UNIVERSITY OF MASSACHUSETTS

The Green Directory 2020

Resources for the Agricultural & Commercial Horticulture Industries of Massachusetts

This guide will help you find the services and programs offered by UMass Extension and the UMass Center for Agriculture, Food and the Environment. We are committed to helping Massachusetts' horticultural and agricultural businesses contribute to an economically and environmentally healthy Commonwealth.

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United States Department of Agriculture cooperating.

UMass Extension Agriculture & Commercial Horticulture Program

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Programs

Cranberry
Crops, Dairy, Livestock, Equine
Fruit
Greenhouse Crops & Floriculture
Landscape, Nursery & Urban Forestry
Pesticide Education
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UMass Extension

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UMass Extension

Green Directory

This directory highlights the educational resources provided by the Agriculture and Commercial Horticulture Program of University of Massachusetts Extension.

UMass Educators and Faculty assist agricultural and horticultural professionals by providing educational programs and research-based information on environmentally sound management practices.

Agriculture and Commercial Horticulture Program Staff

Cranberry - ag.umass.edu/cranberry

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Crop Insurance/Risk Management Education Program - ag.umass.edu/risk-management

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UMass Extension Newsletters

Cranberry Station Newsletter

Published periodically during the year, the *Cranberry Station Newsletter* presents timely information on cranberry pest management, horticulture, research findings, and current issues relevant to the industry. It also provides updates on available publications and upcoming meetings. Prepared by the UMass Cranberry Station faculty and staff. A hard copy is free to Massachusetts growers. All others can pay $15/year. Sign up for the free email version or view it online at www.umass.edu/cranberry/pubs/newsletter.html. We encourage all users to go green and sign up for the email version or view the newsletter online. To sign up for email or hard copy delivery, go to www.umass.edu/cranberry/pubs/news_signup.html or contact Robyn Hardy at (508)295-2212 ext. 10 or rmhardy@umass.edu for subscription information.

Crops, Dairy, Livestock, Equine Newsletter

Published quarterly, presenting information that crosscuts the various livestock industry areas (dairy, beef, sheep, goats, swine, and horses). Issues such as grazing, input cost control (crops, feeds, and nutrient management), and environmental quality (soil and water quality) are covered. It also presents results of ongoing research and outreach projects. Available online at extension.umass.edu/cdle. Contact Masoud Hashemi at (413)545-1843 or masoud@umass.edu.

Hort Notes: Clippings from the Garden

Welcome to the new and improved *Hort Notes*! UMass Extension's Landscape, Nursery, and Urban Forestry Program (LNUF) is combining its two monthly newsletters (*Hort Notes* and *Garden Clippings*) that have provided timely, research-based information to Green Industry professionals (*Hort Notes*) and home gardeners (*Garden Clippings*) for over 35 years. Both publications include information on the latest control strategies for insects and diseases of woody ornamentals, as well as weed management, alerts about current pest outbreaks, cultural information for the landscape and turf, and educational opportunities. Originally available in print and now found exclusively online, go to ag.umass.edu/landscape under the Newsletters tab for the current and archived issues.

In 2020, as we strive to make access to science-based information easier for all, we have combined aspects of both of these newsletters to provide one-stop shopping for all of your educational needs! *Hort Notes: Clippings from the Garden* will be written for landscapers, grounds managers, arborists, and other green industry professionals with the understanding that home gardeners may also look to this publication for information as well. This newsletter will include monthly email alerts to emerging landscape insect and disease problems while providing timely Integrated Pest Management strategies. It will emphasize timely plant health care practices and problem-solving information. Subscribe at ag.umass.edu/landscape under Services.

Fruit Notes

Fruit Notes is distributed to growers and researchers in 35 states in the US and 14 other countries. *Fruit Notes* focuses primarily on tree-fruit culture, but addresses small-fruit problems occasionally. Most reports are from current research at the University of Massachusetts and other universities. Subscription rates: $50 per year for the print version and $25 per year for the email version. Subscribe online at www.umassextensionbookstore.com. Contact Wesley Autio at (413)545-2963 or autio@umass.edu.

Healthy Fruit

Healthy Fruit is a timely newsletter delivered via email that includes information on tree-fruit and small-fruit horticulture, pest management, and related topics. The primary target reader is the commercial grower, but anyone growing fruit will benefit. HF is published weekly or biweekly from April through September and periodically throughout the rest of the year. You'll find pest/disease alerts with links to fact sheets and bulletins published during the year, meeting announcements, and updates to the *New England Tree Fruit Management Guide*. Subscription rate: $15/year. Subscribe online at www.umassextensionbookstore.com. For more information, contact Doreen York, (413)545-2254, dyork@umext.umass.edu.

IPM Berry Blast

IPM Berry Blast is a weekly in-season publication providing meeting notices, seasonal observations, and current pest, disease and weed information. Subscription rate: $15/year. Subscribe online at www.umassextensionbookstore.com. For more information contact Doreen York, (413) 545-2254, dyork@umext.umass.edu.

New England Grape Notes

A periodic electronic newsletter published during the growing season with approximately 10 issues annually, distributed throughout New England. Each issue contains seasonally relevant information on grape production, insect and disease management, harvest parameters, upcoming meetings, and related topics. Information about all types of production including IPM, organic, and conventional management is provided. Email subscriptions are $10 per year. For more information, contact: Sonia Schloemann, umassfruit@umass.edu.

Vegetable Notes

For commercial vegetable growers and market gardeners, published weekly during the growing season and periodically during the winter. From May to September, each issue features timely, field-based alerts and articles on management of crops, weeds, insects and diseases, fertility, soils, and cover crops. We focus on Integrated Pest Management for both conventional and organic systems, alternative crops and cropping systems, nutrient management, season extension, and post-harvest handling. Regional pest alerts, including sweet corn trap captures, are reported weekly. Event updates include twilight meetings and field days throughout New England. Winter editions provide research reports and articles plus announcements of conferences and educational programs in the region. *Vegetable Notes* is available free of charge by email subscription as a PDF, or on our website. Subscribe at ag.umass.edu/vegetable.

Conferences and Workshops

UMass Winter School for Turf Managers

January 6 - February 14, 2020

Location: UMass Amherst

This comprehensive certificate short course is designed to convey concepts essential to maintaining high quality turf, with emphasis on environmental stewardship and fiscal responsibility. Who should attend? Experienced professionals associated with the management of golf courses, athletic fields, parks, municipal and private grounds, fine lawns and landscapes as well as those who may wish to enter the turf industry. The course provides an average of 34 hours of intensive, expert instruction by UMass faculty, staff and invited guests each week, covering general turf management, physiology, pest management, soils, fertilizers, irrigation, and more. Enrollment is limited.

Pesticide recertification contact hours valid for licenses in all New England states will be available for categories 37 (turf) and 00 (licensed applicator).

For more information, visit ag.umass.edu/turf or contact the UMass Winter School for Turf Managers at (413) 545-5202. Applications for the 2021 course will be available in the summer of 2020.

2020 Greenhouse Production Winter Education Program

January 14, 2020
9:00 am - 3:15 pm
Location: Westford Regency Inn & Conference Center, 219 Littleton Road, Westford, MA 01886

As each new season arrives, greenhouse growers face fresh challenges for continually refining production systems and improving crop quality. Join us, along with some of the top experts in the field today, to learn the latest practices for managing pests, managing the greenhouse environment, and optimizing plant nutrition to make the most of your time and budget. Topics will include: greenhouse environment strategies for optimal plant performance, botrytis biology and management, ID of major greenhouse pests, use of guardian plants, and improving fertilizer efficiency.

Three pesticide recertification credits in Massachusetts category 26 (greenhouse) have been approved for this program, valid for equivalent categories in all New England states.

Preregistration is required, as space is limited; cost $55 per person. Lunch is on your own. For more information, go to ag.umass.edu/greenhouse-floriculture or contact Geoffrey Njue, UMass Extension, (617) 243-1932, gnjue@umext.umass.edu or Jason Lanier at (413) 545-2965; jdl@umass.edu.

Cranberry Management Update

January 30, 2020
7:30 am - 4:00 pm
Location: Rosebrook Event Center, Town Place Marriott, Wareham, MA

Timely updates for cranberry growers. For more information and registration materials, go to www.umass.edu/cranberry or call the Cranberry Station at (508)295-2212.

New England Vegetable & Berry Growers' Association Winter Meetings

Dates and Locations: Generally the first Friday or Saturday of December, January, and February

Meetings each year keep members engaged and informed on developments in the field. Prominent growers share their experiences, and research and Extension personnel from Universities and industry report on cultural practices, pest management, and marketing. Find dates and locations at nevbga.org. Contact: Chris Grant, 978-423-6694, secretary@nevbga.org

Pesticide Education Program Workshops

Contact Natalia Clifton, UMass Extension, at (413) 545-1044 or check www.umass.edu/pested for the schedule of 2020 workshops. More details on page 38.

Mass Aggie Seminars: Home Garden Series

February through May, 2020 - Times, dates, and locations vary.

The UMass Extension Fruit Program offers a workshop series on topics of general interest to home gardeners and small scale farmers. Topics include Home Orchard Pruning; Home Orchard Management; Growing and Pruning Blueberries; Raspberries, and Grapes; Edible Landscaping, Pollinator Protection; and a range of other topics.

Costs vary. For a registration form or more information, go to www.umassgarden.com or contact Doreen York at (413)545-2254, dyork@umext.umass.edu.

TickTalk with TickReport! A Live Webinar Series

Second Wednesday of the month beginning February 12, 2020!
12:00 - 1:00 pm
Location: Online

TickTalk with TickReport is back for 2020! Starting in February, we will hear from Dr. Stephen Rich and the Laboratory of Medical Zoology (LMZ) every month! TickTalk in 2020 will also feature exciting guest speakers on tick topics that you told us were important to YOU. The series will include seasonality and life stages of ticks (key to planning intervention and prevention), emerging or invasive tick species, how ticks use vegetation and leaf litter throughout their life cycle, increasing fears of Alpha-gal allergies (allergies to certain meat and animal-related products), dispelling myths of tick control, and many more. Mosquito concerns, including life cycle, behavior, and EEE infection, will also be addressed and Dr. Rich will discuss the tens of thousands of mosquitoes that LMZ tests each year for a range of viruses. Tune in the 2nd Wednesday of the month!

This FREE series is brought to you by the UMass Laboratory of Medical Zoology and UMass Extension. Preregistration is required to access the webinars. To be notified of upcoming webinar dates and topics, join our e-mail list at ag.umass.edu/landscape/email-list. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

No pesticide contact hours or association CEU's will be available for this free series.
The first webinar is described below. Future topics TBA.

February 12, 2020 - Seasonal Variation in Activity and Abundance of Human-Biting Ticks
Dr. Stephen Rich, UMass Laboratory of Medical Zoology
Throughout their ranges, human biting ticks can be found actively seeking hosts throughout the year, but the size (life stage) of ticks and their relative density varies through the seasons. In this presentation, we will cover the ticks' life cycle and how it impacts the risk of tick-borne disease exposure.

Vegetable Twilight Meetings and Field Walks

Dates and locations TBA

Throughout the year, the UMass Extension Vegetable Team offers educational programs and farm tours on vegetable farms in various locations across Massachusetts. We partner with other organizations and other commodity groups to highlight successful and innovative production and marketing practices for diversified farms. Details of dates and locations will be posted on ag.umass.edu/vegetable and in *Vegetable Notes*. You may also contact the Vegetable Program at (413) 577-3976 or at umassvegetable@umass.edu.

Invasive Plant Certification Program

A1 - February 19, 2020, 9 am to 2:30 pm
A2 - March 18, 2020, 9 am to 3:00 pm
A3 - April 1, 2020, 9 am to 2:00 pm
B - April 15, 2020, 9 am to 2:30 pm

Location: Westford Regency Inn, Westford, MA

In the last several years, there has been growing interest in invasive plants and their management. While turf and landscape professionals might be very proficient in the development of a weed management program for turf and/or landscape, invasive plant management often reveals many new and unique challenges to these professionals. This 4-day program is intended to help participants meet these challenges when attempting to develop an invasive plant management program as part of their business. A certificate in Invasive Plant Management may be obtained by attending all four sessions and obtaining a passing grade in each. To earn the certificate, sessions A1 - A3 can be taken in any order, but must be taken prior to Session B: Developing an Invasive Plant Management Program. Attendees are encouraged to take all four sessions in one season to get the most out of the information. All sessions may also be taken individually. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413)545-0895 or eweeks@umext.umass.edu.

