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# Capital District Growing Trends

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## Working Outdoors in the Heat

AgriLIFE Extension, The Texas A&M University System

Whether you work outdoors in agriculture, construction, coaching, or some other capacity, caution should be taken when temperatures rise. Asphalt and concrete store heat longer and gradually release heat at night, making road work extremely hot. Strenuous activity in the heat causes the body to sweat in an effort to cool itself. When sweat evaporates, the body begins to cool. A pea-sized bead of sweat can cool nearly 1 liter (about 1 quart) of blood by 1 °F. In hot, humid conditions, however, evaporation of sweat becomes more difficult, and keeping the body's temperature regulated can become a problem if precautions are not taken.

If you or your employees work in the outdoor heat, take these safety precautions:

**Get acclimated to the heat.** If you have just begun summer work, returned from a vacation, or had an extended illness, it is important to begin work gradually. It will take an adult about 5-7 days to acclimate to the heat.

**Implement work-rest cycles.** Distribute the workload evenly over the day and amongst able workers with adequate rest periods. Do **not** increase the duration of rest periods in hopes of increasing the duration of work periods - this can result in heat illness. Short, but frequent, work--rest cycles are the greatest benefit to the worker.

**Provide cool rest areas.** Shaded or air conditioned areas with a a temperature of 76 °F are preferable. The rest area should be as close to the work area as possible.

**Drink 1/2 cup to 1 cup of cool water every 15 to 20 minutes.** For work longer than 1 hour in duration, an electrolyte-containing sports drink may be preferred to replace lost nutrients. To prevent dehydration, it is crucial that the water intake during the workday be about equal to sweat loss. Do not rely on thirst as a measure of the need for fluid. A worker may produce 2 to 3 gallons of sweat over the course of a day.

**Wear appropriate clothing.** Clothing helps to prevent the transfer of heat from the air to the body. This advantage may be nullified, however, if the clothes interfere with the evaporation of sweat, such as in humid environments. In most cases, the best choice is to wear light-weight (like cotton), loose-fitting, light-colored clothing and a hat with a wide brim to protect the face and neck.

**Work in pairs.** Each person should have a partner whose job is to check on the other to watch for signs of heat illness.

**Postpone nonessential tasks.** When feasible, the most stressful tasks should be performed during the cooler parts of the day (early morning or at night). Double shifts and overtime should be avoided whenever possible during high temperature conditions.

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**Educate employers and workers.** Both employers and workers should know the hazards of working in the heat, the benefit of implementing the above guidelines, as well as the signs and symptoms of heat illness.

Excessive exposure to a hot environment, especially while active or working, can bring about a variety of heat-induced disorders, which can be very serious - potentially causing permanent disability or death. Heat exhaustion is the most common heat illness and often comes on suddenly. It is caused by decreased blood volume due to dehydration. Symptoms may include:

- Dizziness/feeling faint
- Headache
- Nausea
- Profuse sweating
- Clammy/cool skin
- Rapid/weak pulse
- Body temperature at or below normal
- Low grade fever
- Low blood pressure
- Ashen/pale appearance.

If left unattended, heat exhaustion can result in the more disabling and deadly heat stroke. **Heat stroke** occurs when the body is unable to regulate its temperature and cool down. Body temperature may rise to 106 °F or higher within 10 to 15 minutes. Warning signs vary, but may include:

- An extremely high body temperature (above 103 °F, orally)
- Red, hot, and dry skin
- No sweating
- Rapid, strong pulse or heartbeat
- Rapid, shallow breathing
- Elevated or lowered breathing
- Throbbing headache
- Dizziness
- Nausea
- Confusion
- Irritability
- Unconsciousness.

For more information on heat and heat illness, see the *HealthHints* newsletter on this topic at [http://fcs.tamu.edu/health/Health\\_Education\\_Rural\\_Outreach/index.php](http://fcs.tamu.edu/health/Health_Education_Rural_Outreach/index.php).

**References:**

Centers for Disease Control (2006). Extreme heat: A prevention guide to promote your personal health and safety. Retrieved August 25, 2006. From [http://www.bt.cdc.gov/disasters/extremeheat/heat\\_guide.asp](http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp). Federal Emergency Management Agency (2006). Are you ready? Extreme heat. Retrieved August 24, 2006. From <http://www.fema.gov/areyouready/heat.shtm>. Mayo Clinic (2004). Sweating and body odor. Retrieved August 24, 2006. From <http://mayoclinic.com/health/sweating-and-body-odor/DS00305>. National Institute for Occupational Safety and Health (1996). Working in hot environments. Retrieved September 6, 2006. From <http://www.cdc.gov/niosh/hotenvt.html>.

