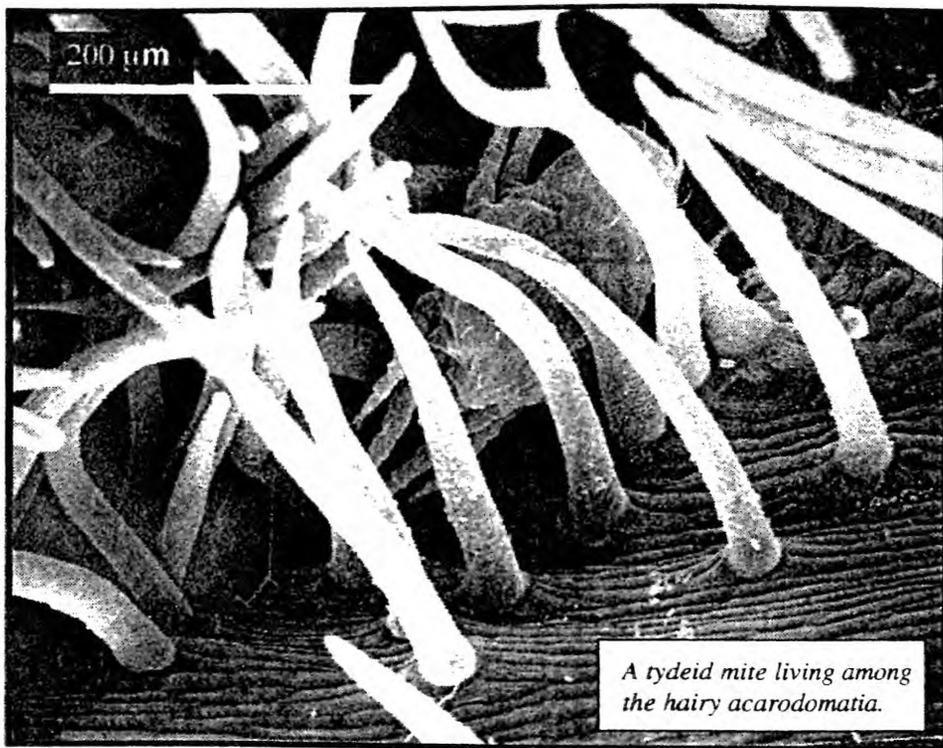
Originally, English-Loeb wondered what ecological role these tydeid mites might play on the grape leaf. They did not appear to feed on the leaf tissue, and, interestingly, he did not find much powdery mildew fungus on plants where the mites were abundant.

Along with English-Loeb, a group of Cornell scientists at the research station began to study interactions between the tydeid mites, acarodomatia and powdery mildew. The scientists are: Robert C. Seem and Wayne F. Wilcox, professors of plant pathology; David M. Gadoury, senior research associate in plant pathology; and Andrew P. Norton, postdoctoral researcher in entomology.

In a series of experiments conducted in the greenhouse and outdoors, the researchers learned that the tydeid mites are capable of dramatically reducing powdery mildew. In one experiment, the mites reduced by 85 percent the powdery mildew's mycelia, the part of the fungus that penetrates and robs the leaf of nutrients. Cleistothecia, the stage of the fungus that overwinters, was reduced by an even greater amount.

Having shown that the mites play an important role in controlling powdery mildew on wild grapes, they wondered if the mites could do the same for popular varieties like Chardonnay, Riesling, Sauvignon Blanc and others. "We are trying to learn how much of an ecological role tydeid mites will have in the world of cultivated grapes," English-Loeb says.

That ecological role could easily be measured economically in New York state. New York is the second-leading state in production



*A tydeid mite living among the hairy acarodomatia.*

of grape juice, behind the state of Washington, and it's second only to California in wine production. The state's grape producers harvest 350 million pounds of grapes annually, worth about \$40 million. With over 100 million bottles of wine made each year in the state, ringing up \$500 million in sales and about \$85 million in state and local revenues, scientists must pay attention to this harmful fungus.

During the 1998 growing season, the researchers successfully established the mites on over 700 rooted cuttings of both commercial and wild grapes in a new vineyard at the Experiment Station. Some of the vines received mites but no fungicides, some vines received both mites and fungicide active against powdery mildew, and the remaining vines received neither mites nor fungicide.

