



UNIVERSITY OF MASSACHUSETTS



The Green Directory 2019

Educational Resources for
the Agricultural &
Commercial Horticulture
Industries of
Massachusetts

This guide will help you find the services and assistance offered by UMass Extension.

UMass Amherst is committed to working with agricultural businesses to maintain and grow an economically and environmentally healthy Commonwealth.

umass.edu/agland



THE COLLEGE OF
NATURAL
SCIENCES



UMass Extension Agriculture & Commercial Horticulture Program

umass.edu/agland

PROGRAMS

CRANBERRY

CROPS, DAIRY, LIVESTOCK, EQUINE

FRUIT

GREENHOUSE CROPS & FLORICULTURE

LANDSCAPE, NURSERY & URBAN FORESTRY

PESTICIDE EDUCATION

TURF

VEGETABLES

SERVICES

BEGINNING FARMER RESOURCES

HOT WATER SEED TREATMENT

PEST ALERTS / MESSAGES

PLANT PROBLEM DIAGNOSTICS

SOIL AND TISSUE TESTING LABORATORY

TICK-BORNE DISEASE DIAGNOSTICS

EMPHASIS AREAS

BEST MANAGEMENT PRACTICES (BMPs)

DISASTER PREPAREDNESS

FOOD SAFETY

INTEGRATED PEST MANAGEMENT

INVASIVE PLANT AND PEST MANAGEMENT

NUTRIENT MANAGEMENT

RISK MANAGEMENT



UMass Extension is an equal opportunity provider and employer, United States Department of Agriculture cooperating. Contact your local Extension office for information on disability accommodations. Contact the State Extension Director's Office if you have concerns related to discrimination, 413-545-4800 or see www.umassxtension.org/civilrights.

Index

UMass Extension Agriculture and Commercial Horticulture Program Staff	2
UMass Extension Newsletters	8
Conferences and Workshops	10
Online Updates: First Alert Messages	
Greenhouse Updates and E-mail List	19
Turf Management Updates and TurfTalk E-mail List	19
The Landscape Message and E-mail List	19
Vegetable Pest Alerts	20
Fruit Pest Alerts	20
Soil and Plant Nutrient Testing.....	21
Hot Water Seed Treatment.....	22
Tick-Borne Disease Analysis	22
Crop Insurance/Risk Management Education.....	23
At-A-Glance Calendar of Conferences and Workshops.....	24
Plant Problem Diagnostics	26
Floriculture Diagnostics	27
Fruit & Vegetable Diagnostics	29
Tree and Shrub Disease and Insect Diagnostics	31
Turfgrass Disease Diagnostics and Nematode Assays	34
Turfgrass Identification	35
Weed and Invasive Plants Identification	35
Water Testing.....	35
How to Get a Pesticide License	38
Pesticide Applicator License Exam Training	39
UMass Garden Calendar.....	40
Publications available from UMass Extension	41
Frequently Used Phone Numbers	44
Resources for Home Gardeners	Inside Back Cover

This directory highlights the educational resources provided by the Agriculture and Landscape 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

Team Name & Staff	Program Focus	Location	Phone	Fax	E-mail
-------------------	---------------	----------	-------	-----	--------

Cranberry - ag.umass.edu/cranberry

HILARY SANDLER Faculty & Team Leader	IPM Extension & Weed Ecology	Cranberry Station	508-295-2212 x21	508-295-6387	hsandler@umass.edu
ANNE AVERILL Faculty	Entomology	Holdsworth Hall	413-545-1054	413-545-2115	averill@eco.umass.edu
KRYSTAL DEMORANVILLE Research Technician	Plant Physiology	Cranberry Station	508-295-2212 x27	508-295-6387	krystald@umass.edu
DAWNA GAUVIN Staff	Bookkeeper	Cranberry Station	508-295-2212 x12	508-295-6387	dgauvin@umass.edu
ROBYN HARDY Staff	Clerk	Cranberry Station	508-295-2122 x 10	508-295-6387	rmhardy@umass.edu
PETER JERANYAMA Faculty	Plant Physiology	Cranberry Station	508-295-2212 x29	508-295-6387	peterj@umass.edu
RICK LEIBE Staff	Farm & Grounds Manager	Cranberry Station	508-295-2212 x14	508-295-6387	rleibe@umass.edu
SAI SREE UPPALA Faculty	Plant Pathology	Cranberry Station	508-229-2212 x18	508-295-6387	N/A
MARTHA SYLVIA Research Technician	Extension Entomology & Research	Cranberry Station	508-295-2212 x20	508-295-6387	martys@umass.edu