A1 Principles and Fundamentals of Weed Science
A critical first step in the development of a weed or invasive plant management program is a strong and complete understanding of several principles and fundamentals of the discipline of weed science. The session will cover the topics of weed biology, weed ecology, herbicide modes-of-action, herbicide timings and more. Cost: $95/$86 per person for three or more registrations from the same company (10% discount).
Four pesticide contact hours in categories 29, 36, 37, 40, and Applicator's License.

A2 State Regulations Pertaining to Invasive Plant Management
While landscape and turf professionals may be knowledgeable about the state regulations that govern the type of work they normally do, regulations that govern certain aspects of invasive plant management may be different. This session covers state regulations including the Wetlands Protection Act, the Rivers Protection Act, and pesticide regulations, including those specific to right-of-ways.
Cost: $95/$86 per person for three or more registrations from the same company (10% discount).
Two pesticide contact hours in categories 29, 36, 37, 40, and Applicator's License.

A3 The Invasive Plant Issue and Invasive Plant Identification
An overview of the topic of invasive plants, focusing on why we should be concerned about them and enhancing your ability to readily identify invasive plants as well as their look-alikes. The work of the Massachusetts Invasive Plant Advisory Group, including its strategies, recommendations, and the Early Detection/Rapid Response Priority List document, will be discussed. Cost: $95/$86 per person for three or more registrations from the same company (10% discount).
Three pesticide contact hours in categories 29, 36, 37, 40, and Applicator's License.

B Developing an Invasive Plant Management Program
This session will help participants develop and implement an invasive plant management program. Management tips and strategies will be discussed including herbicide selection and timing, non-chemical strategies and ways to avoid common program pitfalls.
Cost: $95/$86 per person for three or more registrations from the same company (10% discount).
Four pesticide contact hours in categories 29, 36, 37, 40, and Applicator's License.

Pollinators in Our Landscapes Conference

February 26, 2020
8:30 am - 3:30 pm
Location: Doubletree Hotel, Milford, MA

Bringing together stakeholders with shared concerns about pollinator health, habitat, and their future success and prosperity in Massachusetts and New England. Our Landscape, Nursery, and Urban Forestry Program seeks to encourage communication between Green Industry professionals including landscapers, land managers, arborists, licensed pesticide applicators, and other landscape practitioners with professional beekeepers, researchers, and state officials who share the common goal of maintaining and encouraging pollinator health in Massachusetts. The goal of this shared day of education is not only to hear about the latest research, but also to encourage further networking between diverse groups of stakeholders who share at least one common interest: pollinator protection. Topics to include native bees and pollinators, a review of steps applicators can take to reduce unintended negative impacts on these insects, management of residential yards and other urban green spaces for native bee habitat, recent research looking at the impact of sunflower pollen on diseases of pollinators, and the top 10 most practical actions you can take to protect our pollinators.

Four pesticide contact hours for categories 29, 36, 37, 48, and Applicators License. ISA, SAF, CFE, MCA, MCH, and MCLP available.

Preregistration is required, as space is limited; cost is $95/$86 per person for three or more registrations from the same company (10% discount). Lunch is on your own, morning coffee will be provided. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Snow Mold Research Field Days

Late winter - Early spring, 2020

These field days provide an opportunity to see first-hand the results of the UMass Turf Program snow mold field trials for turfgrasses maintained at fairway height. Trials at golf courses will be used for testing snow mold products against a mixture of pink snow mold (caused by *Microdochium nivale*) and Typhula Blight (caused by *Typhula* spp.) under natural conditions. Identification of fungal species at each site will be confirmed by using morphological characters and DNA techniques.

Specific snow mold trials and field day sites TBA.

Workshop dates are dependent on snowmelt and prevailing disease conditions. Dates will be announced in February. To sign up to receive specific notification of dates and times by email, visit www.umassturf.org and click on Mailing List.

For further information on the snow mold research trials, contact Dr. Geunhwa Jung at (413) 545-2243, jung@umass.edu, the UMass Extension Turf Program at (508) 892-0382, or online at ag.umass.edu/turf.

41st Annual UMass Community Tree Conference
Challenges and Opportunities for 2020:
What's New in Arboriculture & Urban Forestry?

March 10, 2020 - 8:45 am – 3:30 pm
Location: Bowker Auditorium, Stockbridge Hall, UMass Amherst

This one-day conference is designed for tree care professionals, volunteers, and enthusiasts including arborists, tree wardens, urban foresters, foresters, landscape architects and shade tree committee members. This year's conference will present updates on safety (ANSI Z133 revision), pest management, research, and i-Tree as well as managing invasives in Springfield. Sponsored by UMass Extension in cooperation with the UMass Dept. of Environmental Conservation, the Massachusetts Department of Conservation and Recreation and the USDA Forest Service Urban Natural Resources Institute.

Two pesticide contact hours for categories 29, 35, 36, and Applicators License. ISA, SAF, CFE, MCA, MCH, MCLP, and CTSP credits available.

Cost is $95 for first registration, $75/person for each additional registration from the same company. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Spring Kickoff for Landscapers: UMass Extension Landscape Education Day

March 26, 2020
9:00 am - 3:15 pm
Location: Topsfield Fairgrounds, 207 Boston Street, Topsfield, MA

Sustainable landscaping uses multiple management strategies that seek to reduce negative impacts on the environment while maintaining aesthetically pleasing landscapes. Come join us to learn management strategies and practices that you can implement to provide beautiful, functional and environmentally friendly landscapes for your customers. Topics include: how to deal with nuisance wildlife and effective ways to attract and support pollinators in managed landscapes, troubleshooting common diseases of perennials in the landscape, taming the top troublesome insect pests of woody landscape plants, and early season weed management.

Four pesticide contact hours for categories 29, 36, and Applicators License. ISA, MCA, MCH, and MCLP credits available.

Preregistration required as space is limited; the cost is $95/$86 per person for three or more registrations from the same company (10% discount). Lunch will be provided to program attendees free of charge by Northeast Nursery at the fairground. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895, eweeks@umext.umass.edu, or Geoffrey Njue, UMass Extension, at gnjue@umext.umass.edu.

Fruit Twilight Meetings and Field Days

Twilights in April, May, June, dates and locations TBA
Field Day in July, date and location TBA

The UMass Extension Fruit Team conducts twilight meetings during the months of April, May and June each year. Each month there will be 2-3 meetings with similar content but in different locations around the state. The meeting content will be tailored to important issues that growers face at that time of year. For example, specific pest issues that are coming up or crop thinning recommendations or new concerns based on current conditions. The meetings are co-sponsored by the Massachusetts Fruit Grower's Association and there is a $20-$25 fee for attendance. Details of each year's Fruit Twilight Meetings will be posted at ag.umass.edu/fruit. In July, there is also a day long Field Day and Annual Meeting in collaboration with the Massachusetts Fruit Grower's Association. This meeting highlights a farm/orchard tour and current research and timely topics.

For more information on any of these meetings contact Jon Clements at jon.clements@umass.edu or Sonia Schloemann at umassfruit@umass.edu

Weed Walkabout

May 19, 2020
3:00 - 5:00 pm
Location: Westborough Senior Center, Westborough, MA

Correct weed identification and site assessment are important steps in the development of an effective weed management program for turf and landscape. Join Randy Prostak, Extension Weed Specialist, for a walk through the landscape for an up-close look at weed problems in diverse habitats. Held rain or shine.

Two pesticide contact hours for categories 36, 37, and Applicators License. ISA, MCA, MCH, and MCLP credit available.

Preregistration required as space is limited; the cost is $50/$45 per person for three or more registrations from the same company (10% discount). For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Landscape Pests and Problems Walkabout: Diseases and Weeds

June 4, 2020
2:00 - 4:00 pm
Location: Acton Arboretum, Acton, MA

Get some hands-on experience scouting and identifying landscape disease and weeds problems. Join Randy Prostak, Extension Weed Specialist, and Nick Brazee, Extension Plant Pathologist, for a walk through the landscape as they discuss and demonstrate how to put IPM practices to work efficiently and examine some of the most common disease and weed problems of woody ornamentals. Dress for walking; workshop held rain or shine. Bring a clipboard, pencil and hand lens if possible.

Two pesticide contact hours for categories 36 and Applicators License. ISA, MCA, MCH, and MCLP credits available.

Preregistration required as space is limited; the cost is $50/$45 per person for three or more registrations from the same company (10% discount). For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Ornamental Tree and Shrub ID and Insect Walks

June 11, 2020
2:00 - 4:00 pm
Location: Tower Hill Botanic Garden, Boylston, MA

September 9, 2020
2:00 - 4:00 pm
Location: Berkshire Botanical Garden, Stockbridge, MA

Studying for the MCH, MCLP, or MCA exam? Want some hands on experience identifying significant landscape plants to either prepare for one of the exams or to expand your palette of offerings for your clients, while also scouting for potential insect problems? Join Tawny Simisky, Extension Entomologist, and Dr. Mandy Bayer, Extension Assistant Professor at UMass Amherst, for a walk around the grounds at two of Massachusetts' beautiful botanic gardens. Both walkabouts will focus on trees and shrubs with particular seasonal interest as well as insect pests that are active. Dress for walking; held outdoors rain or shine.

One pesticide contact hour for category 36 and Applicators License. ISA, MCA, MCH, and MCLP credits available.

Preregistration required as space is limited; the cost is $50/$45 per person for three or more registrations from the same company (10% discount). For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Plant Camp!

Day 1 - Pollinator Plants
June 16, 2020
9:00 am - 3:30 pm
Location: Smith College, Northampton, MA

Day 2 - Multi-Season Standouts
Date: TBD
9:00 am - 3:30 pm
Location: TBD

Just starting out in the green industry, taking the MCH exam, or looking to expand your plant palette? UMass Extension's Plant Camp offers a plant ID workshop series that can help! See below for this year's sessions in this annual series. Additional topics in new locations will be covered each year.

Association credits: ISA, MCH, MCA, and MCLP available (no pesticide contact hours available).

Cost: Pollinator Plants (Day 1) - $95 pp; $86 per person for three or more registrations from the same company (10% discount).

Multi-Season Standouts (Day 2) $95 pp; $86 per person for three or more registrations from the same company (10% discount).

Combination for both days - $160 pp, $135 per person for three or more registrations from the same company (10% discount).

Preregistration required as space is limited. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Landscape and Forest Tree and Shrub Insects Workshop

June 25, 2020
9:00 am - 3:30 pm
Location: Room 107 Fernald Hall, University of Massachusetts Amherst

Join Tawny Simisky, UMass Extension Entomology Specialist, for this workshop where participants will gain hands-on experience with many important landscape and forest insect pests of trees and shrubs. The UMass-Amherst campus arboretum offers a wide variety of ornamental and forest trees and shrubs. Selected insects to be discussed will include bark beetles and wood borers, pests with piercing-sucking mouthparts, defoliators, miners/leaf rollers, gall makers, and more. An introductory lecture will review the basics of diagnostic entomology followed by a walking tour of campus. The day will end with a laboratory session using microscopy, giving us the opportunity for an up-close and personal view of some of these insects.

Five pesticide contact hours for categories 29, 35, 36, and Applicators License. ISA, SAF, CFE, MCA, MCH and MCLP credits available.

Preregistration is required, as space is limited to 25 participants; cost is $150/$135 per person for three or more registrations from the same company (10% discount). Lunch is on your own, morning coffee will be provided. For more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

Green School

October 26 - December 14, 2020
Twice weekly, 9 am - 3:30 pm
Location: Doubletree Hotel, Milford, MA

Presented by the Landscape, Nursery and Urban Forestry Program and the Turf Program, Green School is a comprehensive educational training program for Green Industry professionals, which provides instruction on the relationship of horticultural fundamentals to environmental quality and instills a sense of environmental stewardship in participants. Knowledge of plants and plant systems as well as integrated pest management (IPM) is the basis of the curriculum.

The 60-hour training program focuses on management of the landscape as a whole, and is appropriate for garden center managers and employees, private or municipal grounds managers and personnel, landscape and lawn care operators, nursery operators and personnel, and professional gardeners. Horticulture professionals learn about basic plant management with emphasis on IPM concepts and the optimization of pest control through proper cultural management of turf, woody ornamentals, and other related specialties.

Participants can choose one of three specialty tracks: **Landscape Management, Turf Management, or Arboriculture**. Topics are taught by University of Massachusetts Extension educators and UMass Amherst faculty, as well as other professionals recognized in their areas of expertise in the Northeast. Classes are held twice a week from 9:00 a.m. to 3:30 p.m. The next Green School will be held in 2022.