In this current growing season, mildew levels were assessed. Grapevines that received mites and no fungicide had significantly lower levels of mildew than vines without mites or fungicide. The vines that received both the mites and fungicide had the lowest level of disease, according to English-Loeb. "We will need several more field seasons to fully evaluate the potential of this mite as a biological control agent of powdery mildew, but our initial results are promising," he says.

Meanwhile, research is continuing on why the mites spend so much time in acarodomatia. The scientists initially hypothesized that the acarodomatia provide the mites a healthy climate in which to live and reproduce, but the researchers now believe the most likely explanation is that acarodomatia provide the mites protection from their predators. "Our research shows that acarodomatia provide a defense mutualism between beneficial mites and grape plants. The grape plants are being protected from fungus and plant-feeding spider mites, and the mites are getting protection from their own predators," says English-Loeb.

"These types of mutualisms may be quite common in nature, and we may be able to take advantage of them to better manage agriculturally important pests."

*B. Friedlander*

CALENDAR of EVENTS

SEPTEMBER 17-24, 1999

MEETINGS

**Wednesday, September 22, 3:00 pm**  
 Director's Office, Jordan Hall  
*Geneva Department Chairs' Meeting*

SEMINAR

ENTOMOLOGY  
 DISSERTATION SEMINAR

**Date:** Tuesday, September 21  
**Time:** 3:30 pm  
*(PLEASE NOTE TIME CHANGE)*  
**Place:** The Paul J. Chapman  
 Conference Room  
 Room 310, Barton Laboratory  
**Speaker:** Mark Schmaedick  
 Department of Entomology,  
 Geneva  
**Title:** Biological Control of  
*Pieris rapae* in Cabbage  
 by Naturally Occurring Predators

*Social interaction with the speaker at 3:00 pm.  
 Coffee & cookies will be available*

CU EMPLOYEE ASSEMBLY UPDATE

The Charter of the Cornell University Employee Assembly states the purpose of the CU Employee Assembly (EA) is to ensure a direct focus for the continued involvement of exempt and non-exempt staff members in the governance of non-academic affairs and in the life of the University. The Employee Assembly will bring about a higher visibility for employees as community members, more equal participation with faculty and students in the policy-making process, and an increased sense of community among all constituencies through shared responsibilities.

Geneva has not had representation on the Employee Assembly for a number of years; one reason was the travel time involved attending the EA and committee meetings. It has been confirmed that the Day Hall Board Room has video-conferencing capability which would allow a person in Geneva to participate on the EA without traveling to Ithaca twice a month for the meetings, assuming picnet is not scheduled for a class or other priority.

Cristen Gardner, CU Director of the Office of the Assemblies, states that while the Geneva seat is currently filled with an Ithaca based person, when the EA holds elections again the spring it would welcome a Geneva representative. In the meantime, if we have someone who would like to participate as a non-voting member, perhaps the electronic hook-up could be tried.

If you are interested in representing Geneva employees in a non-voting capacity until spring, please discuss your interest with your supervisor, your Chair/Unit Leader, and contact Charie Hibbard, Geneva HR at x210/cah3.

CLASSIFIED

**AUTUMN IS ONE OF THE MOST BEAUTIFUL TIMES IN THE FINGER LAKES.** Plan a weekend getaway on the southwest side of Canandaigua Lake in September or October. Naples hosts three fall festival weekends beginning September 25th! Bristol Valley Theater Fall for the Arts Series! Grape pies! Restaurants! Bristol Mountain chair lift rides! Beach House rental right on the water across the lake from South Hill, and the foliage is beginning to turn color now. Reduced off-season rates. Beautiful, quiet setting, fully equipped, heated. Call Elaine at x253 or elg2.

*Early afternoon, when the sun is still high,  
 is the best time for sleeping under a tree.*

*During these hours, it is a warm shade that  
 comes straight down around the trunk. Any kind  
 of clothing that is not crumple-proof is suitable.*

*The idea is to wake up wrinkled on the outside  
 but straightened out a bit on the inside. —John Singer*