



Capital District Growing Trends

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Worm compost can suppress plant disease, regulate nutrients, research finds

Cornell Chronicle Online, December 21, 2011, by Aaron Munzer



Doctoral student Allison Jack works with screened vermicompost.

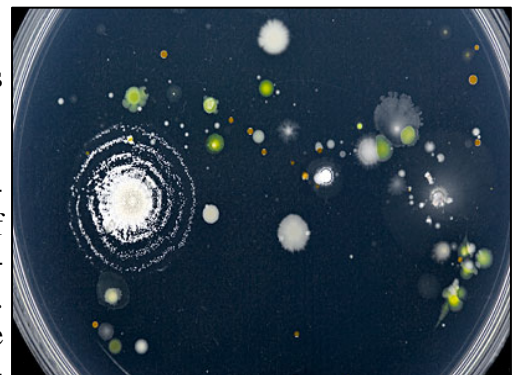
Organic growers could soon have another weapon in their arsenal, courtesy of the humble worm.

Cornell researchers have found that vermicompost -- the product of composting using various species of worms -- is not only an excellent fertilizer, but could also help prevent a pathogen that has been a scourge to greenhouse growers. By teaming up with a New York composting business, they believe they have found an organic way to raise healthier plants with less environmental impact.

Building on previous research conducted by Professor Eric Nelson's research group in the Department of Plant Pathology and Plant-Microbe Biology, Ph.D. student Allison Jack has shown that beneficial microbes in vermicompost can colonize a seed's surface and protect it from infection by releasing a substance that interferes with the chemical signaling between the host and the pathogen.

"We know the microbes are actually adding something the zoospores don't like," Jack said. "Now we just have to find out what it is."

Eric Carr, a master's student in Nelson's lab, is focusing on the suppressive qualities of vermicompost on a different stage of the life cycle of *Pythium aphanidermatum*, a pathogen whose mobile spores infect seedlings, causing them to "damp off," or wither, shortly after germination. The research, he said, helps contribute to opportunities to turn waste products like manure into important disease-suppressive soil amendments.



Bacteria from vermicompost extract grows on a petri dish.

"At some point in our lives, we're going to have to start using these types of natural resources and use them more efficiently; when that time comes, we'll have a better idea of how it works," Carr said.

Certain composts can suppress diseases, research has shown, but what is still unknown is which of the thousands of undescribed microbes in healthy compost are responsible for suppressing which diseases.

Another challenge in identifying suppressors and harnessing them is the variability of different composts.

To overcome this issue, Jack has teamed up with Tom Herlihy, who produces 2.5 million pounds of vermicompost a year through his Avon, N.Y., company, Worm Power. Because his dairy manure feedstock is reg-

ular and the process controlled, Herlihy's end product is highly consistent, a quality that's good for growers and for scientists like Jack.

Most seeds are treated in this country with chemicals," Herlihy said. "If we know our vermicompost can suppress *Pythium*, wouldn't it be nice if we could come up with a vermicompost-based solution, rather than a chemical one?"

There could also be economic benefit if the Environmental Protection Agency, for example, allows Herlihy to market his product as a biopesticide.

A related project at Cornell focuses on vermicompost's organic fertilizing capability. Horticulture assistant professor Neil Mattson was recently awarded a \$203,000 grant from the U.S. Department of Agriculture to study how organic growers can incorporate vermicompost into their potting mixes for better nutrient management. The three-year research project will begin this spring.

"What a lot of these growers tell us is fertility issues are the hardest to solve organically," Mattson said. "This is a community that is doing a lot of great things. We want to make their production systems even more profitable. We want to promote production systems that promote healthy environments."

Aaron Munzer is a freelance writer in Enfield, N.Y.

Beloved Boxwood Bitten By Blight

David Chinery, Senior Resource Educator
Cornell Cooperative Extension Rensselaer County

We've just finished with our holiday reveling and aren't far into the New Year, but I already have some bad news. I dislike being the grim reaper of gardening, but our beloved boxwoods are coming down with a dreadful fungus disease. While perhaps we'd like to hide our heads in the perlite, it's my horticultural duty to tell you the facts.



Last October, staff at the Connecticut Agricultural Experiment Station's Department of Plant Pathology and Ecology received samples of dying boxwood plants for analysis. The poor plant's leaves were spotted, blighted, and rapidly dropping. A closer look unveiled distinctive black cankers on the stems. Extensive microscopic studies and a literature search revealed that a new pathogen was involved – one, in fact, that had never been found in the United States, but that had been raising a ruckus in English gardens. Commonly called boxwood blight, the devil went by the tongue-paralyzing scientific moniker *Cylindrocladium pseudonaviculatum*.

