



Hort Notes

An educational newsletter with research-based information for businesses and individuals involved in selling, planning, designing, servicing, and enjoying landscapes and gardens.

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Criteria for Including a Species as a Non-Native Invasive Species or a Potentially Invasive Species in New England

At the 2001 New England Grows conference and trade show, Leslie J. Mehrhoff presented a slide lecture titled *Invasives: What's All the Fuss About?*. As part of his lecture, he distributed this informational sheet, *Criteria for Including a Species as a Non-Native Invasive Species or a Potentially Invasive Species in New England*.

Although these criteria have no official status for New England, they have been adopted in Connecticut and Massachusetts and proposed as the national model by the American Nursery and Landscape Association.

The criteria for determining invasiveness of non-native species will be tested this year by research supported by grants to the Massachusetts Invasive Plant Working Group. The outcome of that research may or may not result in some modification of the criteria. The Mass. Invasive Plant Working Group has also developed a draft set of definitions to accompany the criteria, which we will print in the next issue of *Hort Notes*.

These criteria were developed in order to objectively list vascular plant species (species as used here includes all subspecies, varieties, forms and cultivars unless otherwise noted.) that are invading minimally managed habitats. They were developed by the George Safford Torrey Herbarium at the University of Connecticut and reviewed and improved by input from many scientists, conservation professionals and nursery representatives. Additional input came from the Connecticut Invasive Plant Working Group, State Geological and Natural History Survey of Connecticut, the Connecticut Biodiversity Forum and most significantly the Definition and Criteria Sub-committee of the Massachusetts Invasive Plant Committee. This last group includes representatives from the nursery industry.

Tabular summary of how the criteria work.

To be considered:	Criteria that must be met:
Widespread and Invasive	1-9, 10A
Restricted and Invasive	1-9, 10B
Potentially Invasive	1-5, at least 1 of 11-13

THE CRITERIA:

For a species to be included as a **Non-native Invasive Species** or as a **Potentially Non-native Invasive Species**, it must be substantiated by scientific investigation (including herbarium specimens, peer-reviewed papers, published records and other data available for public review) and found to be:

1. Nonindigenous to New England.
2. Naturalized.
3. Have the biologic potential for rapid and widespread dispersion and establishment.
4. Have the biologic potential for dispersing over spatial gaps away from site of introduction.
5. Have the biologic potential for existing in high numbers away from intensively managed artificial habitats.

Further, to be included as a **Non-native Invasive Species**, a species must be documented to:

6. Be widespread in New England or at least common in a region or habitat type(s) in the state.
7. Have numerous individuals in many populations.
8. Be able to out-compete other species in the same natural plant community.
9. Have the potential for rapid growth, high seed or propagule production and dissemination, and establishment in natural plant communities.

There are two subdivisions of **Non-native Invasive Species**. Those that are currently invasive, cause serious management concerns or pose a serious threat to the biological diversity of the region and are widespread in New England are designated as **Widespread and Invasive**. Those that are equally invasive but currently have a restricted distribution in New England or occur only in a particular region or habitat type in the region are designated as **Restricted and Invasive**. Species in the latter category may be classified as **Widespread and Invasive** if new populations are found or numbers of populations increase throughout the region.

- 10A. To be considered as **Widespread and Invasive**, a species must be widespread in New England with many populations in minimally managed natural habitats.
- 10B. To be considered as **Restricted and Invasive**, a species must be common in at least part of the region or a particular habitat type(s) in the region and with some populations

in minimally managed natural habitats.

If a species meets the initial 5 criteria but does not, at this time, meet Criteria 6-9 (all), it may be included as a **Potentially Invasive Species** if it meets at least one of Criteria 11-13. In the past, some of these species have been considered invasive in New England, at least in part because they are known to be invasive in other regions and thus expected to be so here.

10. Have some populations in New England that have high numbers of individuals forming dense stands in minimally managed habitats.
11. Have the potential, based on its biology and its colonization history in the northeast or elsewhere, to become invasive in New England.
12. Be acknowledged to be invasive in nearby states but its status in New England is unknown or unclear. This may result from lack of field experience with the species or from difficulty in species determination or taxonomy.

For more information:

Connecticut Invasive Plant Working Group web site <http://www.eeb.uconn.edu/invasives>

Massachusetts Invasive Plant Working Group

Contact Cindy Boettner at (413) 863-0209.

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Deborah Swanson

UMass Extension Educator - Landscape, Nursery and Urban Forestry

UMass Extension Receives Grant from New England Grows

For the seventh year in a row, the New England Grows Board of Directors has voted to award educational grants of \$5000.00 each to six New England Cooperative Extension Systems at the 2001 conference. The requirements of this grant award are that the funds must be used for service to benefit commercial horticulture within your state and that credit be given to the New England Grows organization. UMass Extension's Landscape, Nursery and Urban Forestry program will be using this year's funds to partially support the expanded development of this web site.

Green Industry associated highlights from the 2000 Joint Annual Meeting of the Societe d'entomologie du Quebec, Entomological Society of Canada and the Entomological Society of America

December 3-6 2000 - Montreal, Quebec, Canada

Assessing intra- and inter- regional variations in phenological indicators for predicting insect activity

Daniel Herms, Ohio State University.