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

PAUL RUSSELL Program Coordinator & Educator	Crop Insurance, Risk Management Education	French Hall	508-472-2364	413-545-3075	pmrussell@umass.edu
TOM SMIAROWSKI Program Coordinator & Educator	Crop Insurance, Risk Management Education	French Hall	413-320-1718	413-545-3075	tsmiarowski@umass.edu
LISA MCKEAG Project Director	Food Safety	French Hall	413-577-3976		lmckeag@umext.umass.edu

Team Name & Staff	Program Focus	Location	Phone	Fax	E-mail
Crops, Dairy, Livestock & Equine - ag.umass.edu/crops-dairy-livestock-equine					
MASOUD HASHEMI Faculty & Team Leader	Nutrient & Pasture Management	Bowditch Hall	413-545-1843	413-545-0260	masoud @umass.edu
CARRIE CHICKERING-SEARS Educator	Community and Animal Education	Hadley Farm	413-545-5302	413-577-0760	ccsears @umext.umass.edu
CARLOS GRADIL Faculty	Equine Reproduction	Integrated Sciences Bldg	413-577-2214	413-545-6326	cgradil @vasci.umass.edu
STEPHEN HERBERT Faculty	Agronomy	Bowditch Hall	413-545-2250	413-545-0260	sherbert @cns.umass.edu
ALICE NEWTH Staff	Sheep & goats	Hadley Farm	413-549-3258	n/a	newth @vasci.umass.edu
JILLIANNE SMITH Lecturer	Equine Management	Manor House Hadley Farm	781-603-4521	n/a	jrsmith @umass.edu
ALEXANDRA SMYCHKOVICH Staff	Departmental Assistant	Bowditch Hall	413-545-5221	413-545-0260	asmychko @umass.edu
CASSIE URICCHIO Instructor, Director of Equine Management	Equine Management	Hadley Farm	413-345-0183	n/a	curicchio @umass.edu
SARAH WEIS Staff	Research & Extension Technician	Bowditch Hall	413-545-5221	413-545-0260	sweis @umass.edu
Fruit - ag.umass.edu/fruit					
SONIA SCHLOEMANN Educator & Team Leader	Small Fruit, Grapes, Horticulture & IPM	French Hall	413-545-4347	413-545-3075	umassfruit @umass.edu
WESLEY AUTIO Faculty	Apples, Peaches, Rootstocks	Paige Lab	413-545-2963	413-577-0242	autio @umass.edu
JON CLEMENTS Educator	Tree Fruit Horticulture	UMass Cold Spring Orchard	413-478-7219	413-323-0382	jon.clements @umass.edu
DANIEL COOLEY Faculty	Fruit Diseases	Paige Lab	413-577-3803	413-577-0242	dcooley @umass.edu
JAMES CRONK Staff	Fruit Production	UMass Cold Spring Orchard	413-323-6647	n/a	cronk @psis.umass.edu
ELIZABETH GAROFALO Research Assistant	Fruit IPM	Paige Lab /French Hall	n/a	n/a	egarofal @umass.edu
DUANE GREENE Faculty	Apples, Thinning, Varieties	Bowditch Hall	413-545-5219	413-545-0260	dgreene @umass.edu
KRISTIN HANLEY Staff	Fruit Production	UMass Cold Spring Orchard	413-323-6647	n/a	kmhanley @psis.umass.edu
JAMES KRUPA Staff	Research Technician	UMass Cold Spring Orchard	413-323-0382	413-323-0382	jkrupa @psis.umass.edu

Team Name & Staff	Program Focus	Location	Phone	Fax	E-mail
SHAWN MCINTIRE Staff	Fruit Production,	UMass Cold Spring Orchard	413-323-6647	n/a	mcintire @psis.umass.edu
ANGELA MADEIRAS Educator	Small Fruit Diagnostics	French Hall	413-545-3209	413-545-3075	madeiras@umass.edu
ELSA PETIT Faculty	Viticulture	Bowditch Hall	413-545-5217	n/a	epetit@umass.edu
JAIME PINERO Faculty	Fruit Entomology	Fernald Hall	413-545-1031	n/a	jpinero@umass.edu
ARTHUR TUTTLE Educator	Fruit Diseases	Fernald Hall	413-545-3748	413-545-2115 413-658-8628	aft @umass.edu
DOREEN YORK Staff	Team Support	French Hall	413-545-2254	413-545-3075	dyork @umext.umass.edu