Photo: Boxwood Blight, UMass Extension Plant Diagnostic Lab

With a new plant problem come many mysteries. No one knows where the blight originated, but in the mid-1990's, boxwood started dying in the United Kingdom. The same phenomenon appeared in New Zealand in 2002, and soon thereafter damage was widespread in the UK and Europe. We Americans would love to proclaim isolation in such matters, but somehow, boxwood blight suddenly appeared in Connecticut, North Carolina and Virginia simultaneously last summer. It was very recently reported in Massachusetts. Thanks, Britain. First colonialism and mad cow disease, then the Spice Girls, and now this?

Even with the advent of this monster-blight, up until recently, we northerners would have escaped with just collateral damage. Boxwood was reserved for gardens from about Maryland south, and it reigned as king-of-

the-shrubs in places like Virginia's Williamsburg. There, the entire historic city has that distinctive boxwood smell, which, pardon me, resembles cat pee, but in a good way. Yankees wanting to grow this marvelous plant, with its neat foliage, tidy shape and character that somehow oozes class like Jackie O. had to swaddle their charges in burlap and boards, pray for a mild winter, and still found the shrubs arriving in April with brown foliage. For us, it just wasn't an easy plant to grow.

But recently, cold-hardy, tough boxwoods developed in Canada and other cold places became available. Testament to these are selections like 'Winter Gem,' which survives in my windy front yard with nary a discolored leaf come springtime. When boxwood became easier, northerners started to fall in love with it and, predictably, use it more and more.

Hopefully, our boxwood boom will not be short-lived, but I'm apprehensive. No type of boxwood seems to have much blight immunity. Dead and dying plants were found in landscapes, garden centers, and nurseries in a large region during a very short period last year. Blight can survive on fallen foliage for five years, so garden sanitation is critical. Fungicide sprays are available, but in Europe they aren't particularly effective. Please learn more about this disease, keep a watchful eye, and let Cooperative Extension know if you see boxwood in trouble come spring.

- The foundation piers or posts should be large enough to support the weight of the building including crop and equipment loads.
- All greenhouses should have diagonal bracing to keep it from racking from the weight of the snow or force of the wind.
- Collar ties and post connections should have adequate bolts or screws. This is a weak point in some greenhouse designs.
- Allow 10' to 12' between individual greenhouse for snow accumulation and to prevent sidewalls from being crushed in.
- When building new hoopouses, consider using a gothic design that sheds snow easier. In hoop shaped houses, install 2 inch x 4 inch posts under the ridge every 10' when heavy snow is predicted.
- The heating system should be large enough to maintain 60F to melt snow and ice. It takes 250 Btu/hr per square foot of glazing to melt a wet snow falling at a rate of 1 inch per hour. Heat should be turned on in the greenhouse or under the gutter several hours before the storm begins.
- The plastic should be tight and inflated to at least 0.25 inch water pressure. This can be checked with a manometer. Any cracked or broken glass should be replaced.
- Energy screens should be retracted to allow heat to the glazing.
- A standby generator should be available with adequate fuel for the duration of the storm to power heaters, fans and blowers.
- Selection of greenhouses that meet the International Building Code and good construction techniques are important considerations when building new greenhouses. A little preparation before a storm can minimize damage from severe weather events.

Time for a Safety Makeover?

Chris Logue, Executive Director

Cornell Cooperative Extension Schenectady County

As I have become more involved in administrative duties at Cornell Cooperative Extension I have become keenly aware of the importance of safety for employees, participants and the general public. Winter is a great time for those of us in the landscape and greenhouse industries to consider a safety makeover.

First start with the obvious- winter is the time of year when we deal with snow and ice so be sure that walkways and driveways are cleared and treated as needed. I recently had the opportunity to speak with a forensic

meteorologist-and individual who makes his living as an expert witness for slip and fall cases and other injuries that are influenced by the weather. Seems to me that making the effort to keep snow and ice cleared away is a pretty cheap insurance policy.

Do you have an emergency procedure in place and a mechanism for reporting the finer details of an accident? Are all of your employees well versed in this procedure and who needs to be notified when? If the answer is no, this is a great time to develop such a policy and your seasonal employees can get trained as they return to work in the spring.

Have you checked each of the buildings in your operation? Are the entrances and exits adequate? Are there fire extinguishers in each building? Are they charged and in good operating order? Does each vehicle have a fire extinguisher and a first aid kit? Do the employees know how to use these items?