Preregistration is required, as space is limited. Early-bird registration by October 5, 2020 is $1045 per person; the regular rate thereafter is $1095 per person. If paying by cash or check, BEFORE the early bird deadline, there is a reduced rate of $995 per person.

For an application or further information, go to www.umassgreeninfo.org or contact the Landscape, Nursery, and Urban Forestry Program at (413)545-0895 or Jason Lanier, UMass Extension Turf Program, at (413)545-2965. To receive advance notice of the 2020 schedule and registration information by email when it becomes available, sign up at www.umassgreeninfo.org and click on 'Services' and then 'E-Mail List.'

Fall Wrap-Up
Landscape, Grounds & Turf Managers Education Day Special Topics

November 2020 TBA
Location: TBA

For registration form or more information, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery, and Urban Forestry Program at (413) 545-0895 or eweeks@umext.umass.edu.

New England Vegetable & Fruit Conference & Trade Show

Dates: 2021 TBA, typically early December
Location: TBA

The premier fruit and vegetable conference in New England will once again offer three full days with over thirty educational sessions that cover all of the major vegetable, berry, and tree fruit crops, as well as various special topics. Each morning and afternoon offers concurrent sessions which offer the latest research and innovative practices and include the perspectives of farmers, Extension staff, and researchers. Farmer-to-farmer sessions bring speakers and farmers together for informal, in-depth discussion on 'hot topics.' The extensive trade show offers over 100 exhibitors who cater especially to the needs of vegetable and fruit growers. Join over 1,500 growers from around New England, and don't miss this every-other-year event! Sponsored by the New England Vegetable and Fruit Extension Programs, the New England Vegetable and Berry Growers Association, and the Massachusetts Fruit Growers Association.

Registration, detailed program, and hotel contacts: www.newenglandvfc.org. For more information see the website above or contact Chris Grant at 978-423-6694 or nevbga@gmail.com.

UMass Turf Research Field Day

July 17, 2021
Location: UMass Joseph Troll Turf Research Center, South Deerfield, MA

This Field Day is held every other year. The next Field Day will be held in July 2021. Participants will have the opportunity to meet and speak with UMass Turf Program staff and to view projects underway. Current turf research includes studies on the biology and integrated management of turf-damaging disease and insects, short- and long-term weed management, fertility, wear tolerance and drought management, as well as a range of National Turfgrass Evaluation Program fine turf trials. Field Day will also feature displays and demonstrations from turf industry commercial partners. A barbecue lunch will be served.

Pesticide recertification contact hours valid for licenses in all New England states will be available for category 37 (turf) and category 00 (licensed applicator).

For more information, contact the UMass Extension Turf Program at (508) 892-0382, email fieldday@umassturf.org or visit ag.umass.edu/turf. UMass TurfTalk subscribers will receive notice of posting of program.

Invasive Insect Certification Program

The Invasive Insect Certification program is offered every other year. The next classes will be in 2021.

This three-day program looks at the characteristics of invasive insects, as well as the impacts and costs they have regionally and nationwide, and highlights the biology, ecology, and identification of some of the most destructive insects. This includes (but is not limited to) the Asian longhorned beetle, cynipid oak gall wasp, emerald ash borer, gypsy moth, hemlock woolly adelgid, and winter moth. State and federal regulations pertaining to invasive insect management will be discussed, as well as invasive forest and agricultural insects in Massachusetts along with warnings about potential newcomers. Management of invasive insects as a part of landscapes will be presented along with strategies to prevent human assisted movement of these organisms. Integrated Pest Management will be the focus, highlighting cultural and mechanical management options along with the use of biological control.

Online Updates: First Alert Messages

Greenhouse Updates and Email List

Greenhouse managers: Receive timely reports about what's happening with pests, nutrition, marketing and other issues that affect your greenhouse business. University educators post updates to our website at ag.umass.edu/greenhouse-floriculture/greenhouse-updates based on seasonal developments and observations from the field. As new information is added, an email sends a reminder and provides a direct link. To be added to the email list go to ag.umass.edu/greenhouse-floriculture-updates/e-mail-list or contact Jason Lanier at (413) 545-2965; jdl@umass.edu.

Turf Management Updates and TurfTalk Email List

Turf managers: Keep current with the latest Northeast regional turf management information by visiting the UMass Extension Turf Program web site, ag.umass.edu/turf. During the growing season, UMass Extension Turf Specialists post Management Updates on a regular basis. These messages cover disease outbreaks, insect population status, cultural strategies for managing turf, and other timely information.

Subscribe to the *UMass TurfTalk* email list, and you will be immediately notified when a new Update is posted to the website. You will also be notified of upcoming events and educational opportunities. For instructions on how to subscribe to the list, at no cost, please visit ag.umass.edu/turf, click on "Services," then "E-Mail List."

The Landscape Message and Email List

The Landscape Message is an educational newsletter that informs and guides horticultural professionals in the management of our collective landscape. Scouts compile and record environmental and phenological data for locations throughout Massachusetts to aid in the monitoring of plant and pest development, the planning of management strategies, and the creation of site-specific records for future reference.

The Landscape Message allows landscapers, arborists, turf managers, nursery growers, garden designers and other practitioners to be in touch with local trends and challenges. The following detailed reports from Extension specialists are regular features for turf and landscape plant materials:

- Weather and general conditions reports
- Insect activity and population development
- Disease occurrences and potential disease problems
- Growing degree day reports
- Phenology information for key indicator plants
- Cultural problems and solutions
- Pest management strategies based on Integrated Pest Management

Approximately 20 messages are published each year. A new message is available weekly during the heart of the growing season, bi-weekly in mid to late summer, and monthly in the fall/winter.

Subscribe to our e-mail list to receive notification when each new message is posted: go to ag.umass.edu/landscape and click on 'Services' and 'Email List." Subscribers also receive advance notice of postings of program agendas and registration information by email. For more information, call (413)545-0895.

Fruit Pest Alerts

By visiting the *UMass Fruit Advisor* website (ag.umass.edu/fruit) or by subscribing to *Healthy Fruit* (see page 9), you will have access to pest alerts for spotted wing drosophila, brown marmorated stink bug, winter moth and any other invasive pests that may become important. We also report findings of scouting for common non-invasive pests and diseases like apple scab, European apple sawfly, codling moth, tarnished plant bug, mites, etc. Access by going to ag.umass.edu/fruit.

Vegetable Pest Alerts

Subscribe to *Vegetable Notes* (see page 9) for free and receive weekly pest alerts from the region to help you anticipate what is coming and find out what insect and disease pests are active near you. A regional pest alert network includes monitoring sites with pheromone traps for sweet corn pests (European corn borer, corn earworm, fall army worm) and squash vine borer. We also report on scouting data collected on farms weekly throughout the region. Subscribe to *Vegetable Notes*: ag.umass.edu/vegetable/vegetable-notes/subscribe

Follow Us on Twitter

@UMassLandscape
Information and updates for landscapers, grounds managers, and other green industry professionals from UMass Extension.

@UMassGardenClip
Information and updates for home gardeners from UMass Extension

@JMCEXTMAN
Information and updates for fruit growers on recent pest and disease events, weather related alerts and other relevant issues from UMass Extension.

Find Us on Facebook

UMASS EXTENSION GREENHOUSE CROPS AND FLORICULTURE
Link from: ag.umass.edu/greenhouse-floriculture.

UMASS VEGETABLE & FRUIT IPM NETWORK
umassipmteam

UMASS EXTENSION LANDSCAPE NURSERY AND URBAN FORESTRY
UMassExtLandscape

UMASS TURF
UMassTurf

URBAN FORESTRY TODAY
UFToday

and Find Us on Instagram

UMASS GREENHOUSE PROGRAM
@umassgreenhouse

Soil and Plant Nutrient Testing

soiltest.umass.edu

The UMass Extension Soil & Plant Nutrition Lab offers reliable testing and unbiased and crop-specific recommendations to farmers, gardeners, turf managers, landscapers, and more. Go to **soiltest.umass.edu** for a current list of services, pricing and order forms.

SOIL

Routine Soil Analysis - $20.00; includes pH, Exchangeable Acidity, Extractable Nutrients (P, K, Ca, Mg, Fe, Mn, Zn, Cu, B), Extractable Aluminum, Cation Exchange Capacity, Percent Base Saturation. Also included, Extractable Lead.

Optional Additional Analysis for Soil:

Soil Organic Matter - $6.00; determination of Percent Soil Organic Matter by Loss on Ignition

Soluble Salts - $6.00; a measurement of the Electrical Conductivity of a 1:2 (soil:water) extract

Soil Nitrate - $8.00; Measurement of nitrate nitrogen (NO3-N) using an ion specific electrode

Comprehensive Soil Texture - $85.00; a determination of USDA textural classification by combined hydrometer analysis of silt and clay, and dry sieving of sand. Results list percentages of sand, silt and clay, as well as sub-fractions of silt and clay. U.S. Standard Sieves used: No. 10, 18, 35, 60, 140, and 270.

Optional Additional Analysis for Soil Texture:

Extra Sieves - $10.00; up to 4 sieves may be added to the Comprehensive Soil Texture

Grain Size Distribution Curve - $10.00

Report based on Percent of Sample Passing the 2mm sieve - No fee

Optional Additional Analysis for Soil Texture - $10.00

Report based on Percent of Sample Passing the 2mm Sieve - No charge; contact the lab for this.

Basic Particle Size Analysis - $50.00; a determination of USDA textural classification by hydrometer method. Results list percentages of sand, silt, and clay only, as well as MA Title V Textural Class.

Title V Sand Determination - $60.00; a determination of MA Title V Sand for new septic construction

SOILLESS GREENHOUSE MEDIA

Saturated Media Test - $30.00; provides pH of Water Saturated Media, Electrical Conductivity and Nutrient Content (Nitrate-N, Ammonium-N, P, K, Ca, Mg, Zn, B, Mn, Cu, and Fe)

METALS

Total Sorbed Metals Test - $55.00; determines the total sorbed levels of lead, nickel, cadmium, chromium, zinc, and copper in soils, compost, or planting mixtures using the EPA methods 3050B and 6010. Additional metals, arsenic, selenium, and molybdenum may be added to Total Sorbed Metals test for $5.00 per element.

PLANT TISSUE NUTRIENT ANALYSIS

Note: Plant tissue tests offered by the UMass Soil and Plant Tissue Laboratory provide nutrient analysis only. They do not diagnose problems caused by insects, disease or other environmental factors. For disease or insect diagnosis, please visit the UMass Plant Diagnostics Laboratory. See page 25.

Plant Nutrient Test (without Nitrogen) - $30.00; a determination of the total tissue P, K, Ca, Mg, Zn, Cu, Mn, Fe, and B. Analysis by ICP spectrometry of acid wet digestion using Nitric Acid, Hydrochloric Acid, and Hydrogen Peroxide in a block digester.

Plant Nutrient Test (with Nitrogen) - $45.00; same as above plus total Nitrogen by catalytic combustion.

UMass Extension Soil & Plant Nutrient Testing Lab

203 Paige Lab - 161 Holdsworth Way - Amherst, MA 01003

(413)545-2311 • **soiltest@umass.edu**

Short term parking behind the building, longer term parking is available in the Campus Center Garage.

Hot Water Seed Treatment ag.umass.edu/services/hot-water-seed-treatment

Contact: **Genevieve Higgins**, (413) 577-3976, ghiggins@umass.edu

Some plant pathogens are able to penetrate and survive within the seed, out of reach of surface seed treatments. They include many bacterial pathogens of vegetables as well as fungi, oomycetes, and viruses. Small seeded crops like tomato, pepper and brassicas are good candidates for hot water seed treatment because heat can easily penetrate the seed coat and kill common bacterial and fungal diseases without damaging seed germination. Even though pathogens do not survive well in soil once infected crop residues have decayed, they can be difficult to manage once established on a farm. Hot water seed treatment also has the beneficial effect of priming seeds resulting in faster germination than untreated seed. Hot water seed treatment is a valuable tool for preventing establishment of seed-borne diseases on the farm, or their reintroduction year after year.

Tick Diagnostics www.TickReport.com

Contact: **Laboratory of Medical Zoology**, (413) 545-1057, info@tickreport.com
101 Fernald Hall, University of Massachusetts, 270 Stockbridge Road, Amherst, MA 01003

The Laboratory of Medical Zoology at UMass Amherst assesses ticks for their disease potential. Ticks are identified by species, life stage, whether the tick shows signs of feeding, and for the presence of the most common disease pathogens for that tick species. For deer ticks, these diseases are Lyme disease, anaplasmosis and babesiosis. Cost: $50 per tick. Additional tests are also available, and residents of some Massachusetts communities receive substantial discounts.

