

The Vegetable & Small Fruit Gazette

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Quote for Thought from Pete Ferretti

I am long on ideas, but short on time. I expect to live only about a hundred years.

~Thomas A. Edison, from The Harper Book of Quotations

Cyclamen Mites on Peppers

Lee Young, Penn State Cooperative Extension, Washington County
with information from the NE IPM Pepper Manual, University of Connecticut

Recently I was in a pepper field and noticed fruit with a very distinctive russeting around the calyx. Earlier set fruit was generally clean, but in many plants, the majority of later set fruit exhibited russeting and deformed fruit. Also, leaves around the growing points near the affected fruit were distorted, looking almost like a viral infection.

What could this be? I snapped a few pictures with my cell phone and emailed them to Penn State vegetable entomologist Shelby Fleisher. He was quick to point me to an excellent resource, the Northeast IPM Pepper Manual. Comparing my pictures to those in the manual, it was easy for Shelby to diagnose the problem—cyclamen mites.

Cyclamen mites, or *Steneotarsonemus pallidus*, are also known as strawberry crown mites, and are also pests of many flowering annuals (e.g. cyclamen, begonia, azalea, marigold, zinnia). These mites are tiny—even for mites—so that diagnosis is done primarily on symptoms. Just a few mites can cause serious damage.

Cyclamen mites are known as cool weather mites, and their damage is usually seen primarily in early spring or early fall, which might explain why the damage we saw was so widespread. Mites inject an auxin into plants during feeding, and the plant responds with foliage that is twisted and distorted, and sometimes with leaves that grow much larger than normal. Feeding on the blossoms and very young fruit result in the russeting and fruit distortions.

What to do? Infestations of cyclamen mites in peppers are usually associated with nearby strawberry plantings, debris from greenhouse ornamental plants, or as a result of transplant production in greenhouses with mite-infested ornamental flowers. Avoid mixing pepper transplants and ornamentals in the same greenhouse. In the field, keep peppers as far away from strawberries as possible, and don't dump greenhouse debris near pepper fields. Miticides are an option, but must be used early and applied thoroughly.



Leeks, Teens, and Farmer Wannabes

Lee Young, Penn State Cooperative Extension, Washington County

Last fall, to scratch my perennial “I wanna be a farmer someday” itch, I planted 1300 cloves of garlic at a friend’s property. Over the summer, hand weeding this patch did wonders to relieve that itch, but the combination of a bumper crop of garlic and a bored teenager in the house prompted me to set him up as a visiting vendor at our local farmers market in Washington, PA in August. Revenues are just about covering my cash costs of production, plus putting some spending money in his pocket. To add a little variety to his items for sale, I grabbed some odd-ball things out of our garden that were growing in over-supply, like leeks, shallots, and poblano peppers. The garlic sold very well, but the odd-ball stuff flew off the table each time. This got me thinking:

Why aren't more leeks grown and marketed in Pennsylvania? As a vegetable, leeks have a lot going for them. A non-bulbing member of the onion family, they have been cultivated for thousands of years. Good cooks love to get their hands on fresh leeks because they are highly versatile, mild in flavor, trendy, and very nutritious. Leeks are easy to grow and to harvest, and they have few pests. They have low perishability, storing well either in the field or in a walk-in cooler. Visit the produce section of a good supermarket and you will likely see that leeks are one of the highest priced vegetables on the shelves, often selling for over \$3 per pound. And yet I rarely see them at farm markets or farmers markets, or as a featured locally grown item at a supermarket. Sure, leek sales will never come anywhere near that of tomatoes, peppers or sweet corn, but perhaps they represent an opportunity for niche production and marketing for some growers.

Is there a place for market gardeners in the Pennsylvania fruit and vegetable industry? Especially around larger urban areas, we are seeing a wave of people wanting to get into farming at this “market gardener” level. I have heard complaints from established commercial growers that “backyard gardeners” who vend at farmers markets or at small roadside stands ruin the market for the professional growers. Those words were ringing in my ears as I set up the market stall for my son. I’m sure there is some truth to this when backyard gardeners grow and sell the same standard items and price their produce far below production costs. But what if market gardeners mostly focused on niche items with a more limited demand that larger growers don’t have time to fool with? Like leeks, for example, or garlic, or shallots.