In the greenhouse have your furnaces been checked out lately? Exhaust leaks are not just bad for plants but for people also. Are the hoses and other tools stored neatly away from the walkways to minimize trip hazards? If not this is another great thing to get in order now.

How about chemicals that might be used in your operation? Are they stored according to the label instructions? Is the pesticide storage labeled and accessible?

These are just a few of many questions that one could ask about the safety of our operations. Take time now to audit your safety practices. Insurance companies will often be willing to assist in this procedure. If your insurance folks won't help with an audit consider having some people not too familiar with your business walk through to make safety suggestions.

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.

2012 Pest Management Guidelines

Available upon request

- Guidelines for Commercial Turfgrass \$25.00
- Guidelines for the Integrated Management of Greenhouse Florist Crops \$26.00
- Guidelines for Commercial Production and Maintenance of Trees and Shrubs \$26.00
- Guidelines for Production and Maintenance of Herbaceous Perennials \$26.00
- Guide for Berry Crops \$26.00
- Guide for Grapes \$25.00
- Vegetables \$31.00
- Tree Fruit \$36.00
- Field Crops \$23.00

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.... 3,094 GDD's base 50°F for the 2011 Growing Season

For more info on weather forecasts, pest predictions and growing degree days visit www.nrcc.cornell.edu/grass

Educational Opportunities:

January 24, 2012

**"Algae control and pond management"
by Ken Wagner from Water Resource
Services; A free Webinar from the Water
Education Alliance for Horticulture**

The Water Education Alliance for Horticulture is working with University of Florida Cooperative Extension, OFA, FNGLA, and the German grower association Zentralverband Gartenbau and several experts at universities and companies on topics to help growers conserve, recirculate, and treat irrigation water.

Registration is free at watereducationalliance.org (click on "workshops"), and the 45-minute presentations will run at noon EDT.

Algae are part of a normally functioning aquatic system, but when nutrient levels are elevated and other conditions are favorable, blooms can occur that impair uses that range from water supply through recreation to aquatic habitat. This presentation will provide some background on algal ecology as relates to control options and will provide an introduction to control techniques.

This presentation is part of the education program to promote water conservation co-sponsored by the Water Education Alliance for Horticulture (a collaborative program hosted by the University of Florida with industry partners), OFA - The Association of Horticulture Professionals, and the Florida Nursery Growers and Landscape Association (FNGLA).

January 31, 2012

Bedding Plant Conference

**The Century House
997 New Loudon Road,
(Route 9), Latham, NY 12110**

Learn about innovations in greenhouse production, pest management, new varieties and other trends. This year's topics include Insect and Disease Control in the Greenhouse; Growing Tomatoes in the Greenhouse; Organic Fertilizer Research on Potted Crops; New Varieties; and a NYSDEC Pesticide Update. We have received NYSDEC Pesticide Recertification Credits in the following categories.....Core, 1a, 3a, 10, 23, 24, 25. For more information contact Chuck Schmitt at [cgs34@cornell.edu](mailto:cds34@cornell.edu) and 518-765-3513.

February 7 - 9 & 14 - 16, 2012

**30-Hour Pesticide Class for
Category 3a & 25**

**Cornell Cooperative Extension
Rensselaer County
61 State Street, Troy, NY 12180**

Cornell Cooperative Extension horticulture staff of the Capital District will present a six day class to become licensed pesticide applicators. Successful completion of the thirty-hour training course and exams will allow participants to be licensed by the NYSDEC as Certified Pesticide Applicators. Registration required. For more information contact Chuck Schmitt at cgs34@cornell.edu and 518-765-3513 or David Chinery at dhc3@cornell.edu and 518- 272-4210.

February 11, 2012

**Ties to the Land: Planning for the
Future of Your Woodlands
A Facilitated Workshop on Succession
Planning; Keeping Family Forests and
Farms *in* the Family**

(snow contingency date: Saturday, March 3)

**Petersburgh Veteran's Memorial Community
Center, 71 Main Street, Petersburgh, NY 12138**
(Only 30 min. from Troy, 20 min. from Hoosick Falls, and
1 hr. from Ballston Spa and Chatham)

9:00 am - 4:30 pm

The workshop, held on February 11, will explore *Succession Planning* -- the human side of estate planning. It will focus on maintaining family ties to the land from generation to generation, building awareness of the key challenges facing private woodland owners, and motivating families to address the challenges. This interactive workshop, facilitated by Dr. Shorna Broussard Allred of Cornell University Cooperative Extension, in partnership with the Agricultural Stewardship Association, Rensselaer Land Trust, and Rensselaer Plateau Alliance, provides effective tools families can use to decide the future of their land.