For more information on how to submit a tick for testing, and for answers to some frequently asked questions, go to www.tickreport.com. Clients can contact us with questions via email or "chat" by sending an email to support@TickReport.com, or clicking the chat icon in the lower right corner of our website. The Lab is on the first floor of Fernald Hall, 270 Stockbridge Rd., UMass Amherst.

While tick testing provides valuable information for patients and doctors, it is not a replacement for medical evaluation. The Massachusetts Dept. of Public Health recommends that you notify your doctor right away if you have been bitten by a tick and you suspect that it is a deer tick or you develop a rash, fever, headache, fatigue, or sore and aching muscles.

At-A-Glance Calendar of UMass Extension Events

See more info on Conferences & Workshops beginning on page 10 or go to www.umass.edu/agland

UMass Extension

2020

Jan 6-Feb 14	UMass Winter School for Turf Managers	Amherst
Jan 14	Greenhouse Production 2020 - Winter Education Program	Westford
Jan 30	Cranberry Management Update	Wareham
Jan-Nov	Pesticide Applicator License Exam Training	various
Feb TBA	Mass Aggie Seminars	various
Feb TBA	New England Vegetable & Berry Growers' Association Winter Meetings	TBA
Feb 12	TickTalk with TickReport! Webinar Series: Seasonal Variation in Activity & Abundance of Human-Biting Ticks	online
Feb 19	Invasive Plant Certification Program (Part 1)	Westford
Feb 26	Pollinators in Our Landscapes Conference	Milford
Mar TBA	Mass Aggie Seminars	various
Mar 10	41st Annual UMass Community Tree Conference	Amherst
Mar 11	TickTalk with TickReport! Webinar Series	online
March 18	Invasive Plant Certification Program (Part 2)	Westford
Mar 26	Spring Kickoff for Landscapers	Topsfield
Apr 1	Invasive Plant Certification Program (Part 3)	Westford
Apr TBA	Fruit Twilight Meeting	TBA
Apr TBA	Mass Aggie Seminars	various
Apr TBA	Snow Mold Research Field Days	TBA
Apr 8	TickTalk with TickReport! Webinar Series	online
Apr 15	Invasive Plant Certification Program (Part 4)	Westford

May 13	TickTalk with TickReport! Webinar	online
May 19	Weed Walkabout	Westborough
May TBA	Fruit Twilight Meeting	various
May TBA	Mass Aggie Seminars	various
Jun 4	Landscape Pests and Problems Walkabout - Diseases & Weeds	Acton
Jun 10	TickTalk with TickReport! Webinar	online
Jun 11	Ornamental Tree and Shrub ID and Insect Walk	Boylston
Jun 16	Plant Camp! Day 1: Pollinator Plants	Northampton
Jun TBA	Plant Camp! Day 2: Multi-Season Standouts	TBA
Jun 25	Landscape and Forest Tree and Shrub Insects Workshop	Amherst
Jun TBA	Fruit Twilight Meeting	various
July 8	TickTalk with TickReport! Webinar	online
July TBA	VegetableTwilight Meeting	TBA
Aug 12	TickTalk with TickReport! Webinar	online
Sept 9	TickTalk with TickReport! Webinar	online
Sept 9	Ornamental Tree and Shrub ID and Insect Walk	Stockbridge
Oct 14	TickTalk with TickReport! Webinar Series	online
Oct 26-Dec. 14	Green School	Milford
Nov 18	TickTalk with TickReport! Webinar	online
Nov 2020	Fall Wrap-Up for Landscapers, Grounds & Turf Managers	TBA
Dec 9	TickTalk with TickReport! Webinar	online

2021

July 17	UMass Turf Research Field Day	South Deerfield
2021 TBA	Invasive Insect Certification Program	TBA
2021 TBA	New England Vegetable & Fruit Conferene & Trade Show	TBA

Crop Insurance/Risk Management Education

This program (www.ag.umass.edu/risk-management) provides information on Federal Crop Insurance policies allowing farmers to understand how the available policies work. The program also provides general agricultural risk management education and information to all types of agricultural producers. The goal of the program is to increase producer awareness and understanding of Federal Crop Insurance and agricultural risk management principles and strategies.

Federal Crop Insurance is available on the following crops in Massachusetts:

Crop/Policy	Sales Closing Date	Counties Covered
Apples	November 20, 2020	All Counties except: Barnstable, Dukes, Nantucket & Suffolk
Corn (Silage & Grain)	March 15, 2020	All Counties
Cranberries	November 20, 2020	Barnstable, Bristol, Middlesex, Nantucket, Norfolk & Plymouth
Cultivated Clams	November 30, 2020	Barnstable, Bristol, Dukes, Nantucket & Plymouth
Dairy Revenue Protection	Variable	All Counties
Grapes	November 20, 2020	Bristol
Nursery	May 1, 2020	All Counties
Pasture, Rangeland & Forage	November 15, 2020	All Counties
Peaches	November 20, 2020	All counties except: Dukes, Natucket & Suffolk
Potatoes	March 15, 2020	Franklin & Hampshire
Sweet Corn	March 15, 2020	All Counties except: Dukes, Nantucket, & Suffolk
Tobacco	March 15, 2020	Franklin, Hampden, & Hampshire
Whole Farm Revenue Protection	March 15, 2020	All Counties

If you grow a crop not listed above or in a county not covered by an individual policy, you can obtain Federal Crop Insurance coverage under a Written Agreement which is handled by a licensed Federal Crop insurance Agent. Policies were written in Massachusetts for pears and soybeans under Written Agreements. You also can obtain coverage on non-insured crops through the USDA - Farm Service Agency (FSA) under their Noninsured Crop Disaster Assistance Program (NAP).

All Federal Crop Insurance is sold by licensed crop insurance agents. A list of available agents is available at: www.rma.usda.gov/tools/agent.html

For further information or to schedule a personal appointment, contact Paul Russell (pmrussell@umass.edu) or Tom Smiarowski (tsmiarowski@umass.edu).

Plant Problem Diagnostics

ag.umass.edu/diagnostics

The University of Massachusetts Amherst recognizes the importance of reliable and prompt diagnosis of plant problems for the turf, floriculture, fruit, 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.

To ensure that we continue to provide the most reliable service, all of our plant diagnostics expertise has been integrated into one location on the UMass Amherst campus. The members of the diagnostics team of the UMass Extension Plant Diagnostic Lab are able to call upon each other's expertise to make fast and accurate diagnoses. Each diagnosis includes a written report with pest management strategies that are research based, economically sound, and environmentally appropriate for the situation.

Notes for Diagnostic Sample Submission

- **A completed diagnostic sample submission form is required for each specimen** (or particular problem). Remember that accurate diagnosis requires **both** a representative sample and sufficient information about the cultural practices and environmental conditions associated with the problem. The information you record on the form can be more important to the diagnosis than the sample itself! Photos of the problem are also extremely helpful. *No sample will be diagnosed without a completed form.*
- **There is a fee per specimen** (or particular problem) payable to the University of Massachusetts, and the appropriate fee must accompany each sample or paid online in advance. The UMass Extension Plant Diagnostic Lab will call and/or send a written report when a conclusion has been reached on the diagnosis or identification. Detailed management recommendations are included with disease, insect, and weed diagnoses.
- **You may obtain copies of the forms on the following pages, by calling the lab at (413) 545-3208 or at ag.umass.edu/diagnostics.**

Diagnostic Fees

Floriculture/greenhouse crop disease analysis	$50
Floriculture/greenhouse crop disease analysis, pH and soluble salts test (please send approximately one cup of growing medium)	$60
Fruit diseases	$50
Landscape and turf insect ID	$50
Landscape and turf weed ID	$30
Nematode assay all other crops except turf	$50
Turf disease analysis	$75
Turfgrass ID	$30
Turf nematode assay	$75
Vegetable crop diseases	$50
Woody plant disease analysis	$50

Address packages to: **UMass Plant Diagnostic Lab**

French Hall, rm 3 - 230 Stockbridge Rd - Amherst, MA 01003
(413)545-3208 - fax (413)545-3075
Use exact address to ensure delivery.

There is a designated parking spot for the lab behind the building
ag.umass.edu/diagnostics

FLORICULTURE DIAGNOSTICS

Contact: **Dr. Angela Madeiras - Disease Diagnostics -** (413)545-3209, madeiras@umass.edu
Dr. Robert Wick - Nematology - (413)545-1045, rlwick@umass.edu

Contact Angela Madeiras (413)545-3209 or Geoffrey Njue (617) 243-1932 to determine if sending a specimen is necessary or to inform the lab that one is being sent. Microscopic and laboratory identification of fungi, bacteria, viruses, and nematodes are routinely carried out. Samples can be hand-delivered (if possible) or sent overnight mail, UPS, or Federal Express. Along with your sample, include a completed *Vegetable & Floriculture Diagnostic Form* (page 27 or go to ag.umass.edu/diagnostics). Be as complete as possible; accurate diagnosis depends on sufficient information about cultural practices and environmental conditions. Collect specimens that show a range of symptoms, avoiding rotted or decayed specimens. Please avoid Friday samples**;** Friday samples will not be examined until Monday, which can lead to deterioration of the sample. Upon reaching a conclusion, the lab will send or email a report on the diagnosis including complete management guidelines emphasizing cultural and biorational controls, as well as chemical control options if appropriate.

How to Send Floriculture Samples

Submit samples according to the following guidelines, based on the symptoms present, using the form on page 28:

NOTE: Never wrap leaves in wet paper towels or add water.

Leaf Spots and Blights. An entire plant is always the best specimen, allowing inspection of all plant parts. Leaf spots and blights of floriculture crops are often caused by fungi or bacteria. Certain pesticides or environmental or nutritional factors can also cause spotting. Select leaves which show a range of symptom development. Specimens that are dead or dry are of little diagnostic value.

Wrap leaves in newspaper or dry paper towels. Place the wrapped leaves in a plastic bag, and then into an envelope for mailing.

Stem Cankers. When a canker occurs on a large plant, cut a section of the stem with the symptoms, wrap in newspaper and place in a plastic bag for mailing. If the plants are small (1 foot or less), send the whole plant. Shake the soil from the roots, wrap in newspaper and put into a plastic bag for mailing.

Wilt, Crown Rot or Root Rot. If the plants are 1 foot or less, include the entire plant. Dig the plant including a good handful of the root system. Leave the soil on the roots. Place the root/soil ball into a plastic bag and tie off at the crown to prevent soil from spilling out. Wrap the entire plant in newspaper and put into a plastic bag for mailing.

Scorch, Defoliation or Poor Growth. If the plants are 1 foot or less, include the entire plant. Dig the plant, including a good handful of the root system. Leave the soil on the roots. Place the root/soil ball into a plastic bag and tie off at the crown to prevent soil from spilling out. Wrap in newspaper and put into a plastic bag for mailing. If the plants are large, send a portion of the plant that includes the infected tissue. For wilt diseases, we must have lower stem tissue and roots.

*UMass Plant Diagnostic Lab: VEGETABLE and FLORICULTURE FORM**

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in landscapes, turf, nurseries, greenhouses, farms, and the urban forest.

UMass Plant Diagnostic Lab –Lab 3, French Hall, 230 Stockbridge Road – Amherst, MA 01003-9316
Telephone: (413) 545-3208 Fax: (413) 545-3075 ag.umass.edu/diagnostics

UMass Extension

Send specimen to above address. Please include check payable to *University of Massachusetts.*

⇒USE THIS FORM FOR: ❒ Disease, Nematode, or Water Analysis ($50) ❒ Disease Analysis + pH and Soluble Salts Test ($60)

Host Plant Cultivar Date Collected

Approximate Age / Planting Date

When Did Symptoms Occur? % of Crop Affected Size of Planting

Briefly Describe the Problem

Products Applied, Rates, and Dates of Application

Describe Site Conditions and Relevant Cultural Practices

Circle all that apply:

Location	Part(s) Affected	Symptoms	Symptom Distribution	Soil Type	Soil Moisture	Irrigation
Container	Roots	Wilted	Scattered	Soilless	Wet	Overhead
Field	Crown	Yellowed	Localized	Soilless/Soil	Moderate	Drip
Greenhouse	Stem	Stunted	Borders	Soil Only	Dry	Flood
Nursery	Leaves	Leaf Spot/Blight	Edges	Sandy	Very Dry	None
Hydroponic	Flower	Fruit Blight	All or Nearly All	Clay		Other
Other	Fruit	Other		Loam		

Contact Firm Address

Town State Zip Phone

E-mail

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

Lab Number	Date Received	Date Answered	Payment

Ver. 2015 GD

* NOTE – Fruit, turf, and tree/shrub samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

FRUIT & VEGETABLE DIAGNOSTICS

Contact: **Dr. Angela Madeiras - Disease Diagnostics -** (413)545-3209, madeiras@umass.edu
Dr. Robert Wick - Nematology - (413)545-1045, rlwick@umass.edu

Contact Angela Madeiras (vegetable) (413)545-3209 or Sonia Schloemann (fruit) (413)545-4347 to determine if sending a specimen is necessary or to inform the lab that one is being sent.