Are farmers markets a place to nurture entrepreneurship in teens? OK, I’m only working with a sample size of one, but if my own teen is any indication, teens (at least those who are reasonably personable) and farmers markets just might be a good match. Farmers markets are relatively short in duration, just like a teenager’s attention span. While they aren’t exactly electronic, healthy farmers markets are fast-paced, busy places with lots to see. Through working at farmers markets, teens can hone basic skills such as communicating with customers, doing mental arithmetic, and making change. Teens can learn about healthy food and where it comes from. Compensating them in part based on how much they sell could help sow the seeds of entrepreneurship, something we need to nurture for a strong economic future. I expect that many of today’s Pennsylvania producers gained just this kind of invaluable experience in their younger years.

It's probably too late for me to become a real entrepreneur. Nevertheless, the itch to farm will return, and I'll be planting more garlic this fall. And my son will be helping.

Tomato Late Blight: Fall Clean-Up

Beth K. Gugino, Penn State Plant Pathology

Some of the information is adapted from Luke LaBorde, Penn State Food Science and Meg McGrath, Vegetable Extension Pathologist, Cornell, LIREC

Now that the growing season is coming to a close, many home gardeners, consumers and growers are asking about processing fruit from infected plants, treating soil in gardens where late blight was observed and/or preventing late blight next season. Below are answers to some of the more frequently asked questions that I have received the past several weeks.

Are tomatoes from late blight infected plants safe to can/process?

Yes, if the fruit are not showing symptoms of late blight. Not all the fruit on a late blight infected plant will develop symptoms. If tomatoes are harvested early from infected plants leave them on the counter for several days and check daily for the development of symptoms. There is a latent (waiting) period between when a spore of the pathogen lands on the fruit and visible symptoms develop. If symptoms develop, discard the fruit. If symptoms do not develop then they are safe to use. If harvesting ripe tomatoes, process healthy fruit as quickly as possible. The USDA Complete Guide to Home Canning (1994 ed) recommends that canners select only disease-free, preferably vine-ripened, firm tomatoes for canning. The reason for this recommendation is that fungus infection may raise the pH of the tomato flesh to a level that makes it unsafe for canning.



Luke LaBorde, Penn State Food Science, recommends not using any tomatoes showing signs of late blight for canning. This even applies to tomatoes with only minor lesions because the infection could have spread to the interior of the fruit. Internal infection is not always clearly visible and the internal fruit may look healthy when in fact it could be infected with late blight. It is safe, however, to process disease-free tomatoes that are growing on plants with leaves, stems or adjacent fruit that show symptoms of infection. As an extra level of protection, remember to follow the acidification directions for all tomato products in the USDA Complete Guide to Home Canning (http://www.uga.edu/nchfp/publications/publications_usda.html):

To ensure safe acidity in whole, crushed, or juiced tomatoes, add two tablespoons of bottled lemon juice or ½ teaspoon of citric acid per quart of tomatoes. For pints, use one tablespoon bottled lemon juice or ¼ teaspoon citric acid. Acid can be added directly to the jars before filling with product. Add sugar to offset acid taste, if desired. Four tablespoons of a 5% acidity vinegar per quart may be used instead of lemon juice or citric acid.

He also does not recommend that consumers eat fresh or freeze diseased tomatoes. Although the disease organism by itself is not harmful to consume, the damaged tissue can create conditions

that are more favorable for other potentially harmful microorganisms. “When in doubt, throw it out.” For more information from Luke LaBorde see <http://foodsafety.psu.edu/LateBlight.htm>.

Can plants with late blight be disposed of by composting?

In theory if done correctly, however (if you are like me) often this is not achieved. Proper composting involves going through both the active and curing phase of composting. The duration of the process is dependent on the inputs (original materials), composting method used and compost pile management; it can take as little as three months or as long as a year. The composting of diseased plant material and weeds is generally not recommended because of the potential spread of weed seeds and disease-causing pathogens when the compost is applied and incorporated back into the garden. Plant tissue can survive in the center of a warm compost pile. As long as the plant tissue is alive, the pathogen can survive.