## Lily Leaf Beetle

Chris Logue, Executive Director,  
Cornell Cooperative Extension, Schenectady County

Lillies are an easy plant to grow for gardeners in our area and are extremely beautiful and have tended to be relatively low maintenance.

For several years we have been watching the progress of the lily leaf beetle which is native to Europe but has been known to exist in the Montreal area since 1945 and was documented in Cambridge Massachusetts in 1992. More recently lily leaf beetle has been seen in various parts of New England.

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Recently a homeowner from Schenectady County brought a sample of damaged lilies into our office along with several insects that turned out to be Lily Leaf Beetle.

The Lily Leaf Beetle adult is a beautiful insect with a bright red body and black legs, head and antennae. The “belly” of the insect is also black in color. This beetle is in the *Chrysomelidae* family. The adults and larvae feed on a variety of plants including *Lillium*, *Frittilaria*, *Polygonatum*, and *Nicotiana*. Eggs are laid only on the various types of lily.



lily leaf beetle *Lilioceris lili* (Scopoli)  
Adult(s)  
Photo by Richard A. Casagrande

The female insect will lay the orange eggs on the underside of the leaves. Hatching occurs in 7-10 days. The female can lay up to 450 eggs over her lifetime. The larvae are slug-like with swollen bodies of various colors including orange, brown and green. The larvae are especially disgusting as they carry their excrement around on their backs. The larvae feed for 16-24 days then drop to the ground to pupate in the soil. New adults emerge in 16-22 days and will feed until fall. The lily leaf beetle overwinters in the soil or debris in the garden or woods and not always in close proximity to the host plants.

To control this pest hand picking of the larvae, adults and eggs is possible. If you can’t stand handling the larvae with your bare hands wear rubber gloves. Several insecticides are also available for managing this pest. Formulations which contain neem oil, cyfluthrin, insecticidal soaps or spinosad are possible choices.

The lily leaf beetle has been managed successfully in Europe through the use of biological controls, namely the use of several types of parasitoids.

## Beaming Up Caterpillar Control

### David Chinery, Regional Turfgrass Educator, Rensselaer County

Unbelievably, it’s been close to 30 years since “E.T. the Extra-Terrestrial” came to earth via the silver screen. Since everything (at least in my mind) relates to horticulture, I’m here to report that the friendly, helpful creature from the heavens has a counterpart here on earth. It even has a similar name, B.t., or, more formally, *Bacillus thuringiensis*.

This garden helper comes not from the sky, but is a soil-dweller, and doesn’t have a glowing digit but is in fact a bacterium. Two weeks ago I found cabbage looper larvae devouring my broccoli and Brussels sprouts leaves and I went around the bend. Coming down to earth, B.t. immediately came to mind as one of the possible solutions. Since it is derived from a living organism, we classify B.t. as a biological control, and more specifically, we can call it a microbial pesticide.

B.t. was first identified in 1901 by a Japanese biologist, and shortly thereafter linked to a disorder of flour moth caterpillars by a German researcher. Subsequently, scientists learned that several strains of B.t. existed, each of which could kill specific insect pests. For example, the *kurstaki* strain is a common recommendation for forest tent caterpillars, gypsy moth larvae, cabbage loopers and tomato hornworms. Strain *israelensis* controls mosquitoes and is an ingredient in “dunks,” donut-like objects you can float in a small ornamental pond or rain barrel. The *tenebrionis* type has been used for Colorado potato beetles and elm leaf beetles. After application, B.t.’s narrow range of effectiveness leaves the vast majority of other insects unharmed, and it has been widely judged as “safe” for birds, fish, wildlife, pets and humans.

So how does this miracle microbe work? First, the insect must be in the juvenile, or larval, stage to be susceptible. When the gardener dusts or sprays a product containing B.t. on the desired plants, the pest insect doesn’t die immediately, but feeds a little bit more. The product contains crystal proteins which are produced by B.t.

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After the insect ingests the crystals, the alkaline pH of the digestive tract activates a toxin in the crystal. The toxin in turn causes cells in the gut to rupture, which eventually causes the insect to die. I beg your pardon, I hope you weren't having lunch just now.