Microscopic and laboratory identification of fungi, bacteria, viruses, and nematodes are routinely carried out. Samples can be hand-delivered (if possible) or sent overnight mail, UPS, or Federal Express. For vegetables, along with your sample, please include a completed *Vegetable & Floriculture Diagnostic Form* (page 27); for fruit, include the completed *Fruit Diagnostic Form* (page 29). Forms are also available online at ag.umass.edu/diagnostics .

A completed form must accompany your sample(s). Be as complete as possible; accurate diagnosis depends on sufficient information about cultural practices and environmental conditions. Collect specimens that show a range of symptoms, avoiding rotted or decayed specimens. **Please avoid Friday samples;** Friday samples will not be examined until Monday which can lead to deterioration of the sample. Upon reaching a conclusion, the lab will send or email a report on the diagnosis including complete management guidelines emphasizing cultural and biorational controls, as well as chemical control options.

How to Send Fruit & Vegetable Samples

Please submit samples according to the following guidelines, based on the symptoms present, using the form on page 27 (vegetables) or 29 (fruit):

Leaf Spots and Blights. Leaf spots and blights of fruit and vegetable crops are often caused by fungi or bacteria. Certain pesticides, or environmental or nutritional factors can also cause spotting. Select leaves which show a range of symptom development. Specimens that are dead or dry are of little diagnostic value. Wrap the leaves in newspaper or dry paper towels. Place the leaves in a plastic bag, then into an envelope for mailing. **Never wrap leaves in wet paper towels or add water.**

Fruit Rots. Select early stages of disease rather than badly rotted tissue. With large fruit such as a pumpkin, cut the affected area out with a knife and submit. Wrap fruit or fruit sections in newspaper, and put into a plastic bag for mailing. **Never add water or wet paper towels.**

Stem Cankers. When a canker occurs on a large plant, cut a section of the stem with the symptoms, wrap in newspaper and place in a plastic bag for mailing. If the plants are small (1' or less), shake the soil from the roots, wrap in newspaper and put into a plastic bag for mailing. **Never add water or wet paper towels.**

Wilt, Crown Rot or Root Rot. If the plants are 1 foot or less, include the entire plant. Dig the plant, including a good handful of the root system. Leave the soil on the roots. Place the root/soil ball into a plastic bag and tie off at the crown to prevent soil from spilling out. Wrap in newspaper and put into a plastic bag for mailing. If the plants are large, send a portion of the plant that includes the infected tissue. For wilt diseases, we must have lower stem tissue and roots**.**

UMass Plant Diagnostic Lab: FRUIT FORM*

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in landscapes, turf, nurseries, greenhouses, farms, orchards, and the urban forest.

UMass Plant Diagnostic Lab –#3 French Hall, 230 Stockbridge Road, Amherst, MA 01003
Telephone: (413) 545-3208 - Fax: (413) 545-3075 ag.umass.edu/diagnostics

Send specimen to above address. Please include payment payable to *University of Massachusetts.*

⇒ USE THIS FORM FOR: ❒ Fruit Disease Analysis ($50) ❒ Fruit Nematode Analysis ($50) ❒ Fruit Insect ID ($50)

Host Plant _____ Cultivar _____ Date Collected _____

Approximate Age _____ Length of Time in Present Location _____

When Did Symptoms Occur? _____ Were Symptoms Apparent in Previous Years? _____

Briefly Describe the Problem _____

Products Applied, Rates, and Dates of Application: _____

Describe Site Conditions and Relevant Cultural Practices _____

Circle all that apply:

Location	Irrigation	Site Condition	Soil	Drainage	Symptoms	Part Affected
Landscape	Lawn	Shade	Sandy	Good	Yellowed/Browning	Roots
Greenhouse	Overhead	Full Sun	Clay	Moderate	Stunted	Crown
Nursery	Drip	Wet	Loam	Poor	Shoot Blight	Branch/Stem
Forest	None	Droughty	Soil Mix		Canker	Leaves/Needles
Other _____		Compacted	pH _____		Stippling/Spots	Fruit

Contact _____ Firm _____ Address _____

Town _____ State _____ Zip _____ Phone _____

E-mail Address _____

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

Lab Number	Date Received	Date Answered	Payment

* NOTE – Turf, vegetable, and tree/shrub samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

TREE & SHRUB DISEASE & INSECT DIAGNOSTICS

Contact: **Dr. Nick Brazee - Tree & Shrub Disease Diagnostics -** (413)545-2826, nbrazee@umass.edu
Tawny Simisky - Tree & Shrub Insect Diagnostics - (413) 545-1053, tsimisky@umass.edu

How to Send Samples of Tree & Shrub Material & Insects

Please submit samples based on the following guidelines for tree and shrub diseases and insect identification, using the form on page 31. Forms are also at: ag.umass.edu/diagnostics

For proper diagnosis, specimens must be received in good condition. It may be helpful to call the lab first at (413)545-3208 to see if sending a sample is necessary. Hand-deliver samples if possible, or send them by the fastest means available. Include accompanying information (such as photos, etc.) regarding the symptoms that are of particular concern to you.

When Sending Samples:

1. Ship samples so that they will be delivered in 48 hours or less. Federal Express, UPS, and Two-day Priority Mail through the U.S. Postal Service deliver directly to the building. Be sure to pack the specimen in a sturdy envelope or box.
2. Fill out the *Tree and Shrub Diagnostic Form* as completely as possible. This form must accompany each specimen sent to the lab. The information supplied will allow a more thorough and accurate diagnosis. Include your phone number, email, and a fax number, if available, so we may contact you for further information or inform you of the diagnosis.
3. **Disease Samples:** Send several plants/leaves/branches etc. showing a range of symptoms that are representative of the problem. Select samples from the area at the margin between the diseased portion of the plant and the healthy tissue. Dead plant material usually is of little value because it often contains secondary organisms that may make detection of the primary pathogen difficult.

   Place leaves, branches, and other plant parts in a plastic bag and seal it. **Do not add moist towels or moisten the sample before sealing it.**

   •When sending entire plants, dig, rather than pull, roots from the soil. Wrap roots and attached soil in a plastic bag and secure to the trunk with a twist tie. Place a second bag over the foliage and punch a few holes through this bag for ventilation. Do not add additional water or moist towels.

   •*Vascular wilt specimens:* Plants or plant parts that suddenly wilt may be infected with a vascular disease. Branch or stem sections 1/4" to 1" in diameter and 4" to 6" long should be taken from the wilting plant or recently wilted plant part. Avoid sending plant material that has been dead for any length of time.
4. **Insect Samples:** Immature and soft-bodied insects should be placed in 70% ethyl alcohol (rubbing alcohol is not ideal, but may work). Other insects must be carefully packaged. Do not place loose insects into envelopes for mailing, as the automation process for handling mail will most likely destroy the specimens.
5. **Weed or Turfgrass ID Samples:** Collect whole plant, including the roots, if possible. Wrap roots in a moist paper towel. Place plant in a ziplock or freezer bag and seal with some air in the bag in order to prevent crushing. Place bag in a sturdy box or envelope for mailing.

UMass Plant Diagnostic Lab: TREE & SHRUB FORM*

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in landscapes, turf, nurseries, greenhouses, farms, orchards, and the urban forest.

UMass Plant Diagnostic Lab –Lab 3, French Hall, 230 Stockbridge Road – Amherst, MA 01003-9316
Telephone: (413) 545-3208 - Fax: (413) 545-3075 - ag.umass.edu/diagnostics

Send specimen to above address. Please include check payable to *University of Massachusetts.*

⇒USE THIS FORM FOR:	❒	Diseased Tree/Shrub Analysis ($50)	❒	Tree/Shrub Insect ID ($50)	❒	Pinewood Nematode ($50)

Host Plant | Cultivar | Date Collected

Approximate Age | Length of Time in Present Location

When Did Symptoms Occur? | Were Symptoms Apparent in Previous Years?

Briefly Describe the Problem

Products Applied, Rates, and Dates of Application

Describe Site Conditions and Relevant Cultural Practices

Circle all that apply:

Location	Irrigation	Site Condition	Soil	Drainage	Symptoms	Part Affected
Landscape	Lawn	Shade	Sandy	Good	Yellowed/Browning	Roots
Greenhouse	Overhead	Full Sun	Clay	Moderate	Stunted	Crown
Nursery	Drip	Wet	Loam	Poor	Shoot Blight	Branch/Stem
Forest	None	Droughty	Soil Mix		Canker	Leaves/Needles
Other _____		Compacted	pH _____		Stippling/Spots	Fruit

Contact | Firm | Address

Town | State | Zip | Phone

Client Code (if any) | E-mail

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

Lab Number	Date Received	Date Answered	Payment

Ver. 2018

* NOTE – Fruit, vegetable, and turf samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

TURF DISEASE DIAGNOSTICS & NEMATODE ASSAYS

Contact: **Dr. Angela Madeiras - Disease Diagnostics -** (413)545-3209, madeiras@umass.edu
Dr. Robert Wick - Nematode Assays - (413)545-1045, rlwick@umass.edu

If you plan to deliver a sample in person, please contact Dr. Angela Madeiras to ensure that someone will be available in the laboratory. If you mail the sample, use an express delivery service such as UPS, Federal Express, or next day mail. **Please avoid Friday samples;** Friday samples will not be examined until Monday which can lead to deterioration of the sample. Please include a completed *Turf Diagnostic Form* (page 35 or go to ag.umass.edu/diagnostics). The information you record on the form may be more important to the diagnosis than the sample itself, so please be comprehensive. Upon reaching a conclusion, the lab will call you and send, fax, or email a detailed report including cultural and chemical management measures.

How to Send a Turf Sample

Please submit samples based on the following guidelines for turf diseases and turfgrass identification, using the form on pg. 35.

1. **Collecting a sample for turf disease diagnosis:** A 4" to 6" diameter sample from the "leading edge" of a problem is most useful. Include roots and soil to a depth of at least 2" and foliage showing a range of symptoms. Do not send smaller samples or samples collected with a soil probe. Sample from areas where the problem is active or increasing. The pathogen is most likely to be found at the leading edge of a patch area. Samples should include both healthy and affected grass. Try to choose an area that is typical of the problem.
2. **Packaging the sample*:** Keep the sample moist and cool, **but do not add water or wet paper towels,** or seal tightly in plastic. Avoid soil and moisture on the grass. Wet or soiled grass will deteriorate and make diagnosis impossible. Wrap the sample in several layers of newspaper and pack it snugly in a sturdy box. This keeps the soil from getting on top of the plants and obscuring the disease symptoms. If you suspect an unusual problem, take a sample *before* spraying any fungicides. It is often difficult to make an accurate diagnosis after a fungicide has been applied. ***Turf insect samples:** grubs and other soft-bodied insects should be placed in 70% ethyl alcohol (rubbing alcohol is not ideal, but may work). Other insects must be carefully packaged. Do not place loose insects into envelopes for mailing, as the automatic process for handling mail will most likely destroy the specimens.
3. **Fill out the Turf Diagnostic Form:** Be as *complete* as possible. Include complete name and mailing address. Remember that accurate diagnosis requires **both** a representative sample and sufficient information about the cultural practices and environmental conditions associated with the disease problem. Photos of the problem are extremely helpful. Please include photos with your submission form or email them to Dr. Angela Madeiras.

Instructions for Submitting a Turf Sample for Nematode Assay

1. **Collection of soil samples.** Nematode populations are estimated most accurately with a composite sample. Use a 3/4" to 1" diameter soil probe, or something similar, and sample to a depth of four inches throughout the site. This depth is a compromise but represents the population distribution of different species fairly well.

   •*When damage is evident:* If a portion of the green appears unhealthy, collect 15 to 20 subsamples from throughout the affected area and bulk them. **For comparison, a similar composite sample should also be taken from an adjacent, healthy appearing area.**

•*When no damage is evident:* The entire green can be sampled by collecting 30 or 40 samples and combining them as one. However, if portions of the green have had a prior history of being weak, sample throughout the area collecting about 20 samples. Keep notes about where you sampled so you can return at a later date and sample the same general area.