Late blight can survive in infected potato tubers overwinter and can be a potential source of the disease the next year. Therefore, potato tubers should not be dumped on top of a compost pile. If they are infected, it is best to dispose of them in the regular trash. Another option would be to chop-up infected tubers and spread on the soil surface so they freeze overwinter thus killing both the plant tissue and late blight pathogen. Next season it will be important to destroy all volunteer tomato and potato plants. For additional information on backyard composting check out http://backyardcompost.cas.psu.edu/howiscompostmade/how_is_compost_made.html. Also, guidelines have been developed on composting cull potato tubers for commercial operations: <http://www.umaine.edu/umext/potatoprogram/Fact%20Sheets/Composting%20Cull%20Potatoes.pdf>.

Unless you know that you are composting properly, it is still recommended that you dispose of infected plants, fruit and tubers in the trash. Keep in mind...kill the plants and this will kill the pathogen! The pathogen cannot survive outside of living plant tissue.

Do I need to treat the soil this fall to prevent late blight from developing next year?

No. The late blight pathogen is an obligate pathogen and thus requires living plant tissue to survive overwinter. Once the tomato plant tissue is dead, the pathogen cannot survive on the crop debris like many other vegetable pathogens. The specialized overwintering survival structure (oospore) of the late blight pathogen requires two mating types (equivalent to male and female) to go through sexual reproduction and form. To our knowledge, there is only one mating type in Pennsylvania and the Northeast. Without the compatible mating type, no oospores form and therefore there is no risk of this season’s late blight surviving in the soil and being a source of the disease next season. This means that there is no need to treat the soil this fall or next spring to prevent late blight next year. The late blight pathogen can, however, survive in potato tubers, so it will be important to destroy any volunteer plants next year. Both mating types have been found in Florida.

Can the late blight pathogen survive in or on tomato seed?

No. Fortunately this pathogen is not able to get inside seed and it does not produce a type of spore that is able to survive on the outside of the seed. Thus there is no concern that late blight will develop as a result of growing plants next year from seed that were in tomato fruit infected with late blight. There are other pathogens (especially bacterial pathogens) that can survive in and/or on the seed thus there are other reasons to only use seed from healthy plants.

Could the late blight pathogen survive on tomato cages and stakes between seasons?

No. Therefore, it is not necessary to discard or even disinfect the cages or stakes to manage this disease. It is a good idea, however, to disinfect stakes and cages to help control bacterial diseases (bacterial spot, bacterial speck and/or bacterial canker). These bacterial pathogens can survive overwinter in the cracks and crevices and be a source of the disease next season. Disinfectants include: quaternary ammonium chloride salts (e.g. Green-Shield), sodium hypochlorite (Clorox or other household chlorine bleach 5.25%, so use 0.5% = 1 part bleach + 9 parts water), and hydrogen dioxide (e.g. Oxidate). Clean off soil and organic matter first because this inactivates disinfectants and can protect pathogens that are inside. This is especially important when using bleach. Soak at least 10 minutes. Disinfectant solution can be reused until it becomes dirty or ineffective (replace Green-Shield after 24 hours; half-life for bleach is only 2 hours).



Are there late blight resistant tomato varieties that I should consider planting in the future?

Currently, there are some potato varieties described as having some resistance. These include 'Elba', 'Kennebec', 'Allegany', 'Sebago', 'Rosa', 'Defender', 'Jacqueline Lee' and 'Ozette'. 'Elba' is considered the most resistant. There are some tomato varieties in the final stages of development and are expected to be available as soon as 2010.



What can home gardeners and growers do to prevent another late blight epidemic next year?

Make sure that all late blight infected tomato plant and fruit tissue from this season is dead/destroyed. Once dead, the pathogen can no longer survive since it is an obligate pathogen and cannot survive outside a living host. Destroy potato tubers that appear to be infected by late blight and also volunteer potatoes that grow next year. The late blight pathogen cannot survive in infested dead plant debris, but it can survive in tubers.

Next year, make sure to plant healthy disease-free transplants. Examine your plants regularly for symptoms of late blight, especially if cool wet conditions prevail like this past year. In general, good disease management focuses on creating a less favorable environment for the pathogen. The pathogen survives and spreads more effectively when leaf surfaces are wet. Avoid wet leaves by watering at the base of the plant or by using overhead irrigation during mid-morning so the leaves dry quickly. Improve air circulation by spacing plants farther apart and eliminating weeds. These practices will also help with the management of other common tomato diseases. For more information please visit

http://www.ppath.cas.psu.edu/EXTENSION/VEGDIS/Vegetable_Pathology_Home.htm and/or contact your local Penn State Cooperative Extension Office.