Greenhouse Crops & Floriculture - ag.umass.edu/greenhouse-floriculture

JASON LANIER Educator & Team Leader	Greenhouse Crop Production	French Hall	413-545-2965	413-577-1620	jdl@umass.edu
LAURIE CADORETTE Staff	Bookkeeper and Program Supports	Pittsfield, MA	413-448-8285	N/A	lauriec @umext.umass.edu
DOUGLAS COX Faculty	Greenhouse Crop Nutrition & Culture	Bowditch Hall	413-545-5214	413-545-0260	dcox @umass.edu
ANGELA MADEIRAS Educator	Greenhouse Disease Diagnostics	French Hall	413-545-3209	413-545-3075	madeiras@umass.edu
GEOFFREY NJUE Educator	Greenhouse Crop Production	Waltham Field Station	781-891-0650 Ext. 12	n/a	gnjue@umass.edu
RUSSELL NORTON Educator	Sustainable Landscapes	Cape Cod Extension	508-375-6692	508-362-4518	rnorton @barnstablecounty.org
ROBERT WICK Faculty	Greenhouse Disease Research & Diagnostics	Fernald Hall	413-545-1045	413-545-2115	rlwick @umass.edu

Integrated Pest Management - ag.umass.edu/integrated-pest-management

HILARY SANDLER Faculty & IPM Program Coordinator	Cranberry IPM	Cranberry Station	508-295-2212 x21	508-295-6387	hsandler @umass.edu
KATIE CAMPBELL-NELSON Educator	Vegetable Production, IPM, Nutrient Mgmt..	French Hall	413-577-3976	413-545-3075	kcampbel @umass.edu
JON CLEMENTS Educator	Fruit IPM	UMass Cold Spring Orchard	413-478-7219	413-323-0382	jon.clements @umass.edu
LISA MCKEAG Educator	Vegetable Produc- tion, IPM, Food Safety	French Hall	413-577-3976	413-545-3075	lmckeag @umext.umass.edu
SUSAN SCHEUFELE Educator	Vegetable Production, Plant Pathology, IPM	French Hall	413-577-3976	413-545-3075	sscheufele @umext.umass.edu
SONIA SCHLOEMANN Educator	Small Fruit IPM	French Hall	413-545-4347	413-545-3075	sgs @umext.umass.edu

<i>Team Name & Staff</i>	<i>Program Focus</i>	<i>Location</i>	<i>Phone</i>	<i>Fax</i>	<i>E-mail</i>
ARTHUR TUTTLE Educator	Fruit IPM	Fernald Hall	413-545-3748 413-658-8628	413-545-2115	aft @umass.edu

Landscape, Nursery, & Urban Forestry - umassgreeninfo.org

TAWNY SIMISKY Entomologist & Team Leader	Tree & Shrub Insect Diagnostics & Program Coordination	French Hall	413-545-1053	413-545-3075	tsimisky @umass.edu
AMANDA BAYER Faculty	Sustainable Landscape Horticulture	Bowditch Hall	413-545-1059	413-545-0260	abayer10 @umass.edu
NICK BRAZEE Educator	Tree & Shrub Disease Diagnostics	French Hall	413-545-2826	413-545-3075	nbrazee @umass.edu
RICK HARPER Faculty	Arboriculture & Community Forestry	Holdsworth Hall	413-545-3747	413-545-4358	rharper @eco.umass.edu
BRIAN KANE Faculty	Arboriculture & Hazardous Trees	Holdsworth Hall	413-545-6637	413-545-4358	bkane @eco.umass.edu
GEOFFREY NJUE Educator	Sustainable Landscapes	Waltham, MA	781-891-0650 Ext. 12	n/a	gnjue @umext.umass.edu
RUSSELL NORTON Educator	Sustainable Landscapes	Cape Cod Extension	508-375-6692	508-362-4518	rnorton @barnstablecounty.org
RANDALL PROSTAK Educator	Weed Management	French Hall	413-577-1738	413-545-3075	rprostak @umass.edu
ELLEN WEEKS Staff	Educational Program Mgmt	French Hall	413-545-2685	413-577-1620	eweeks @umext.umass.edu