2. **Packaging the sample.** The soil (at least 1/2 pint) should be placed in a container, such as a plastic bag, to prevent desiccation. Do not add water to the sample. Clearly identify the sample number on the outside of the container. **Paper tags placed in contact with the soil deteriorate quickly. Do not subject the soil to high temperatures.** After collection, refrigerate or deliver as soon as possible.
3. **Sending the sample.** If possible, hand carry the sample to the diagnostic lab. If you mail the sample, use an express delivery service that will deliver directly to the Diagnostic Lab rather than the University Mail Room. U.S. Postal Service Priority Mail and next day delivery packages go to the University distribution system and are **delayed by a day or more. UPS and Federal Express Delivery are best**. Please **DO NOT use Federal Express "First Delivery"** because they arrive before our offices open (before 8:00 a.m.). The "before noon" deliveries seem to work very well. Mark the box, *"Plant Material — Perishable. Refrigerate on Delivery."* Include a completed *Turf Diagnostic Form.*

TURFGRASS IDENTIFICATION

Contact: **Randy Prostak - Weed & Grass Identification -** (413) 577-1738, rprostak@umass.edu

Fill out the *Weed / Turf ID Form* (page 34) as completely as is feasible, following the guidelines on page 30. When choosing a specimen, select the healthiest and most mature plant(s) available. Collect the whole plant, including the roots, if possible. Wrap roots in a wet paper towel. Place plant in a ziplock or freezer bag and seal with some air in the bag in order to prevent crushing. Place bag in a sturdy box or envelope for mailing.

WEED AND INVASIVE PLANT IDENTIFICATION

Contact: **Randy Prostak - Weed & Grass Identification -** (413) 577-1738, rprostak@umass.edu

Depending on the site, fill out the *Weed / Turf ID Form* (page 34) or the *Turf Diagnostic Form* (page 35) as completely as possible. Collect the whole plant, including the roots if possible, and select the healthiest plants available. Wrap roots in a wet paper towel. Place plant in a zip-lock or freezer bag and seal with some air in the bag in order to prevent crushing. Place bag in a sturdy box or envelope for mailing. Forms are also available online at ag.umass.edu/diagnostics.

WATER TESTING FOR PLANT PATHOGENS

Contact: **Angela Madeiras - Disease Diagnostics -** (413) 545-3209, madeiras@umass.edu

Irrigation water may be tested for the presence of the water-borne pathogens Pythium, Phytophthora, and Rhizoctonia. Collect 300-500 ml of water source in a clean water or soda bottle. Cap tightly and refrigerate if not shipping immediately. **Use next day delivery**. Please do not mail samples on Thursday or Friday. Fill out the Water Testing From (page 36) as completely as possible. Forms are also available online at ag.umass.edu/diagnostics.

UMass Extension Plant Diagnostic Lab: WEED/ TURF ID FORM*

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in landscapes, turf, nurseries, greenhouses, farms, and the urban forest.

UMass Plant Diagnostic Lab – French Hall, Room 3 – 230 Stockbridge Rd. - Amherst, MA 01003
Telephone: (413) 545-3208 - Fax: (413) 545-3075 - ag.umass.edu/diagnostics

Send specimen to above address. Please include payment payable to *University of Massachusetts*

⇒ USE THIS FORM FOR: ❒ Weed, Turf, or Invasive Plant ID ($25)

Turfgrass species: Origin: ❒ Sodded ❒ Seeded Date Sample Collected: _____

Cultivar:

Year Established: ❒ Unknown - Name of Seed Mix - List cultivars comprising seed mix, if known _____ _____

Describe Growth Habit: ❒ Single Plant ❒ Small Group ❒ Large Patch ❒ Other: _____

Was Plant Apparent in Previous Years? _____

List Herbicide Used, Rates, and Dates of Application: _____

List Fertilizers Used, Rates, and Dates of Application: _____

List Liming Materials Used, Rates, and Dates of Application: _____

Relevant Cultural Practices and Additional Info
(mowing height, aeration, irrigation, etc.): _____

Location Where Specimen Was Collected: _____
(street, closest intersection if known) Town State Zip

Circle all that apply:

Location	Site Condition	Soil	Drainage	Distribution
Landscape	Shade	Sandy	Excellent	Patches
Lawn	Part Shade	Clay	Good	Random spots
Meadow	Full Sun	Loam	Moderate	Occasional
Side of the Road	Wet	pH _____	Poor	
Other _____	Droughty			

Contact _____ Company _____ Address _____

Town _____ State _____ Zip Code _____ Phone _____

E-mail _____

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

WEED:

MANAGEMENT STRATEGIES/OPTIONS:

Lab Number	Date Received	Date Answered	Payment

* NOTE – tree, shrub, turf, fruit, vegetable and floriculture samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

UMass Extension Plant Diagnostic Lab: TURF FORM*

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in turf

UMass Plant Diagnostic Lab –Lab 3, French Hall, 230 Stockbridge Road – Amherst, MA 01003-9316
Telephone: (413) 545-3208 - Fax: (413) 545-3075 - **ag.umass.edu/diagnostics**

Send specimen to above address. Please include check payable to *University of Massachusetts*

⇒**THIS FORM IS FOR:** ❒ Turf Disease (**$75**) ❒ Nematodes (**$75**) ❒ Grass/Weed ID **($25)** ❒ Insect ID **($50)**

Grass species: Cultivar: Date Collected:

Year Established: Origin: ❒ Seeded ❒ Sodded ❒ Plugged ❒ Unknown

Describe Symptoms:

When Did Symptoms Occur? Symptoms Apparent in Previous Years?

Products Applied, Rates, and Dates of Application:

Relevant Cultural Practices, Site Conditions, Additional Info:

Circle all that apply:

Location	**Site Condition**	**Soil**	**Drainage**	**Irrigation**	**Symptoms**
Golf Green/Tee/Collar/Fairway/Rough)	Shade	Sandy	Excellent	None	Patches
Lawn	Part Shade	Clay	Good	Sprinklers	Rings, Arcs
Athletic Field	Full Sun	Loam	Moderate	Rate_____	Leaf Spot/Blight
Utility/Industrial	Wet	Sand Green	Poor	Frequency_____	Yellowing
Sample ID _____	Droughty	pH _____			Wilt

Contact Firm Address

Town State Zip Phone

E-mail

Nematodes per 100 cc:			
Criconemoides (ring)		*Meloidogyne* (root-knot)	♂: j2:
Heterodera (cyst)	♀: j2:	*Pratylenchus* (lesion)	
Helicotylenchus (spiral)		*Tylenchorhynchus* (stunt)	
Hoplolaimus (lance)			
Longidorus (needle)			
☐ specimen insufficient for diagnosis		☐ no nematode problem detected	

Lab Number Date Received Date Answered Payment

* NOTE – Fruit, vegetable, and tree/shrub samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

*UMass Plant Diagnostic Lab: WATER TESTING FORM**

Providing analysis, identification, and ecologically sound management strategies for diseases, insects, weeds, and nematodes found in landscapes, turf, nurseries, greenhouses, farms, and the urban forest.

UMass Plant Diagnostic Lab –Lab 3, French Hall, 230 Stockbridge Road – Amherst, MA 01003-9316
Telephone: (413) 545-3208 - Fax: (413) 545-3075 - ag.umass.edu/diagnostics

UMass Extension

Send specimen to above address. Please include check payable to *University of Massachusetts.*

⇒USE THIS FORM FOR: Testing water samples for *Pythium, Phytophthora*, and *Rhizoctonia* ($50 per sample)

Water Source Date Collected

Are plants showing symptoms of disease? If yes, when did symptoms occur?

% of crop affected Crop(s) affected

Briefly describe the problem

Products applied, rates, and dates of application

Describe site conditions and relevant cultural practices

Circle all that apply:

Location	Part(s) Affected	Symptoms	Symptom Distribution	Irrigation System Type	Water Source
Container	Roots	Wilted	Scattered	Overhead	Stock tank
Field	Crown	Yellowed	Localized	Drip	Well
Greenhouse	Stem	Stunted	Borders	Flood	Pond
Nursery	Leaves	Leaf Spot/Blight	Edges	Other	River/stream
Hydroponic	Flower	Fruit Blight	All or Nearly All		Municipal
Other	Fruit	Other			Other

Contact Firm Address

Town State Zip Phone

E-mail

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

Lab Number	Date Received	Date Answered	Payment

Ver. 2015 GD

* NOTE – Fruit, vegetables turf, and tree/shrub samples require alternate submission forms. Visit ag.umass.edu/diagnostics for copies.

How to Get a Massachusetts Pesticide License

www.umass.edu/pested

The Massachusetts Department of Agricultural Resources (MDAR) is the state agency that enforces the pesticide laws, administers the pesticide exams and issues pesticide licenses/certification. Comprehensive information for pesticide licensing is available at the MDAR website www.mass.gov/pesticide-examination-and-licensing. You can also contact the UMass Extension Pesticide Education program at 413-545-1044 or email nclifton@umass.edu.

Follow these five steps for obtaining a Mass. pesticide applicator license/certification:
A. Determine what type of license or certification you need.
B. Purchase pesticide exam study manuals.
C. Sign up for an optional pesticide exam preparatory workshop.
D. Register and take pesticide exam.
E. Apply for your pesticide license/certification.

A. Description of Licenses/Certifications

1. Applicator's License is for applying general-use (over-the-counter) pesticides on the property of another for hire. This license is for individuals working in an extermination, lawn care, landscape, or tree business. This license is also for individuals who work "not for hire" as office building grounds keepers, apartment building landlords, custodians, condominium maintenance personnel, golf course superintendents and staff. This license is also for invasive plant managers, maintenance and groundskeepers at schools and universities, state and municipal employees, volunteers and other individuals who apply pesticides to public lands.

2 Private Certification is for applying restricted-use pesticides on property owned or rented by you or your employer in order to raise agricultural commodities. This certification is for owners and employees who work on farms, nurseries, and/or greenhouses. As a reminder, all agricultural operations must comply with the federal EPA Worker Protection Standard that protects farm employers and employees from pesticide exposure.

3. Commercial Certification is for applying restricted-use pesticides on someone else's property (For Hire or Not for Hire). You must have held an Applicator's License or Certification in Massachusetts for two (2) or more years during the past five (5) years to be eligible to take the commercial certification exams. Select from one of eighteen commercial certification categories.

4. Dealer's License is for individuals who intend to sell restricted-use pesticides in Massachusetts or to Massachusetts pesticide applicators.

B. Purchase pesticide exam study manuals from the UMass Extension Bookstore. Purchase manuals online with a credit card or by mail with a check and completed order form. Orders are shipped within a minimum of five business days (via UPS Ground) or maximum 10 business days (via US Postal service media rate). Give yourself at least two weeks to read the study manuals. Information for ordering the pesticide exam study manuals is at www.umass.edu/pested. Select "Examination Study Manuals" in the left column.

C. Register for an optional two-day exam preparatory workshop offered by UMass Extension designed to help individuals prepare for the applicator's license exam. The workshop can also help with reviewing the general pesticide information content for the private and commercial category exams. Participants who attend our workshop have a higher passing rate than those who do not attend our workshop. See next page for the schedule of these workshops.

Pesticide Applicator License Exam Training

www.umass.edu/pested

Workshops are from 8:45 a.m. to 4:30 p.m. each day. Preregistration is required, as space is limited. Workshops held in Milford, East Wareham, and West Springfield. Select workshop dates that are at least a week before your exam date. For more information contact Natalia Clifton at 413-545-1044, nclifton@umass.edu or go to www.umass.edu/pested and select "Training Workshops to Prepare for the Exams" in the left column. Dates and locations for **2020** are:

DOUBLETREE BY HILTON - 11 Beaver St, Milford, MA

January 30 & 31, 2020
February 6 & 7, 2020
February 26 & 27, 2020
March 12 & 13, 2020
March 26 & 27, 2020
April 9 & 10, 2020
April 15 & 16, 2020
April 23 & 24, 2020
April 30 & May 1, 2020
May 11 & 12, 2020
June 17 & 18, 2020
July 15 & 16, 2020
August 12 & 13, 2020
September 2 & 3, 2020
September 21 & 22, 2020
October 28 & 29, 2020
November 18 & 19, 2020

MDAR OFFICE - 64 Century Way, W. Springfield, MA
February 20 & 21, 2020
March 10 & 11, 2020
April 7 & 8, 2020

UMASS CRANBERRY STATION - East Wareham, MA
February 13 & 14, 2020

D. Register for the pesticide exam using the Commonwealth's new online ePLACE licensing system. Select "MDAR" (Massachusetts Department of Agricultural Resources) because three state agencies use this system. You will have to first set up your "account" and then register for your exam. You will receive an email confirmation of your exam registration. Exam locations are in Randolph, Springfield and Bourne, MA. Instructions for using this new system are on the MA Dept. of Agricultural Resources website at www.mass.gov/pesticide-exmination-and-licensingh. During the busy months (February-April), exams are held on a weekly basis.