Mulching Strawberries for Winter Protection

Rich Marini, Penn State Horticulture

Mulching strawberries is an old practice that helps protect the plants from low temperature injury during the winter and keeps the ripening fruit clean. This summer Kathy Demchak and I observed winter injury in the crowns of plants in strawberry fields that were not mulched until mid-winter. Although few plants were killed, the injury appeared severe enough in some plants that yield was probably reduced. For strawberries grown on raised beds, the potential for cold injury is high because soil heat may quickly dissipate from the increased surface area of the beds relative to the soil volume. Covering raised beds with plastic or row covers likely retards heat loss, but I am not aware of soil temperature data for raised beds with different types of covers. This article is intended as a review of the information on mulching strawberries and on low temperature injury, so growers understand how and when to effectively mulch their plantings.

In the late summer and early fall, strawberry plants enter a physiological stage referred to as “dormancy”. There are different phases of dormancy, but that discussion is beyond the scope of this article. Although dormant plants do not appear to be growing, the buds continue to develop throughout the winter. The initial stages of dormancy are triggered by decreasing day length and declining temperatures, but strawberry plants do not become hardy until November. The term “hardiness” refers to the plant’s ability to resist low temperatures. As strawberry plants become dormant, new leaf development ceases, the leaf petioles become more horizontal, resulting in the “flattened” appearance of dormant plants, and older leaves turn red. Plants become hardy upon exposure to freezing temperatures and strawberry plants continue to increase in hardiness until January. In late winter, after being exposed to sufficient chilling, the plants start to lose cold hardiness in response to warming temperatures. Upon exposure to sufficient heat, the plants begin to grow.

Mulch should be applied after the plants have attained substantial cold hardiness, but before low temperatures injure the plants. A rule of thumb, supported by research data from several locations, is to apply mulch after three consecutive days when the soil temperature is 40°F or lower at a 4-inch depth. This usually occurs after several hard frosts in the low 20’s, and in Pennsylvania this usually occurs between mid-November and mid-December, depending on location.

Strawberry plants are covered with straw to insulate plants from low temperatures, to prevent temperature fluctuations that can lead to frost heaving, and to minimize plant desiccation. Mulch also delays soil warming in the spring and minimizes exposure to spring frost by delaying bloom. Following bloom, mulch helps with weed control, conserves soil moisture, and helps keep fruit clean. Several types of loose materials have been successfully used as mulch, but straw is most common in the northeastern U.S. Hay should be avoided because it contains weed seeds. For matted rows, about 2.5 to 3 tons of mulch per acre, providing a 2- or 3-inch-layer, is typically applied on top of the plants. Doubling this amount of mulch is typically suggested for raised beds. Snow is an excellent insulator and snow combined with mulch is even better. My Master’s research at the University of Vermont involved laboratory experiments where plants were exposed to various temperatures to determine critical temperatures for plant growth, as well as survival of plants and flower buds. In a field experiment non-mulched strawberry plants were compared with mulched plants. When the air temperature was -4°F, the temperature of non-

mulched crowns was 1.5°F but the temperature of crowns under straw mulch plus 8” of snow was 30°F.

Mulch is typically removed in early spring when plants begin to show signs of growth or new leaf emergence under the mulch. Earlier mulch removal will allow the soil to warm, resulting in earlier plant growth and bloom, which is susceptible to spring frost. The mulch should be removed with rakes or pitch forks in small plantings or with various types of mechanical rakes in larger plantings. A little mulch should remain on the plants and this will work its way to the soil surface to help keep fruit dry and clean, but most of the mulch is pulled to the row middles for weed control.

More on winter injury

The cold hardiness of strawberry plants varies with cultivar and weather conditions before and during a cold event. Dormant plants will lose some of their hardiness if exposed to warm temperatures for just one or two days. Rapidly declining temperatures are more injurious than gradually declining temperatures.