During the first half of the workshop, participants will gain information about the basics of succession planning, overcoming communications issues, and will learn about the elements and structure of a succession plan. The second half of the workshop focuses on specific tools that can be used in implementing a succession plan and will include panel presentations and discussions with

local land trusts, a financial planner, tax attorney, professional forester, and land owner—all with experience helping woodland owners plan for the future of their land. This workshop coaches families in developing the techniques and communications skills they need to address the tough issues and decide the future of their land. Topics include:

- Key legacy planning challenges, and tools to deal with them
- Determining your heirs' interest
- Clarifying your values and goals
- Steps to succession planning
- Organizing effective family meetings
- Legal and financial instruments

TO REGISTER, please visit <http://SuccessionPlanning.ning.com> and click on the Workshops tab. If you have trouble registering, or if you have questions, please call/email Maureen Mullen, Cornell University Cooperative Extension, 607-254-6556, mlm394@cornell.edu. **The registration deadline is Wednesday, February 1.**

REGISTRATION FEE: \$40 per person, \$10 per each additional family member. Fee includes refreshments, lunch, and all workshop materials including and a copy of the workbook & DVD, *Ties to the Land: Your Family Forest Heritage*.

Feb 21, 2012

Entrepreneurial Boot Camp

Sponsored by: Albany Colonie Chamber of Commerce

The program is designed to provide business assistance to aspiring entrepreneurs, increase the formation of new businesses and strengthen the operations of businesses during the early stages of development.

This 12-week course educates entrepreneurs on the critical skills necessary for business growth and expansion. The classes blended classroom and individual training with lectures by prominent business experts, followed by question-and-answer sessions.

From Participating in Boot Camp, you will:

- Develop a rough draft of a business plan
- Understand financing options
- Become familiar with legal issues for operating a business
- Learn to effectively use a variety of methods to market your business

The boot Camp will begin on Tuesday, February 21st and run through the end of April. During that period, the class meets Tuesday and Wednesday nights from 5:30pm to 9:00pm at the Chamber office.

For the Spring 2012 course, Cornell Cooperative Extension's Capital Area Agricultural and Horticultural Program is collaborating with the Chamber. This collaboration is to assist individuals interested in starting a farm or related business.

The cost for the bootcamp is \$465 per person. To register for the course, contact Janet Tanguay. Janet's contact information is: Albany-Colonie Regional Chamber of Commerce, Five Computer Drive South, Albany, NY 12205-1608, 518.431.1430 Voice, 518.431.1402 Fax, janett@acchamber.org

You can also learn more about the Boot Camp by visiting the Chamber's website at <http://acchamber.org/growyourbusiness/entrepreneurialassistance.aspx>

February 28, 2012

Organic Turf & Landscape (a "Be Green" credit course)

Cornell Cooperative Extension

Rensselaer County

61 State Street, Troy, NY 12180

9:00 am - 2:00 pm

Cost: \$40.00

Cornell Cooperative Extension horticulture staff will present the latest on managing turfgrass and landscapes using organic methods. Participants will receive credits applicable to maintaining a current Be Green license agreement with the NYSDEC. Registration required. For more information contact Chuck Schmitt at [cgs34@cornell.edu](mailto:cds34@cornell.edu) and 518-765-3513 or David Chinery at dhc3@cornell.edu and 518-272-4210.

March 7, 8 & 23, 2012

CNLP (Certified Nursery Landscape Professional) Review Session

Cornell Cooperative Extension Albany County

24 Martin Road, Voorheesville, NY 12186

A 3-day review session and exam. Topics include botany, soils, and plant identification. This review session will prepare students for the CNLP exam.

Registration required. For more information about the training and the CNLP program, contact Chuck Schmitt at [cgs34@cornell.edu](mailto:cds34@cornell.edu) and 518-765-3513.

March 13, 2012

Greenhouse IPM In-depth Seminar

CCE Saratoga County, 50 West High Street,
Ballston Spa, NY

10:00 am - 4:00 pm

Registration: \$25.00 per attendee

(includes lunch, tour, refreshments, hands-on clinic and handouts)

Topics: Understanding and Managing Botrytis (Brian Eshenaur, NYS IPM), Thrips: Up Close and Personal (John Sanderson, Entomology), Getting Your Hands Dirty - Testing Container Media (Neil Mattson, Floriculture), BONUS: Tour to Sunnyside Gardens in Saratoga Springs. Visit a commercial greenhouse for tips on structural and off-season pest management.

