

PLANT & PEST ADVISORY

A RUTGERS COOPERATIVE EXTENSION PUBLICATION

Diseases of Ornamental Plants: End of Season Notes

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The 2010 growing season is winding down. A recent tour of trees and shrubs at Rutgers Cook Campus in New Brunswick revealed many of the more common diseases in the ornamental landscape. Evident were leaf spots (trees, shrubs, and groundcovers), crabapple scab, cedar-apple or quince rust on rosaceous (crabapple or hawthorn) and juniperous (juniper and cedar) hosts, ash rust, spot anthracnose of dogwood, black spot of elm, horse chestnut leaf blotch, shade tree anthracnose (sycamore and maple), juniper tip blight, Diplodia tip blight (2- and 3-needle pines), anthracnose of English ivy, oak leaf blister, and pachysandra leaf and stem canker. Many of these diseases are “springtime” diseases; the fungi that cause them are active during cool, moist weather, and newly developing host tissues are more vulnerable to infection this time of year.

State-wide, these and other diseases were commonly reported. During the spring and summer, diseases in the landscape included black knot of Prunus, azalea leaf gall, black spot of rose, fireblight (pyracantha and ornamental pear), Verticillium wilt (maple), and powdery mildew (hosts commonly affected by this disease include ash, azalea and rhododendron, flowering dogwood, elm, lilac, oak, sycamore, and rose). Evidence of winter injury was common throughout the spring and early summer (most notably on Douglas fir, concolor fir, and broad-leaf evergreens such as boxwood, rhododendron, holly, and magnolia), and canker diseases (caused by fungi such as *Botryosphaeria* and *Cytospora*) were troublesome on rhododendron and some hardwoods and conifers. Symptoms of bacterial leaf scorch of oak were striking on susceptible pin and red oaks. Diseases reported by producers at various points during the growing season included *Impatiens necrotic spot virus*, downy mildew, root rots, Rhabdocline and Swiss needle casts of Douglas fir, and Lophodermium needle cast of Austrian pine.

Most of the landscape diseases mentioned above are merely cosmetic and do not significantly impair plant growth. Heat and drought stress are of greater concern; landscape trees in New Jersey have been stressed in previous years by prolonged moisture extremes, and it often takes trees five or more years to recover. Not only does moisture stress impact the immediate growth and development of plants, it also predisposes them to other diseases (especially cankers caused by *Cytospora*, *Botryosphaeria*, and *Nectria*) and insect pests (such as borers). Keep this in mind during the next few years when monitoring landscape trees and shrubs for plant health. □

Primer on Anti-Transpirant Applications

Steven K. Rettke, Ornamental IPM Program Associate

Purpose

Within a few weeks, many landscapers will begin to apply their annual anti-desiccant sprays to broadleaf evergreen plants. Some of the common trade names of these liquid, spray-on products include Vapor-Guard, Wilt-Pruf and Nu-Film. Although plants go dormant during the winter, evergreens will continue to transpire given certain conditions. These applications help reduce excessive water loss from leaves during the dry winter months when the ground is frozen. An anti-transpirant is a film-forming complex of polyethylene's and polyterpenes that when applied to foliage will reduce the moisture vapor transmission rate. Although much of the transpiration from leaves occur through small openings (stomata) under the leaves, a significant amount of water loss can also occur directly through the leaf cuticle or epidermis. The anti-transpirants function by increasing cuticle thickness of broadleaf evergreens.

Use of Anti-Transpirants

When 1 gallon of an anti-transpirant is applied to 10 to 20 gallons of water, plant moisture loss during the winter months is reduced between 15 to 20%. In addition, at the 5-10% dilution rate, the sprayed film produces a glossy sheen on broadleaf evergreens that is appealing to many clients during the holiday season. Some product labels state that a single application will last through the winter season, whereas other labels indicate a second application during mid-winter provides best results. Note that some of the most severe moisture loss from broadleaf evergreens typically occurs during late winter periods (e.g., February). Furthermore, the rate of transpiration will be greatest on plants growing in full sun on warmer, windy days. Hence, an anti-desiccant in place during this time and under these conditions will usually be most beneficial.