A strawberry crown is actually a short stem. The tissue in the crown center (the pith) is called the medulla and is storage tissue composed of unspecialized cells called “parenchyma”. To the outside of the medulla is the vascular cambium. The vascular cambium is a bright white thin layer of tissue forming a cylinder running the length of the crown. The cambium is responsible for the horizontal growth or thickening of the crown. The cambium produces xylem cells to the inside that act as a pipeline to allow water to flow from the roots to the leaves, runners, flowers and fruit. The cambium produces phloem cells to the outside, which allows for the vertical movement of sugars and other materials within the plant. The tissue at the base of the medulla is most sensitive to low temperature injury and the cambium tissue is most tolerant to low temperatures. Tissue browning in the crown is indicative of low temperature injury. As injury increases, browning extends from the base to the top of the medulla and the browning becomes darker. Often the entire medulla can be chocolate brown, but as long as most of the cambium is white, the plant will survive. However, when the lower half of the medulla was dark brown, yield was reduced by about 45% compared to non-injured plants and this occurred when crowns were exposed to about 18°F. About 50% of the plants were killed by exposure to 14°F. The effect of freezing ‘Catskill’ strawberry plants to various temperatures on subsequent growth and fruiting is summarized in Table 1.

Table 1. Temperatures needed to influence different aspects of ‘Catskill’ growth and development.

Response	Maximum temp (°F) that caused response
Crown tissue browning	17
5% plant mortality	17
50% plant mortality	14
Reduced leaf emergence	24
Reduced leaf size	10
Increased runner production	17
Reduced bloom	17
Reduced plant dry weight	10

Some of the older cultivars, such as ‘Catskill’ and ‘Sparkle’ were quite tolerant of low winter temperatures, but to my knowledge the newer cultivars have not been evaluated for cold hardiness. Kathy Demchak had a small 2-year-old cultivar trial on plasticulture at Rock Springs that was not well mulched with straw last winter, but were covered with only row covers. So I evaluated them for crown injury and some of the results are shown in Table 2. Each branch crown on 5 plants in 4 replications was cut longitudinally and the percentage of the medulla with brown color was recorded and the darkness of the brown color was rated on a scale of 1 (no browning) to 3 (very dark brown). I had never evaluated cold injury in older plants with multiple crowns. These plants had between 4 and 9 crowns and I was surprised to see that the center crown, associated with the original mother plant, was most sensitive to cold injury. There was no plant mortality for ‘Evie 3’, whereas ‘Albion’ and ‘Seascape’ had the most crown mortality with 7% mortality. Browning of the original crown and the branch crowns was not very strongly related. For the original crown, ‘Everest’ had the most browning, whereas a selection from North Carolina State University and ‘Evie 3’ had the least tissue browning. For the branch crowns, ‘Seascape’ had the most injury and ‘Everest’ had the least injury. Kathy set out some extra plants for me this spring and this winter I hope to evaluate the cold hardiness of some of these cultivars using controlled freezing techniques.

Table 2. Severity of oxidative browning of crown tissue in six strawberry cultivars in 2009. Percent browning refers to the average extent (%) of the crown tissue that was brown.

Cultivar	Original crown		Branch crown		Live original crowns (%)
	Medulla browning (%)	Brown rating	Medulla browning (%)	Brown rating	
Albion	74	2.5	21.6	1.3	93
Evie 2	72	2.2	34.7	1.2	98
Evie 3	32	1.7	14.3	0.5	100
Everest	80	2.3	7.3	0.7	94
NCSU selection	30	1.3	10.9	0.5	95
Seascape	73	2.6	43.8	1.6	93

Value-Added Produce Grant Notice

Submitted by [Lee Young](#), Penn State Cooperative Extension, Washington County

The USDA plans to award planning grants of up to \$100,000 and working capital grants of up to \$300,000 to successful applicants. Applicants are encouraged to propose projects that use existing agricultural products in non-traditional ways or merge agricultural products with technology in creative ways. Businesses of all sizes may apply, but priority will be given to operators of small and medium-sized family farms – those with average, annual gross sales of less than \$700,000.

Applicants must provide matching funds equal to the amount of the grant requested. Ten percent of the funding being made available is reserved for beginning farmers or ranchers and socially disadvantaged farmers or ranchers. An additional 10 percent is reserved for projects involving local and regional supply networks that link independent producers with businesses and cooperatives that market value-added products.

Information, forms and other useful data will be available on the Value-Added Website:
<http://www.rurdev.usda.gov/rbs/coops/vadg.htm>.

For further information about this program, please contact
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Guanajuato: A Major Vegetable and Strawberry Growing State

Ilse Huerta, Visiting Observer from Mexico

I am a student from the University of Guanajuato in Mexico. At Penn State I'm a visiting observer in Plant Nutrition with Dr. Michael Orzolek and Dr. Bill Lamont, and also in Plant Pathology with Dr. Beth Gugino. I am glad to say that so far it has been a great and unique experience for me.