E. Apply for your pesticide license. You will receive your exam results via email. There will be instructions to use your online account to apply for your license/certification. If you are obtaining an applicator's license or a commercial certification, you will have to upload your proof of insurance or equivalent. You can then print your new pesticide license/certification.

UMass Extension Pesticide Recertification Workshops

The UMass Extension Pesticide Education program conducts recertification training workshops throughout the state in February and March. Topics include: Update of Massachusetts Pesticide Laws & Regulations, Pesticide Respirator Fit Testing, Personal Protection Equipment, and Pesticide Impacts on the Environment and Wildlife. For a schedule of these workshops, go to www.umass.edu/pested.

EPA Worker Protection Standard (EPA WPS)

Farmers who employ workers on their agricultural operations must comply with EPA WPS. These regulations require the protection and education of farm employees in order to redue and mitiage the impacts of pesticide exposure on the farms, nurseries and/or greenhouses. Many organic farmers must comply with EPA WPS because EPA-registered pesticides are used on their agricultural establishments. The UMass Extension Pesticide Education Program will conduct a number of train-the-trainer workshops throughout the state in 2020. For more information on the requirements of EPA WPS or a schedule of these workshops, please refer to www.umass.edu/pested or contact Natalia Clifton at 413.545.1044 or nclifton@umass.edu

PUBLICATIONS Available from UMass Extension

Visit **UMassextensionbookstore.com** to purchase the following publications online.

Specific URL's for free publications are given below.

Questions? Call (413)545-5227 or email books@umext.umass.edu

Floriculture, Fruit and Vegetables

Cranberry Chart Book: Management Guide for Massachusetts — Free Online

ag.umass.edu/cranberry/publications-resources/cranberry-chart-book

Provides integrated crop and pest management information for commercial cranberry growers. This guide is updated annually by specialists at the UMass Cranberry Station and includes information on current pesticide recommendations, resistance management, and integrating cultural strategies for pest management.

New England Greenhouse Floriculture Guide: A Management Guide for Insects, Diseases, Weeds and Growth Regulators — Price: $40.00

A comprehensive guide for commercial production of greenhouse ornamentals with information on current pest management and growth regulators including integrated pest management and biological control information for greenhouse crops. The guide is also designed to provide commercial growers with technical information on pest management (weeds, diseases and insects) and growth regulators. This publication is rewritten every two years by Extension faculty and staff from the New England State University Extension Systems of Massachusetts, Maine, New Hampshire, Vermont, Connecticut, and Rhode Island and reflects the current collective knowledge for greenhouse crops for this region. Published by New England Floriculture, Inc., sponsor of the Northeast Greenhouse Conference (200+ pages). Visit https://www.negreenhouse.org/ for information.

On-line Photo Library - — Free Online

www.negreenhouseupdate.info

An on-line photo library that supplements the New England Greenhouse Floriculture Guide. Photos of greenhouse pests, nutritional disorders, cultural problems, weeds and biological control agents are online as a tool to assist growers with plant diagnostics in greenhouses. New photos continue to be added.

New England Small Fruit Management Guide — Price: $16.00

The *New England Small Fruit Pest Management Guide* is a comprehensive resource that covers insect, disease, weed and vertebrate management for strawberries, blueberries, brambles, currants/gooseberries and grapes. This guide is intended for commercial farmers to provide information on pest management practices for these berry crops in New England. Both chemical and non-chemical pest control measures are included. Whenever possible, the use of integrated pest management (IPM) practices is encouraged. Organic and biointensive methods are also discussed. This is an important reference resource for berry and grape growers around New England. Revised every 2 years. .

New England Tree Fruit Management Guide — Free Online

The *New England Tree Fruit Management Guide* is a comprehensive online publication that covers insect, disease, weed and vertebrate and horticultural management of apples, pears, peaches, plums, apricots, and chrries. The Guide is intended for commercial growers to provide information on pest and cultural management practices for these crops in New England. Both chemical and non-chmeical pest control measures are included. Whenever possible, the use of Integrated Pest Management (IPM) practices is encouraged. Organic and biointensive methods are also discussed. This is an important reference resource for tree fruit growers around New England. Revised continously online at http://netreefruit.org.

New England Vegetable Management Guide **Price: $25.00**

Northeast Pest Identification Guide **Price: $15.00**

Purchased Together: Price: $35.00

The *New England Vegetable Management Guide* is comprehensive guide for commercial vegetable growers with information on current production and pest management techniques. This manual is a collaborative effort of members of the Extension Vegetable Programs of the Universities of Maine, New Hampshire, Vermont, Rhode Island, Connecticut, and Massachusetts. We invite readers to make use of the extensive sections on soil fertility and nutrients, soil management, cover crops, weed, insect and disease management, IPM, organic production, biorational pesticides, irrigation, and greenhouse vegetable bedding plant production. In the crop-by-crop sections you will find recommended cultural practices, varieties, fertilization, and information on management of weeds, insects and diseases for each crop, including labeled pesticides. Each crop has a chart showing how to read and use soil test results for that crop. The *Northeast Pest Identification Guide* is a companion publication that provides color photographs of the weeds, insects, diseases and nonpathogenic disorders that are mentioned in this guide. We hope that growers will use these two publications together for identification and management of pests.

Nutrient Management Guide for New England Vegetable Prodution **Free Online**

umass.edu/vegetable (under 'Publications')

From the UMass Extension Vegetable IPM Lab. The first part of this manual discusses the basics, including the physical, chemical and biological properties of soil. These are quite interdependent. Each of these aspects affects the other two. Developing a healthy soil requires attention to all three. The second part of this book is about management practices to achieve healthy soils. It also contains information about various sources of nutrients and soil amendments and how the management of these resources is necessary for optimum vegetable crop production. '

Pruning Fruit Trees In the Home Orchard **Price: $10.00**

Thirty-seven photos and illustrations enhance the detailed text covering apple, pear, peach, plum and cherry trees.

Using IPM in the Field: Sweet Corn Insect Management Field Scouting Guide **Free Online**

From the UMass Extension Vegetable IPM Lab. Consumers demand high quality, worm-free corn throughout the season. An Integrated Pest Management (IPM) approach helps growers achieve high quality corn while protecting natural resources and reducing costs. Using IPM effectively in sweet corn combines several methods to monitor pests, decide when insecticides are needed, and encourage biological control where possible. This guide is designed as a tool to take to the field to help growers use IPM successfully. It shows step-by-step how to identify and monitor key pests, how to scout, what to look for, and what thresholds to use for insecticide applications. Color photos help you know exactly what to look for and what to do. A companion guide, the *Sweet Corn Insect Management Recordkeeping Book*, provides a place to write down what you find and keep your scouting records in one compact location. Available online at the UMass Vegetable Program website, ag.umass.edu/vegetable under 'Publications.'

Using IPM in the Field: Diseases of Cucurbit Crops: Scouting and Management Guide **Free Online**

umass.edu/vegetable (under 'Publications')

From the UMass Extension Vegetable IPM Lab. Cucurbit diseases are increasingly serious, complicated, and hard to manage. This farmer-friendly guide provided quick and easy instructions and plenty of color photographs for recognizing and managing common diseases and disorders of cucurbits. Includes information on implementing cultural controls, scouting, deciding when and what to spray, managing fungicide resistance, and ways to implement the latest control methods.

Massachusetts IPM Guidelines: Crop Specific Definitions **Price: $6.00**

Best management practices for apples, cole crops, cranberry, field and greenhouse tomato, highbush blueberry, peppers, poinsettia, potato, pumpkin and winter squash, raspberry, strawberry, sweet corn, and wine grapes.

Landscapes

Pest Identification Guide of Insects, Diseases and Weeds of Woody Ornamentals — Price: $35.00

Accurate identification of your pest problem is the first and most important step to successful management! This photo guide has over 100 pages of clear color photographs for the most frequently encountered weed, insect, disease and nonpathogenic disorders of ornamental trees and shrubs in the Northeast.

Professional Management Guide for Diseases of Trees and Shrubs — Free Online

ag.umass.edu/landscape/publications-resources/diseaseguide

Most of the disease pathogens known to be pests of woody ornamentals in the Northeast region are covered in this guide. Included is host plant information, along with appropriate fungicides, bactericides, biological control materials, and also cultural management information where applicable.

UMass Garden Calendar — Price: $14.00

Looking for a way to thank your clients or a new product for your retail establishment? The UMass Garden Calendar offers helpful guidelines, daily tips, and an inspiring garden image each month! Each month features:

- An inspiring garden image.
- Daily gardening tips for Northeast growing conditions.
- Daily sunrise and sunset times.
- Phases of the moon.
- Plenty of room for notes and low gloss paper for easy writing.

Bulk pricing is available on orders of 10 copies or more to the same address.
Place orders at umassgardencalendar.org, where you can also see images from this year's calendar and find online and mail ordering options, as well as the chart for bulk discounts.

UMass Garden Calendar Photo Contest: The deadline for submitting pictures is April 1 of the preceding year. Submission details at ag.umass.edu/landscape/publications-resources/garden-calendar/garden-calendar-photo-contest

Turf

Best Management Practices for Lawn & Landscape Turf — Free Online

ag.umass.edu/turf (click on 'Publications & Resources, then 'Best Management Practices)

UMass Extension's comprehensive manual of Best Management Practices (BMPs) for lawn and landscape turf. The guide is a detailed collection of economically feasible methods that conserve water and other natural resources, protect environmental quality and contribute to sustainability. The BMPs detailed in this document are agronomically sound, environmentally sensible strategies and techniques designed with the following objectives: to protect the environment, to use resources in the most efficient manner possible, to protect human health, to enhance the positive benefits of turf in varied landscapes and uses, to produce a functional turf, to improve and maintain the value of properties, and to promote the economic viability of businesses and communities. '

Integrated Pest Management Protocols for Turf on School Properties and Sports Fields — Price: $20.00

Drawn on the field experience of turf management professionals and based on science, these protocols specify the essential components of an IPM system. This manual can be used to create, implement, evaluate, and document an IPM program for sports turf and turf on school grounds. By outlining the basis for an IPM system, these protocols attempt to increase pest management efficiency and to reduce the reliance on pesticides while protecting the environment. This manual is an indispensable tool for schools that must comply with the Massachusetts Children and Families Protection Act or similar legislation in other states.

Professional Guide for IPM in Turf for Massachusetts — Free Online

ag.umass.edu/turf/professional-turf-ipm-guide

The guide is intended for use by professionals as a tool in the management of all types of turf: from roadsides and utility areas, to lawns, to fine playing surfaces. The latest edition features techniques critical to environmentally responsible, integrated management of turf pests. The guide contains research-based strategies for turfgrass selection, as well as comprehensive pest management guidelines and pesticide regulation compliance information. Alternative and cultural pest control options are highlighted, and advice on pesticide use is based on minimal impact to non-target organisms, natural resources and human health.

Frequently Used Phone Numbers

UMass Extension

www.umass.edu/agland

Agriculture and Commercial Horticulture Program www.umass.edu/agland	413-545-0895
Extension Bookstore	413-545-5227
Pesticide Education Program (p.38)	413-545-1044
Plant Diagnostics	
Floriculture Diagnostics (p.26)	413-545-3209
Fruit Diagnostics (p. 28)	413-545-4347
Tree and Shrub Diagnostics (p.30)	413-545-3208
Turf Diagnostics (p. 32)	413-545-3209
Vegetable Diagnostics (p.28)	413-545-3209
Soil Testing Lab (p. 20)	413-545-2311

Related Units at UMass Amherst

umass.edu 413-545-0111

Agricultural Experiment Station William Miller ag.umass.edu	413-545-5017
Center for Agriculture Food & the Env. Jodi Jellison, Director ag.umass.edu	413-545-4800
Cold Spring Orchard coldspringorchard.com	413-323-6647
College of Natural Sciences Tricia Serio, Dean www.cns.umass.edu	413-545-2766
Dr. Joseph Troll Turf Research Center James Poro extension.umass.edu/turf	413-665-4360
Equine $ Livestock Research & Education Farm (Hadley Farm)	413-549-2863
Stockbridge School of Agriculture Wes Autio, Director stockbridge.cns.umass.edu	413-545-2222

Chemicals and Safety

CHEMTREC® For hazardous materials incidents (spills, leaks, fire, exposure, accident) www.chemtrec.com	800-262-8200
Dig Safe www.digsafe.com	888-344-7233
EPA Emergency National Response Center, Emergency Spills	800-424-8802
National Pesticide Information Center (NPIC) www.npic.orst.edu	800-858-7378
Pesticide Collection Program (Safety Kleen) Chemical disposal business not for general information. www.safety-kleen.com	508-867-7184 800-669-5740 800-323-5040 Toll Free
Poison Control Centers All New England States www.nnepc.org www.maripoisoncenter.com	**800-222-1222**

Agencies & Organizations

American Farmland Trust Northampton www.farmlandinfo.org	413-221-7305
American Public Works Association New England Chapter Jacqueline Connors newengland.apwa.net	781-337-8230
Arnold Arboretum, Jamaica Plain www.arboretum.harvard.edu	617-524-1718
Berkshire Botanical Garden	413-298-3926
Berkshire Grown, Great Barrington buylocal@berkshiregrown.org www.berkshiregrown.org	413-528-0041
Board of Registration of Landscape Architects www.mass.gov/dpl	617-727-3072
Cape Cod Cranberry Growers Assoc. info@cranberries.org www.cranberries.org	508-866-7878
Cape Cod Landscape Association www.capecodlandscapes.org	508-827-4639
Center for Ecological Technology Florence Pittsfield cet@cetonline.org www.cetonline.org	413-586-7350 413-445-4556
Community Involved in Sustaining Agriculture (CISA), South Deerfield info@buylocalfood.org www.buylocalfood.org	413-665-7100
Cornell Waste Management Institute, Ithaca, NY cwmi@cornell.edu www.cwmi.css.cornell.edu	607-255-1187
Ecological Landscaping Alliance ela.info@comcast.net www.ecolandscaping.org	617-436-5838
Golf Course Superintendents Association of America www.gcsaa.org	800-472-7878

Golf Course Superintendents Association of New England www.gcsane.org	774-430-9040
International Plant Propagator's Society, Eastern Region Margot Bridgen ena.ipps.org	631-765-9638
International Society of Arboriculture New England Chapter www.newenglandisa.org	978-844-0441
IPM Institute of North America, info@ipminstitute.org www.ipminstitute.org	608-232-1410
Lyle E. Littlefield Ornamentals Trial Garden, Orono, ME umaine.edu/littlefieldgarden/about	207-581-3112
Mass Farm-To-School Project info@massfarmtoschool.org massfarmtoschool.org	413-253-3844
Mass Farmers Markets, hello@massfarmersmarkets.org www.massfarmersmarkets.org	781-893-8222
Massachusetts Agriculture in the Classroom info@massaginclassroom.org www.aginclassroom.org	508-443-1703
Massachusetts Aquaculture Association massaquaculture.org	n/a
Massachusetts Arborists Association info@massarbor.org www.massarbor.org	508-653-3320
Massachusetts Association of Landscape Professionals info@mlp-mclp.org www.mlp-mclp.org	508-653-3373
Massachusetts Association of Lawn Care Professionals malcp@yahoo.com www.malcp.org	781-274-7373
Massachusetts Audubon Society, www.massaudubon.org	781-259-9500
Massachusetts Christmas Tree Growers Association www.christmas-trees.org	978-346-4381
Massachusetts Farm Bureau www.mfbf.net	508-481-4766 866-548-6323
Massachusetts Flower Growers Assoc. www.massflowergrowers.com	781-275-4811
Massachusetts Fruit Growers Assoc. autio@umass.edu www.massfruitgrowers.org	413-545-2963
Massachusetts Golf Association info@massgolf.org www.massgolf.org	774-430-9100
Massachusetts Horticultural Society www.masshort.org	617-933-4900
Massachusetts Maple Producers Assoc. info@massmaple.org www.massmaple.org	413-628-3912
Massachusetts Nursery and Landscape Association www.mnla.com	413-369-4731
Massachusetts Public Interest Research Group (MassPIRG) info@masspirg.org www.masspirg.org	617-292-4800
Massachusetts Recreation and Park Association www.massrpa.org info@massrpa.org	413-568-8356

MASSACHUSETTS, STATE OF

DEPARTMENT OF AGRICULTURAL RESOURCES (MDAR) www.mass.gov/agr 251 Causeway Street, Suite 500 Boston, MA 02114-2151	617-626-1700 (Boston Office)
John Lebeaux, Commissioner John.Lebeaux@mass.gov	617-626-1733
• Agricultural Conservation and Technical Assistance, Division of CAFO/AFO: Gerard Kennedy Gerard Kennedy Gerard.Kennedy@mass.gov	617-626-1773
• Agricultural Environmental Enhancement Grants Laura Maul Laura.Maul@mass.gov	617-626-1739
• Agricultural Markets, Division of www.mass.gov/agr/divisions Mary Jordan, Director mary.jordan@mass.gov	617-626-1750
Aquaculture: Sean Bowen	617-626-1724
Export Markets: Bonita Oehlke	617-626-1753
Farm Composting: Sean Bowen	617-626-1724
Farm Viability: Melissa Adams	617-726-2001
Farmers Markets: David Webber	617-626-1754
Land Use, APR Program: Ron Hall	617-726-2002
Markets: Rick LeBlanc	617-626-1759
• Animal Health: Esther Wegman	617-626-1795
• Apiary Inspection Service Kim Skyrm, Chief Apiary Inspector, Apiary Program Coordinator Kim.Skyrm@mass.gov	413-726-2007 857-319-1020 617-626-1801
• Wetlands Information Resource Ken Chin, Environ. Engineer ken.chin@mass.gov	617-292-5893
Jonathan Hobill, Southeast Region	508-946-2700

- Crop and Pest Services
  Taryn Lascola 617-626-1776
  Taryn.Lascola@mass.gov
- Energy Efficiency, Conservation, & Renewables Program
  Gerry Palano 617-626-1706
  gerald.palano@mass.gov
- Farm Viability Enhancement Program (FVEP)
  Melissa Adams 413-726-2001
  melissa.l.adams@mass.gov
- Pesticide Enforcement Hotline 617-626-1781
- Pesticide Exam and License Info. Packet 617-626-1784

DEPARTMENT OF CONSERVATION & RECREATION
www.mass.gov/dcr 617-626-1250

DEPARTMENT OF ENVIRONMENTAL PROTECTION 617-292-5500
www.mass.gov/dep
Western Region 413-784-1100
Central Region 508-792-7650
Northeast Region 978-694-3200
Southeast Region 508-946-2700

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS 617-626-1000
www.mass.gov/eea

HOISTER'S LICENSE
www.mass.gov/hoisting

INDUSTRIAL ACCIDENTS
(Workers' Comp) 800-323-3249
www.mass.gov/dia

OFFICE OF BUSINESS DEVELOPMENT
www.mass.gov/mobd 617-973-8600

PUBLIC SAFETY & INSPECTIONS OFFICE
www.mass.gov/dps 617-727-3200

Massachusetts Tree Wardens & Foresters Association 781-894-4759
info@masstreewardens.org
www.masstreewardens.org

New England Cemetery Association 203-813-6322
newenglandcemetery.org

New England Nursery Association, 508-653-3112
newenglandnurseryassociation.org

New England Park Association 412-455-6789
1898nepa@gmail.com
neparkassociationct.myrec.com

New England Pest Management Association, Concord, NH 833-630-8009
www.nepma.org

New England Regional Turfgrass Foundation & New England Reg'l Turf Conference & Trade Show 401-841-5490
www.nertf.org

New England Small Farm Institute (NESFI) 413-323-4531
info@smallfarm.org
www.smallfarm.org

New England Sod Producers Association
Gary Sykes, Exec. Director 401-841-5490
www.nesod.org

New England Sports Turf Managers Association (NESTMA) 508-653-1241
www.nestma.org

New England Vegetable and Berry Growers Association 978-423-6694
secretary@nevbga.org
nevbga.org

New Entry Sustainable Farming Project 978-654-6745
nesfp@tufts.edu
nesfp.org

Northeast Biosolids and Residuals Association, Tamworth, NH 603-323-7654
www.nebiosolids.org

Northeast Greenhouse Conference
Delaney Meeting & Event Mgt. 802-865-5202
www.negreenhouse.org

Northeast Organic Farming Assoc (NOFA)
Massachusetts Chapter, Barre 978-355-2853
www.nofamass.org

Northeast Sustainable Agriculture Working Group (NESAWG), 914-231-9206
www.nesawg.org 845-501-0191

Schumacher Center for a New Economics 413-528-1737
www.centerforneweconomics.org

Southeastern Mass Agricultural Partnership (SEMAP) 508-524-2601
semaponline.org

Sports Turf Managers Association (STMA) 800-323-3875
www.stma.org

Sustainable Agriculture Research and Education (SARE)
nesare@uvm.edu 802-651-8335
www.nesare.org

Tower Hill Botanic Garden,
Boylston 508-869-6111
www.towerhillbg.org

Toxics Use Reduction Institute,
UMass Lowell 978-934-3275
www.turi.org

Turfgrass Producers International 847-649-5555
www.turfgrasssod.org 800-405-8873

United States Golf Association
usga@usga.org 908-234-2300
www.usga.org

US DEPARTMENT OF AGRICULTURE www.usda.gov	
• Agricultural Mediation Program Mass. Office of Public Collaboration University of Massachusetts Boston	888-869-1898 617-287-4046
• APHIS - Animal & Plant Health Inspection Service www.aphis.usda.gov	844-820-2234
• Farm Service Agency Amherst	413-253-4500
• Rural Development	413-253-4300
• Natural Resources Conservation Service State wide office, Hadley	413-253-4350
• National Turfgrass Evaluation Program www.ntep.org	301-504-5125
US ENVIRONMENTAL PROTECTION AGENCY (EPA) www.epa.gov	
•Regional 1 Pesticide Program www.epa.gov/pesticide-contacts/region-1-pesticide-contacts	617-918-1111
US FISH AND WILDLIFE SERVICE www.fws.gov Northeast Region	 413-253-8200
US FOREST SERVICE www.fs.usda.gov	800-832-1355

Information Resources for Home Gardeners

UMASS

UMass Garden Calendar
www.UMassGardenCalendar.org

Home Gardener Factsheets and Gardening Questions
ag.umass.edu/resources/home-lawn-garden / Email: greeninfo@umext.umass.edu

Plant Diagnostic Laboratory (see page 25)
ag.umass.edu/diagnostics

Soil and Plant Nutrient Testing Laboratory (see page 20)
soiltest.umass.edu

Tick Testing (see page 21)
www.umass.edu/tick

GARDEN HOTLINES

Western Massachusetts Master Gardener Association (413) 298-5355
www.wmmga.org / Email: AskWMMGA@gmail.com

Massachusetts Master Gardener Association (617) 933-4929
www.massmastergardeners.org / Email: mghelpline@masshort.org
Mon, Wed, Fri, 10 am - 2 pm

Barnstable County Master Gardener Program (508) 375-6700
(Barnstable County residents only)

BOTANIC GARDENS

Arnold Arboretum (617) 384-5235
www.arboretum.harvard.edu (617) 524-1718 ext. 6
plantinformation@arnarb.harvard.edu
Mon, 1 - 3 pm

Tower Hill Botanic Garden (508) 869-6111 ext. 110
Wed, 2 -4 pm

OTHER

Massachusetts Audubon Wildlife Information Line (781) 259-2150
Especially helpful with questions about snakes and other wildlife.
Mon, Wed & Fri, 11 am - 2 pm
wildlifeinfo@massaudubon.org

National Pesticide Information Center (NPIC) (800) 858-7378
Sponsored by the Environmental Protection Agency; offers impartial information about pesticides (products, poisoning, safety, health and environmental effects, etc.). Also provides services in Spanish.
Mon - Fri, 11:00 am - 3:00 pm (excluding holidays)
www.npic.orst.edu

USDA Wildlife Services (413) 253-2403
Technical assistance for wildlife damage & assistance in obtaining migratory bird depredation permits. Mon - Fri, 8:00 am - 4:30 pm

Water Testing

Howard Laboratories - howardlaboratories.com (413) 247-5533
Pro Lab Water Quality Testing - www.prolabinc.com (954) 384-4446