No Guarantees

The use of an anti-desiccant does not guarantee that foliage will be spared against winter "burn" type injuries. It should be remembered these treatments do not prevent, but only reduce moisture loss during the winter. Furthermore, anti-desiccants do not protect against plant cells being damaged from the formation of ice crystals within the foliage during excessively cold temperatures. Actually, tests indicate that anti-transpirants are most useful when the air temperature is above freezing, but the soils are still frozen or cold (water movement is extremely slow in soils or plant stems when temperatures are below 40°F).

Precautions

As always, it is important to read the label included with all anti-transpirant products. Notice that these products are designed to be used only with broadleaf and needled evergreens and should not be applied to evergreens having scale leaf type foliage. Using anti-desiccants on juniper or arborvitae evergreens, for example, may actually encourage winter type injuries. In addition, when some anti-transpirants are sprayed late in the afternoon, they dry more slowly during the evening hours. This may cause a persistent white, frosty film to occur on the surface of broadleaf evergreens (e.g., Rhododendrons) appearing later in the winter that is not aesthetically pleasing. Sprayers should be washed out immediately after use with warm soapy water to prevent internal sprayer parts from becoming sticky and clogged with dried concentrate. Also, see also accompanying article, "When Not to Use Anti-Transpirants."

Final Statements

Overall, anti-transpirants are tools to help plants growing in otherwise optimal conditions to endure stressful, short-term conditions. It is important to remember that these applications are not likely to be successful as stand-alone winter protections. Standard horticultural approaches such as watering dry soils before the ground freezes and proper mulching practices will increase the efficacy of any anti-transpirant application. (Reference: Plant & Pest Advisory (Vol. 9, No. 16); "Anti-Transpirants-Winter Sprays to Protect Broadleaf Evergreens," by N. Polanin, W. Hlubik, R. Obal, & P. Nitzsche). □

Editor's Note: This is the last issue of the Plant & Pest Advisory Landscape, Nursery & Turf edition for the 2010 season. Thank you for subscribing.

When Not to Use Anti-Transpirants

Clare Liptak, Retired Somerset County Agricultural Agent

A reader contacted me about my article on the winter care of boxwood and asked about potential problems with anti-transpirants. See accompanying Primer on Anti-Transpirants article

There are 2 types of anti-transpirants based on how they protect the plant. In the metabolic category, anti-transpirants such as Stasis and the retail version, Vacation, are applied as soil drenches and cause the plant to increase production of a plant hormone called abscisic acid. (The name abscisic acid, abbreviated ABA, refers to the chemical's role in bringing on dormancy and causing the abscission layer to form between the leaf stalk and the twig. As the name of the retail formulation implies, the marketing info on Stasis and Vacation promote their use during the summer to prevent drought damage and transplant shock rather than desiccation during the winter.)

The anti-transpirant effect of ABA results when it causes the pores or stomates, mostly found on the lower surface of leaves, to close a bit reducing the amount of water vapor that can escape the plant, thereby avoiding desiccation. These metabolically-active products have the advantage over the second type, the waxy, film-forming anti-transpirants (Moisturin, Vapor Gard, Wilt Pruf, Stress Guard, Nu Film), in that they allow some carbon dioxide to enter the stomates so that photosynthesis continues. The film-forming products prevent water loss by covering the pores with wax, but they also keep carbon dioxide out. Since needled and broadleaved evergreens photosynthesize all year, stopping this process can weaken the plant or slow its growth.

A plant that can't produce sufficient starch through photosynthesis, even if it's been properly fertilized, will be lacking sufficient carbohydrates to turn into energy for normal growth of leaves, stems, roots and flowers. As plant managers we supply nutrients and water, but we don't supply plants with food. It's a subtle point, but an important one. Plants make their own food, which is starch, burned during respiration to provide energy for growth. Therefore, closing the pores of evergreens to protect them from winter sun and wind might work but it could result in a slower growing or weaker plant that is susceptible to insect or disease problems later.

Maybe you're asking "how much harm could it do to have a little less photosynthesis going on?" Since these products are often applied twice each winter, first in early December and then again in early February, that's about 4 months of reduced starch production by that plant.

So, these products seem worth it for specimen plants, but probably not for routine use in the landscape. Like any new product, try them on a low branch to see if they cause injury before treating the whole plant. And even then, they won't save a plant that hasn't been watered properly, or one that's planted in an unfavorable site. The unsightly burlap barrier on the other hand, does protect the plant from the wind, the afternoon winter sun, and something I forgot to mention in the first article, spray from de-icing salts on roads or driveways.