Since I arrived, there have been many people asking me about the state of Guanajuato, where I come from. Dr. Sánchez asked me to write an article on Guanajuato for the Vegetable and Small Fruit Gazette and I think agriculture in Guanajuato is something that may be interesting for many of you.



For geographic reference, Guanajuato is located in the central part of Mexico. Its size is approximately 11879 square miles, which is 1.6% of the territory of Mexico. We represent the 4.7% of Mexican population.

Guanajuato has 46 municipalities in 5 different regions: a) Los Altos, b) Sierra Gorda, c) Sierra Central, d) Valles Abajeños, and e) El Bajío. This last region is one of the most important agricultural regions in Mexico, mainly because of our considerable strawberry and vegetable production, such as: onion, garlic, cauliflower, celery, peppers. Guanajuato is also the number one state in broccoli production, and the second largest producer of asparagus.

We have two growing seasons, spring-summer and fall-winter. This is why we produce and sell fresh and frozen vegetables to other countries, primarily to the United States, throughout all the year. El Bajío competes with Salinas Valley in California as far as frozen vegetables for export. I am from the city of Irapuato, which is traditionally called “The Strawberry City”. It used to be the largest producer of strawberries in Mexico. At the present we are number 3 behind two other states (Baja California and Michoacán), which is a result of their adoption of the latest technology which has increased their production. But we are still recognized as an important strawberry growing state with more than 2471 acres and 20,000 tons of production per year. There are some growers that cultivate their strawberries under high tunnels or use plastic mulch and drip irrigation, but not very many.

El Bajío includes the center and south of the state, with an average height above sea level of 5967 ft. Our climate is temperate to dry, since we only get 25 inches of rain in a good year. So you may wonder “How are they able to produce under those circumstances?” Well, the answer is irrigation. Most of the vegetables are grown using furrow irrigation. Without irrigation it is impossible to produce a crop. But today the demand for irrigation water has become a critical issue, because irrigation is necessary to hold or expand our place in the national and international marketplace. Increased demand for irrigation water has resulted in excessive water extraction, resulting in the depletion of our underground water resources.

I hope you liked learning about Guanajuato. It is a beautiful state with lots of history, given that Mexico's Independence started here, and many lovely places to visit. You are invited to come and visit us and I am sure that you will find Guanajuato and its people charming.

Cucurbit Growers – We Need Your Help

Elsa Sánchez, Penn State Horticulture, [Shelby Fleischer](#), Penn State Entomology and [Beth Gugino](#), Penn State Plant Pathology

We have teamed up with scientists at Iowa State University and the University of Kentucky to develop a new strategy for growing cucurbits. More specifically, we're looking at using row covers for managing cucumber beetles and squash bugs while allowing for pollination. Row covers have been used to manage these pests in the past. We hope to optimize the timing of applying and removing row covers, connect that to the phenology models that estimate timing of pest populations, and include methods that enable pollination, such as adding bumble bees under the covers, or augmenting nearby areas with floral provisioning plots. As part of the pollinator objective, we will contrast pollinator communities among the three states.

Also, row covers change the environment around the plants – specifically they make it a little hotter. When compost is used the nitrogen in it is released over time at a rate that is dependent on many environmental factors including temperature. This leads to another objective of the project, which is to determine if when using row covers less compost can be applied because more nitrogen is released due to higher temperatures. All of this research will be accompanied by economic analysis to determine which practices are the most economical.

Fact sheets, field days, an internet site and web-based seminars will be held as we get further into the project. We will keep you updated as these occur.

Our goal is to develop techniques that you as growers will use. We have already consulted with several growers in Pennsylvania, Iowa and Kentucky to develop these ideas. However, we would like to have more of your opinions to make this meaningful for you. If you would be willing to complete a few short surveys over the next 3 years, please send your name, name of your farm, address and email address to esanchez@psu.edu.