- Advised that all growing degree day (GDD) information be recorded for specific regions where insect activity is being observed. Important variations do exist that can effect timing of insect activity and implementation of management strategies. One state's GDD information for a specific pest may be markedly different in a neighboring state. The example given was for the emergence of oystershell scale crawlers; it varies from Ohio to Kentucky.
- Phenological patterns of certain insects varies across regions; caution is advised.
- There is usually little variation, from year to year, of specific pest emergence within a given region.

New exotic pests of ornamental plants in the U.S. northeast region

Daniel Gilrein, Cornell University

- Asian Longhorned Beetle:
It's proposed that \$365 million be spent in the next 10 years on the Asian Longhorned Beetle. So far, nearly 7000 trees have been removed and destroyed in the New York and Chicago areas due to the presence of this beetle. Eradication is still the method for managing this pest, once found. The least favored species for this pest are ash, *Platanus*, and black locust
- Smaller Japanese Cedar Longhorned Beetle:
Found in CT, NY, NJ, MA, RI, and NC. Attacks juniper, arborvitae, and others. It appears that drought stress plays a major role in this insect being present in a host plant.

Factors associated with resistance of viburnums to colonization by viburnum leaf beetle

Paul Weston, Cornell University

This insect strictly feeds on viburnums and poses a serious threat. Found in NY, ME, and parts of Canada but not yet in MA, CT, or RI. The adults make oblong cuts in the leaves; larvae heavily skeletonize the foliage. After 2 to 3 years of repeated defoliation, plants usually die. Very susceptible species include Arrowwood; very resistant: Korean spicebush. In general, the more "leathery" the foliage, the more resistant the variety is.

More information the viburnum leaf beetle can be found at

<http://www.news.cornell.edu/releases/June00/ViburnumBeetle.bpf.html>. The November 15, 2000 issue of *American Nurseryman* magazine also contains an article by Dr. Weston on this insect.

Conservation biological control of evergreen bagworms in ornamental landscapes

Jodie Ellis (not presenting), University of Illinois at Urbana-Champaign

- It was found that *Pimpla disparis*, a parasitic Ichneumonid wasp was effective in finding the bagworm pests in this study.
- When flowers were near / around the host plants, the activity of the parasite was increased. These offered a source of nectar and perhaps refuge.
- The English sparrow was also found to be a predator of bagworms in this study.

Author's Note: *Pimpla disparis* is a wasp species that was introduced in the 1970's (mostly in the Northeast) for such pests as the Gypsy Moth. It was recently found in southern Maine by researchers at UMass, Amherst to be an effective parasite of the Browntail Moth. It was also released in Illinois in the 1970's for Gypsy Moth and has apparently begun attacking

bagworm caterpillars.

Mite control on landscape ornamentals

Jack Finley, TruGreen-Chemlawn, Delaware, Ohio

- Hexygon™ is effective on the egg and larval stages of spider mites.
- Hexygon™ can only be applied once per year per plant (site).
- Floramite™ works on motile stages of spider mites as well as the eggs.
- Two other products must be used between uses of Floramite™
- For the two-spotted spider mite (a warm season mite), Floramite, Hexygon and Abamectin were all effective at both low (about 15 mites per leaf) and high (35-50 mites per leaf) population levels in this study.
- For cool season mites (southern red and spruce spider mite) Floramite (bifenazate) worked well but hexygon worked better, in this study.

Bob Childs

UMass Extension Entomologist

Report on Diseases in Ornamentals Seminar

On Friday, November 3, 2000 over 300 arborists, nurserymen, landscapers and other green industry professionals attended a half-day seminar, **Diseases in Ornamentals**, in North Falmouth, MA. The seminar, co-sponsored by UMass Extension and the Northeast Division of the American Phytopathological Society, opened with a discussion of *Foliage Diseases: Fears and Facts* by Dr. George Hudler of Cornell University. He talked about leaf spot and shoot blight diseases commonly seen, the impact they have on the health of affected trees, and various factors to consider when managing these problems. He was followed by Dr Rob Wick from the University of Massachusetts who provided a glimpse into the lives of plant parasitic nematodes and the damage they can do to the root systems of plants. Among other things, he reminded us to consider nematodes when plants show symptoms such as off-colored foliage, stunted growth or shoot dieback. In addition to other types of root damage, they could be an indication of a loss of root function due to nematode feeding damage. Definite diagnosis of nematode infection requires microscopic assessment of affected roots and the soil around them to determine if the nematodes are truly plant parasites and whether their numbers are sufficient to account for the symptoms seen on the distressed plants.

Margery Daughtry from Cornell discussed *Diseases and Insect Pests of Azaleas and Rhododendrons*. Rhododendrons are among the most commonly grown landscape and container plants. She talked about fundamental principles of management and cultural practices, as well as specific chemical controls that are useful in Rhododendron care. Next on the Program, Dan Gillman from University of Massachusetts Extension, spoke about *Drought Damage and Disease*. He went into some detail about the extent of the 1998-99 drought in New England and the impact that it had on trees and shrubs. The presentation spelled out the physiological consequences of prolonged drought. Lack of water not only directly damages the health of sensitive plants and reduces their vitality, it can impair the plant's ability to resist or limit certain diseases. To wrap up the seminar, George Hudler returned and in his inimitable style combined the straight facts with a dose of humor. He discussed non-infectious diseases of trees and shrubs,

other than drought and heat stress, that are commonly observed in landscapes, nurseries and tree farms.

Dan Gillman

UMass Extension Plant Pathologist