But just like E.T., B.t doesn't come along without a little controversy. In 1985 Belgian scientists successfully developed a tobacco plant capable of producing the crystal proteins from B.t., thus shielding the plant from insect attack. This technology was then incorporated into cotton and corn, reducing the need to use pesticides on these crops. B.t. plants were also cleared of causing harm to monarch butterflies and honeybees. Unfortunately, the pink bollworm in India has become resistant to B.t. enhanced cotton, and fears of additional resistant pests, or new pests entirely, are emerging.

Luckily for gardeners and landscapers, using B.t. as a spray or dust is as safe as ever. So next time you see a cabbage looper, just cry "B.t., come home!"

**PESTICIDE EMERGENCY NUMBERS**

*Emergency responder information on pesticide spills and accidents*

CHEMTREC: 800-424-9300

*For pesticide information*

National Pesticide Information Center:  
800-858-7378

*To Report Oil and Hazardous Material Spills in New York State*

NYS Department of Environmental Conservation Spill Response:  
800-457-7362 (in NYS)  
518-457-7362 (outside NYS)

*Poison Control Centers*

Poison Control Centers nationwide:  
800-222-1222

If you are unable to reach a Poison Control Center or obtain the information your doctor needs, the office of the NYS Pesticide Coordinator at Cornell University, 607-255-1866, may be able to assist you in obtaining such information.

**2010 Pest Management Guidelines**

*Available upon request*

- Guidelines for Commercial Turfgrass \$21.00
- Guidelines for the Integrated Management of Greenhouse Florist Crops \$25.00
- Guidelines for Commercial Production and Maintenance of Trees and Shrubs \$25.00
- Guidelines for Production and Maintenance of Herbaceous Perennials \$25.00
- Guide for Berry Crops \$25.00
- Guide for Grapes \$21.00
- Vegetables \$30.00
- Tree Fruit \$35.00
- Field Crops \$21.00

Contact your local Cornell Cooperative Extension office for availability.

Looking for Cornell Pest Management Guidelines on-line? Visit <http://ipmguidelines.org/>

**Growing Degree-Day Update**

**Albany, NY.... 1535 GDD's base 50°F as of July 19, 2010.**

**For more info on weather forecasts, pest predictions and growing degree days visit [www.nrcc.cornell.edu/grass](http://www.nrcc.cornell.edu/grass)**

## Educational Opportunities:

**September 9, 2010**

### **IPM In-Depth Program**

**CCE Albany County, Voorheesville, NY**

Cornell Cooperative Extension Albany County will be hosting an Integrated Pest Management Day at the William Rice Jr. Extension Center, 24 Martin Road in Voorheesville, NY 12186.

Three 1 hour sessions that affect pest management decisions will be offered. Sessions include identifying and controlling common fungal pathogens, mites (including broad mites), and dealing with alkalinity. Instructors will be Dr. Betsy Lamb, Dr. Neil Mattson, Dr. John Sanderson and Mr. Brian Eshenaur. Lunch will be provided to all participants.

Registration will be 8:30 am to 9:00 am. Classes are from 9:00am-12:00pm. Following lunch, we will tour The Gade Farm (A Century Farm Est. 1878), 2479 Western Ave. (Rt. #20), Guilderland, NY 12084.

Cost for the class, lunch and tour is \$25.00 per person.

For more information and to register for the program, contact Lisa Cox at CCE Albany County, 765-3512 or by email at [lkc29@cornell.edu](mailto:lkc29@cornell.edu) or Chuck Schmitt at [cgs34@cornell.edu](mailto:cds34@cornell.edu).

**September 14, 2010**

### **Northeastern New York Nursery Landscape Association Region #3 Meeting**

**Cornell Cooperative Extension Albany County**

24 Martin Road, Voorheesville, NY 12186

Time: 5:00 pm

All members and prospective members are invited to attend. We need your participation and input as we begin planning for Education Day 2011.

For more information contact Jerry Parmenter at 518-765-5002; email [jparmenter@gotstone.com](mailto:jparmenter@gotstone.com) or Chuck Schmitt at 518-765-3513; email [cgs34@cornell.edu](mailto:cgs34@cornell.edu)

**November 3 & 4, 2010**

### **2010 Northeast Greenhouse Conference to Address Pest Management**

**DCU Center, Worcester, MA**

At this year's conference there will be plenty of opportunity to brush up on pest management for greenhouse crops and in the process, earn pesticide towards pesticide recertification if needed. An entire track is being devoted to pest management during the conference. Topics will include: Thrips and other difficult to manage pests (Dan Gilrein, Cornell Cooperative Extension); Downy mildew and other problem diseases and Diseases of perennials (Margery Daughtrey, Cornell Cooperative Extension); Case studies on biocontrol (Suzanne Wainwright-Evans, Buglady Consulting); Biocontrol panel of experienced growers; and Pest management on greenhouse vegetables and herbs (Rob Wick, UMass and John Sanderson, Cornell Cooperative Extension). For program details and registration information, see: <http://www.negreenhouse.org/index.html>. Pre-register early to take advantage of discounts!