Clare Liptak, retired Somerset County Agricultural Agent, is an IPM scout, horticulturist, and Certified Tree Expert #208. clare.liptak@gmail.com. □

Rutgers Plant Diagnostic Laboratory Services

The Rutgers Plant Diagnostic Laboratory & Nematode Detection Service is a full-service plant health diagnostic facility sponsored by Rutgers New Jersey Agricultural Experiment Station. The Lab's mission is to provide accurate and timely diagnoses of plant health problems for the residents of New Jersey.

Located on the George H. Cook campus in New Brunswick, NJ, the Lab provides plant health diagnostic services in cooperation with Extension faculty, staff, and other university personnel. The Lab serves residential and commercial clientele.

The Rutgers Plant Diagnostic Laboratory provides the following services:

- ✓ Disease and Insect Pest Diagnosis
- ✓ Plant and Weed Identification
- ✓ Insect Identification
- ✓ Fungus and Mold Identification
- ✓ Nematode Assays
- ✓ Screening for Acremonium Endophytes
- ✓ Fungicide Resistance Screening
- ✓ Other Services Available by Contract

For fees and instructions on how to submit samples, go to the web at: <http://njaes.rutgers.edu/services> or call the lab at 732-932-9140, fax 732-932-1270 or e-mail clinic@njaes.rutgers.edu. □

It's a Good Time to... Test Your Soil!

Stephanie Murphy, Ph.D., Rutgers
Soil Testing Laboratory

The 2010 growing season is wrapping up, and landscaping chores mostly involve "cleaning up". While you're collecting leaves, think about what tasks you can do now that can help you prepare for next season.

One job you can do before the ground freezes is to take soil samples for testing. The nutrient levels that are analyzed for a fertility test will not change substantially between now and next March, and so the results and recommendations will allow you to learn what soil amendments you need to optimize soil fertility, plan your work efforts, and make your purchases well in advance. Testing now also provides the advantage of rapid response time from the soil testing lab, since the sample load is relatively low. Casual gardeners may not think of soil testing until the weather warms up next spring, and they'll all send their samples at the same time, wanting results before the next nice weekend!

Make soil testing a part of your late fall/winter maintenance routine to be better prepared and make next spring less hectic. Remember: soil testing helps you use your hard-earned dollars wisely by providing recommendations for the most appropriate fertilizer or amendment. And in addition to providing optimum conditions for your plants, proper fertilization prevents mis-use of nutrients that can cause environmental degradation. Always practice good landscape hygiene, cleaning up fertilizer granules, soil, grass clippings, and other plant detritus from impervious surfaces. Only water should be going into those storm sewers! So get back to those fall clean-up chores...

For information on submitting soil samples, contact your County Extension office or go to:

<http://njaes.rutgers.edu/soiltestinglab>. □

Great Information for Every Landscaper and Nurseryman at South Jersey Conference

Great information for every Nursery and Landscape Professional accurately describes the South Jersey Landscape Conference and Nursery Meeting on November 30, 2010. According to Bob Zentner, President of the New Jersey Nursery and Landscape Association, "This year's conference will again be held at Masso's Crystal Manor in Glassboro, NJ". Said Mr. Zentner, "We have a well balanced, all-day program with new ideas for everyone in the plant business".

NJ Secretary of Agriculture Douglas Fisher will kick off the program at 9:05 a.m. with an update on activities of the NJDA pertinent to the ornamental plant business. A panel discussion by key members of the nursery, garden center and landscape business will focus on current market trends. The group led by Suzanne Van Sciver will feature nurserymen Ed Overdevest; garden center operator, garden writer Lorraine Keifer; and landscaper Doug Kale. Dominic Mondini from NJNLA will discuss major state and federal regulations and legislation. Marcus VanderVliet of MV Consulting will focus on advising growers and landscapers on "Struggling with Your Cash Flow in Hard Economic Times". Pat Hastings at Rutgers NJAES will share the latest information on Pesticide Safety Regulations in the morning session for both groups.