DEC and CNLP credits are provided for each session. Please register by March 9, 2012.

For registration or more information, contact Sharon LaPier at (518)885-8995 or send name, address and phone to stl32@cornell.edu

March 15, 2012

Pesticide Recertification Day

The Century House, 997 New Loudon Road
(Route 9), Latham, NY 12110

Learn the latest on pesticide use, safety, and pest-management for the upcoming season. This program features up to 6 DEC recertification credits. Morning sessions offer core credits and afternoon sessions offer category specific credits for 3a, 1a, 7a and private categories as well. Registration required. For more information contact Chuck Schmitt at cgs34@cornell.edu

March 27, 2012

Garden Center Training

Cornell Cooperative Extension Albany County
24 Martin Road, Voorheesville, NY 12186

9:00 am - 12:15 pm

Program fee: \$ 20.00 for the first person \$10.00 for each succeeding person from the same business.

Learn the latest in NYSDEC regulation changes, how to control the most common garden center

pests problems and how Cornell Cooperative Extension can help your business grow. Registration required. For more information contact Chuck Schmitt at cgs34@cornell.edu and 518-765-3513 or David Chinery at dhc3@cornell.edu and 518-272-4210.

April 21, 2012

Small Scale Woodlot and Sugarbush Management

Greene County, NY

9:00 am - 1:00 pm

Many woodlot owners and maple syrup producers want or need to be more active in managing their woods for tree growth, sap production, firewood collection and small-scale sawlog harvesting. For more information contact [Peter Smallidge](mailto:pjs23@cornell.edu) at pjs23@cornell.edu or by phone at (607) 592 -3640.

May 7, 2012

Game of Logging - Level 1

Arnot Forest

7:45 am to 4:30 pm

This training presents the Game of Logging program, re-designed for private forest owners, firewood cutters, and homeowners wishing to gain a more thorough knowledge and practical, hands-on experience. For more information contact Peter Smallidge at pjs23@cornell.edu or by phone at (607) 592 - 3640.

May 8, 2012

Game of Logging - Level 2

Arnot Forest

7:45 am to 4:30 pm

This training presents the Game of Logging program, re-designed for private forest owners, firewood cutters, and homeowners wishing to gain a more thorough knowledge and practical, hands-on experience. For more information contact Peter Smallidge at pjs23@cornell.edu or by phone at (607) 592 - 3640.

June 16, 2012

Game of Logging - Level 3

Arnot Forest

7:45 am to 4:30 pm

This training presents the Game of Logging program, re-designed for private forest owners, firewood cutters, and homeowners wishing to gain a

more thorough knowledge and practical, hands-on experience. For more information contact Peter Smallidge at pjs23@cornell.edu or by phone at (607) 592 – 3640.

Websites of Interest:

Cornell Cooperative Extension Albany County:

<http://cceaalbany.com/>

Cornell Cooperative Extension Rensselaer County:

www.ccerensselaer.org

Cornell Cooperative Extension Schenectady County:

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/

USDA Agricultural Marketing Service:

marketnews.usda.gov

New York State Integrated Pest Management:

www.nysipm.cornell.edu

Managing Turfgrass Diseases:

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

Northeastern New York Nursery and Landscape Association:

www.nenynla.org

New York State Nursery Landscape Association:

www.nysnla.org

NYS DEC Emerald Ash Borer Information:

www.dec.ny.gov/animals/7253.html

NYS DEC Firewood and invasive insects information:

www.dec.ny.gov/animals/28722.html

Emerald Ash Borer Information:

www.emeraldashborer.info

New York Invasive Species:

www.nyis.info/Insects/EmeraldAshBorer.aspx

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

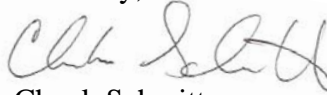
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Rensselaer County, 518-272-4210

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Chris Logue, Executive Director,
Schenectady County, 518-372-1622 ext. 265 or
cal20@cornell.edu

Sincerely,



Chuck Schmitt

Extension Resource Educator

This publication contains pesticide recommendations. Changes in pesticide regulations or human errors are still possible. Some materials may no longer be available, and some may no longer be legal. These recommendations are provided only as a guide. All pesticides distributed, sold, or applied in New York State must be registered with the Department of Environmental Conservation (DEC). Questions concerning the legality and/or pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension office or regional DEC office. Read the label before applying any pesticide. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by Cornell Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical.