

Title: Plant Disease Diagnostics

Project Leader: Nick Brazee

Project Overview

The first step in effective disease management is an accurate diagnosis. The University of Massachusetts, Amherst recognizes the importance of reliable and prompt identification of plant problems for the turf, floriculture, vegetable, nursery, urban forestry and landscape industries. We serve farmers, horticulturists, landscape contractors, turf managers, arborists, nurseries, and others in agriculture and the green industries. In addition to plant disease and insect diagnostics, we also provide sound management strategies that utilize an integrated pest management approach. This includes cultural and chemical controls, when necessary. An emphasis is made to utilize management strategies that limit the input of insecticides, fungicides, bactericides and fertilizers into the landscape.

Activity Summary – 2016

- Contribute to and update UMass Center for Agriculture websites (20)
- Contribute to extension publications including (but not limited to) Landscape Message, HortNotes, VegNotes, Mayflower, and TurfTalk. (Printed Material (newsletter, factsheet, field manual) (40)
- Designated USDA-APHIS-PPQ lab for phytosanitary certification of freedom from the pinewilt nematode (*Bursaphelenchus xylophilus*) of pine lumber for export to China. (Diagnostic Services) (10)
- Invited seminars for industry professionals (24)
- Massachusetts Nursery and Landscape Association Trade Show (1)
- Guided twilight walks at farms in Massachusetts (3)
- Disease diagnostics and management for specialty crops (50)
- Participate in National Plant Diagnostic Network, Northeast Region by attending annual meeting, participating in exercises, conducting First Detector Training, and entering information into national database. (1)
- Green School (4)
- Provide pathogen identification, disease diagnosis, and management recommendations (1200)
- Respond to telephone and e-mail inquiries from commercial growers and the general public (250)

Total educational contacts

	Adult Contacts
Direct Contacts	2135
Indirect Contacts (Print, Web, etc...)	40500

Impact Summary and Narrative

In 2016, the UMass Extension Plant Diagnostic Lab continued to fulfill its primary mission of providing fast, reliable diagnosis of plant problems and detailed diagnostic reports outlining environmentally sustainable management techniques. Sample submitters receive education on the specific plant pathogen involved and management tactics tailored to the organisms or organisms found. Diagnostic lab staff participated in many educational outreach programs, which included: invited seminars for various trade groups, twilight walks to discuss disease and insect pests, printed and electronic publications, performing site visits for disease identification, editing technical manuals, and updating plant pathology fact sheets on many different CAFE websites. Applied research projects conducted through the Plant Diagnostic Lab focused on major pathogens of concern to landscape professionals and vegetable growers. Participants in educational outreach opportunities learn about the specific nature of plant problems and environmentally sustainable disease management. Numerous landscape professionals, vegetable growers and turf managers express their gratitude for the service we provide. Many of these individuals often tell us that they could not do their job without the diagnostic and management assistance we provide. Membership in the National Plant Diagnostic Network provides staff with updates on exotic and quarantine pests, presents educational opportunities for professional development, and allows lab staff to educate growers about exotic and/or newly emerging diseases. Diagnostic support to the Vegetable and Fruit IPM grant educates extension staff and growers about the nature of specific plants problems and their management as well as environmentally sustainable techniques for disease management.

Collaborators

- **National Plant Diagnostic Network**
- **(UNCLS) United States Department of Agriculture**
- **(AG) New England Grows**
- **(AG) Massachusetts Tree Wardens Association**
- **New England Vegetable and Berry Association**