Diagnosis, Visual Assessment and Management of Plant-Parasitic Nematodes of Vegetables and Small Fruit in the Northeast

Beth Gugino, Penn State Plant Pathology

Ever wonder what plant-parasitic nematodes do to your crops and profitability, or how you can manage them on an as-needed basis? Then plan on attending one of our NE-SARE funded workshops titled “Diagnosis, Visual Assessment and Management of Plant-Parasitic Nematodes of Vegetables and Small Fruit in the Northeast”. This workshop has been designed to train participants (county extension educators, regional specialists, crop consultants, IPM practitioners, interested growers and other ag service providers) throughout the Northeast in nematode diagnosis and management and to provide hardcopy and electronic resources that can be used on-farm and in various outreach activities. The topics to be covered include: nematode biology and ecology (aka Nematology 101); signs and symptoms of nematode damage in the field and on vegetable, small fruit and some ornamental crops; soil nematode assessment (focusing on on-farm methods); and management options and managing nematodes on an as-needed basis. Workshop participants will receive a 3-ring binder containing printed resources, CD-ROM containing PowerPoint slides, fact sheets, etc. for use as a future reference, and a soil nematode assessment that contains all the supplies necessary to conduct on-farm nematode assessments in several fields.

This last workshop will be held this fall on **November 19th** in **Portland, NY** at the new Cornell Lake Erie Research and Extension Laboratory. The full-day workshop will be held from 8:30 am to 5:00 pm.

The workshop facilitators include George Abawi from Cornell University, Jim LaMondia from The Connecticut Agricultural Experiment Station, Deb Neher from the University of Vermont and Beth Gugino from Penn State.

Although there is no fee to attend (and lunch and coffee breaks are provided), pre-registration is requested for planning purposes. The **registration deadline is November 12th**. For additional information or to register for this last workshop please contact Beth Gugino at (814) 865-7328 or bkgugino@psu.edu. For more specific information is also available at <http://www.ppath.cas.psu.edu/FACULTY/Gugino.htm>.



Funding for these nematode workshops is being provided through a grant from Northeast Sustainable Agriculture Research and Education (NE-SARE) Professional Development Program.

Upcoming Meetings

If you have a meeting you would like to announce, please send the meeting title, date, location and contact information to esanchez@psu.edu.

Local

- October 28, 2009. **New & Emerging Cover Crops Field Day**, 9:30 am to 2:30 pm, at Steve Groff's Cedar Meadow Farm, 679 Hilldale Rd., Holtwood, PA. For more information visit <http://www.cedarmeadowfarm.com/FieldDays/>.
- November 2009 (tentative date) **Western Pennsylvania Vegetable & Berry Seminar**, Butler, PA. For more information contact Eric Oesterling at (724) 837-1402 or reol@psu.edu or Lee Young at (724) 228-6881 or ljs32@psu.edu.

Regional

- October 16-17, 2009. **Fall Flower & Garden Fest**, 9 a.m. to 2 p.m., at Truck Crops Experiment Station, Crystal Springs, Mississippi. Free admission and parking. For more information: <http://msucares.com/fallfest> or 601.892.3731
contact: Dr. Rick Snyder, Professor & Extension Vegetable Specialist
- November 8-10, 2009. **Southeast Strawberry Expo**, Sheraton Imperial Hotel, Research Triangle Park, NC. For information, contact the NC Strawberry Association, phone 919-542-4037, info@ncstrawberry.com.
- December 15-17, 2009. **New England Fruit and Vegetable Growers Conference**, Manchester, NH. For more information visit www.newenglandvfc.org.
- January 12-14, 2010. **2010 Atlantic Coast Agriculture Convention and Trade Show** at the Taj Mahal in Atlantic City. For more information contact Mel Henniger at [mailto:henniger@aesop.rutgers.edu](mailto:melhenniger@aesop.rutgers.edu)
- February 2-4, 2010. **Mid-Atlantic Fruit and Vegetable Convention**, Hershey Lodge, Hershey, PA. For more information visit www.mafvc.org.
- February 4-6, 2010. **PASA's 19th Annual Farming for the Future Conference**, Penn Stater Conference Center, State College, PA. For more information visit www.pasafarming.org.

National

- December 7-10, 2009. **North American Strawberry Growers Association (NASGA) Annual Meeting**, Great Lakes Expo, Grand Rapids, MI. For more information visit www.nasga.org.
- February 25-27, 2009. **North American Raspberry and Blackberry Association (NARBA) Conference**, Monterey, CA. For more information visit www.raspberryblackberry.com.

International

- None listed at this time.

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