**November 4 - 5, 2010**

### **NYSNLA Leadership Forum: *Building and Maintaining a 21st Century Nursery and Landscaping Business***

**The Hotel Thayer at West Point**

**Structure/Schedule:** Morning sessions on Marketing and Sales, Lunch with speakers, Field tour, Reception/Auction, legislative report, Board meeting. Details to follow as planning progresses. For more information contact the New York State Nursery Landscape Association [[info@nysnla.com](mailto:info@nysnla.com)]

**November 9, 2010**

### **Northeastern New York Nursery Landscape Association Region #3 Meeting**

**Cornell Cooperative Extension Albany County Office**

24 Martin Road, Voorheesville, NY 12186

Time: 5:00 pm

All members and prospective members are invited to attend. We need your participation and input as we begin planning for Education Day 2011.

For more information contact Jerry Parmenter at 518-765-5002; email [jparmenter@gotstone.com](mailto:jparmenter@gotstone.com) or Chuck Schmitt at 518-765-3513; email [cgs34@cornell.edu](mailto:cds34@cornell.edu)

## January 11-13, 2011

### 2011 Empire State Green Industry Show; Smart Growth. Learn With the Pros.

*The Premier Green Industry Show in New York!*  
**Rochester Riverside Convention Center,  
Rochester, NY**

Just in time to see the new 2011 products and services.

What better way to spend those cold winter days than catching up with friends and colleagues, and learning from top industry educators and professionals.

## Websites of Interest:

Cornell Cooperative Extension Albany County:

<http://ccealbany.com/>

Cornell Cooperative Extension Rensselaer County:

[www.ccerensselaer.org](http://www.ccerensselaer.org)

Cornell Cooperative Extension Schenectady County:

[www.cceschenectady.org](http://www.cceschenectady.org)

Cornell University Department of Horticulture:

<http://hort.cals.cornell.edu/>

Pesticide Management Education Program:

<http://pmep.cce.cornell.edu/>

Sports Turf Managers of New York:

<http://www.stmony.org/>

NY Tree Farm:

<http://www.nytreefarm.org/>

NYS Department of Environmental Conservation:

<http://www.dec.ny.gov/>

NY Forest Owners Association:

<http://nyfoa.org>

NYS Department of Agriculture & Markets:

<http://www.agmkt.state.ny.us/>

NYS Urban and Community Forestry Council:  
<http://nysurbanforestrycouncil.com/>

NYS Agricultural Statistics Service:

[www.nass.usda.gov/ny/](http://www.nass.usda.gov/ny/)

USDA Agricultural Marketing Service:

[marketnews.usda.gov](http://marketnews.usda.gov)

New York State Integrated Pest Management:

[www.nysipm.cornell.edu](http://www.nysipm.cornell.edu)

Managing Turfgrass Diseases:

<http://turfgrassmanagement.psu.edu/>

Northeastern New York Nursery and Landscape Association:

[www.nenynla.org](http://www.nenynla.org)

New York State Nursery Landscape Association:

[www.nysnla.org](http://www.nysnla.org)

NYS DEC Emerald Ash Borer Information:

[www.dec.ny.gov/animals/7253.html](http://www.dec.ny.gov/animals/7253.html)

NYS DEC Firewood and invasive insects information:

[www.dec.ny.gov/animals/28722.html](http://www.dec.ny.gov/animals/28722.html)

Emerald Ash Borer Information:

[www.emeraldashborer.info](http://www.emeraldashborer.info)

New York Invasive Species:

[www.nyis.info/Insects/EmeraldAshBorer.aspx](http://www.nyis.info/Insects/EmeraldAshBorer.aspx)

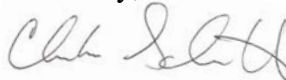
**If you have ideas for this newsletter or need additional information call one of the contributors:**

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(Turfgrass)

**Chris Logue**, Executive Director,  
Schenectady County, 372-1622 ext. 265 or  
[cal20@cornell.edu](mailto:cal20@cornell.edu) (Commercial Greenhouse)

Sincerely,



Chuck Schmitt

Extension Resource Educator