The afternoon will be broken into two concurrent sessions according to Jerry Frecon, agricultural agent with Rutgers New Jersey Agricultural Experiment Station. One session for the landscapers will kick off with Sal Mangiafico of Rutgers NJAES discussing Stormwater Problems and Management followed by Jeff Charlesworth of Quercus Studio discussing the elements of good landscape design. Said Mr Frecon, "Dr. Ann Gould will share the latest information on plant air pollution and other environmental problems". "A panel discussion of success and failures of snow removal will be moderated by Dominic Mondini with panelists Peter Haran, Jeff Shrock, and Darren Rafferty", said Frecon.

The afternoon nursery session will focus on new problems and solutions in nursery insect management by Dr. Jim Lashomb of Rutgers NJAES. "New Products and Plant Lines" will be presented Gary Neinhaus, Spring Meadow Nursery, Inc. "We are also excited about having Mr. Ed Kiley from The Perennial Farms discuss Creative Marketing Programs for Nursery Stock," stated Mr. Frecon. Laura Gladney from Rutgers Risk Management Education Program will close the nursery session with an update on nursery crop insurance.

At the conclusion of each session New Jersey Pesticide Applicator Units for Category and CORE will be given where applicable. Certified Nursery and Landscape Professional Credits will be given as well.

Preregistration is required. Registration forms and the complete program are available at <http://gloucester.njaes.rutgers.edu> or by calling Jerry Frecon at 856 307-6450 Ext 1. or Dominic Mondini at NJNLA at 800 314-4836.

The full program is sponsored by Rutgers New Jersey Agricultural Experiment Station, Cooperative Extension in Cooperation with the New Jersey Nursery and Landscape Association. □



Poinsettia Open House

From 9:00 a.m. until 3:00 p.m.

Dec. 1 - Dec. 3, 2010

Floriculture Greenhouses

Cook Campus

**Rutgers School of Environment and
Biological Science (SEBS)**

New Brunswick, NJ 08901

Approximately 100+ Poinsettia cultivars provided by the leading breeders/propagators such as; Ball, Dummen, Ecke, and Syngenta, will be on display during our annual Poinsettia open house.

The Open House will take place from Dec. 1 - Dec. 3 between the hours of 9:00 a.m. to 3:00 p.m. at the Floriculture Greenhouses that are located behind Blake Hall, directly off of Nichol Avenue on the Cook Campus of SEBS. Regardless of whether you sell them, buy them, or just enjoy a colorful display, it will be a chance to see what's new, and learn more about growing, handling, and marketing this important crop.

We are finishing the crop (over 100 cultivars) under "cold" temperature regimes and provide water and inorganic nutrition thru a computer controlled trickle irrigation system. Anyone interested in energy conservation or moving to trickle irrigation management should find the Open House of interest. The program is informal and free of charge. It is not a plant sale, rather an educational opportunity open to anyone interested in learning more about this sometimes frustrating and still important floricultural crop.

The Open House dates from Dec 1- Dec. 3 are the official dates intended to accommodate the general public and grower; after November 15, 2010, *Commercial Poinsettia Growers* are welcome to visit any week day between 10:00 a.m. and 3:00 p.m. After this date plants will be labeled and supporting cultural information will be available. For more information call Ms. Nickie Graf at 732-932-9301.

Directions: From the NJ Turnpike: Turn off at exit 9 and follow signs for Route 18 North- New Brunswick. Proceed along Route 18 North after the first traffic light the road raises over Route 1. Take the exit for Route 1 South. It is on the right.

From Route 1 South: proceed past the turn off for Route 18. After the Ryder's Lane exit look for "College Farm Road" on the right. Turn right on College farm road and proceed to the four way stop at Dudley Road. Turn left on Dudley Road, and follow to the end at Nichol Ave. Turn right on Nichol Ave. the Floriculture greenhouses are on the right at the second entrance. From Route 1 North, proceed to the Squibb Drive/College Farm Road Exit. Turn left onto College Farm Road and proceed as above.

From 287: Take Exit 9 and follow river road east toward Highland Park. At the 5th light (approx. 3.7 miles), bear right onto the bridge and cross the Raritan River. This is Route 18 South. Stay on 18 south to route 1 south (Exit on right). Proceed as above. □



New Jersey Agricultural
Experiment Station

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PLANT & PEST ADVISORY

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Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

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