Pesticide Education - umass.edu/pested

NATALIA CLIFTON Staff	Pesticide Education	Fernald Hall	413-545-1044	413-545-3075	nclifton @umass.edu
--------------------------	------------------------	--------------	--------------	--------------	------------------------

Soil & Plant Nutrition

TRACY ALLEN Staff	Soil & Plant Nutrient Testing	Paige Lab	413-545-5304	413-577-0242	tall @umext.umass.edu
ALLEN BARKER Faculty	Soil Fertility & Plant Nutrition	Bowditch Hall	413-545-4733	413-545-0260	barker @umass.edu
DOUG COX Faculty	Soil Fertility	Bowditch Hall	413-545-5214	413-545-0260	dcox @umass.edu
J.SCOTT EBDON Faculty	Soil Fertility, Turf	Paige Lab	413-545-2506	413-577-0242	sebdon @umass.edu
KATIE CAMPBELL-NELSON Educator	Nutrient Mgmt. for Vegetable Crops	French Hall	413-577-3976		kcampbel @umass.edu
STEPHEN HERBERT Faculty	Soil Fertility	Bowditch Hall	413-545-2250	413-545-0260	sherbert @cns.umass.edu
FRANCIS MANGAN Faculty	Soil Fertility	Paige Lab	413-545-1178 508-254-3331	413-577-0242	fmangan @umass.edu

Team Name & Staff	Program Focus	Location	Phone	Fax	E-mail
BAOSHAN XING Faculty	Soil Fertility Chemistry	Paige Lab	413-545-5212	413-577-0242	bx @umass.edu
KIRSTEN YARROWS Staff	Bookkeeper Soil Testing Lab	Paige Lab	413-545-2311	413-577-0242	kyarrows @umext.umass.edu

Turf - ag.umass.edu/turf

MARY OWEN Educator & Team Leader	Turf Management & IPM	Worcester, MA	508-892-0382	508-892-4218	mowen @umass.edu
PRASANTA BHOWMIK Faculty	Turf Weed Management	Stockbridge Hall	413-545-5223	413-545-3958	pbhowmik @umass.edu
LAURIE CADORETTE Staff	Bookkeeping & Program Support	Pittsfield, MA	413-448-8285	N/A	lauriec @umext.umass.edu
MICHELLE DACOSTA Faculty	Turf Physiology	Paige Lab	413-545-2547	413-577-0242	mdacosta @umass.edu
J. SCOTT EBDON Faculty	Turf Agronomy	Paige Lab	413-545-2506	413-577-0242	sebdon @umass.edu
GEUNHWA JUNG Faculty	Turf Pathology	Paige Lab	413-545-2243	413-577-0242	jung @umass.edu
OLGA KOSTROMYTSKA Faculty	Turf Entomology	Ag. Engineering Building	413-545-0268	N/A	okostromytsk @umass.edu
JASON LANIER Educator	Turf Management & IPM	French Hall	413-545-2965	413-577-1620	jdl @umass.edu
ANGELA MADEIRAS Educator	Turf Diagnostics	French Hall	413-545-3209	413-545-3075	madeiras @umass.edu
JAMES PORO Staff	Research Ctr Superintendent	Joseph Troll Turf Research Center	413-665-4360	413-577-0242	jporo @psis.umass.edu
RANDALL PROSTAK Educator	Turf Weed Management	French Hall	413-577-1738	413-545-3075	rprostak @umass.edu
ROBERT WICK Faculty	Turf Pathology & Nematology	Fernald Hall	413-545-1045	413-545-2115	rlwick @umass.edu

Vegetables - ag.umass.edu/vegetable

KATIE CAMPBELL-NELSON Educator & Team Leader	Vegetable Production, Nutrient Management, IPM	French Hall	413-545-1051	413-545-3075	kcampbel @umass.edu umassvegetable @umext.umass.edu
AMANDA KINCHLA Faculty	Food Safety	Chenoweth Hall	413-545-1017	413-545-1262	amanda.kinchla @foodsci.umass.edu
ANGELA MADEIRAS Educator	Disease Diagnostics	French Hall	413-545-3209	413-545-3075	madeiras @umass.edu
FRANCIS MANGAN Faculty	Vegetable Production, Soil Fertility, Cover Crops, Ethnic Crops, Marketing	Paige Lab	413-545-1178 508-254-3331	413-577-0242	fmangan @umass.edu

Team Name & Staff	Program Focus	Location	Phone	Fax	E-mail
LISA MCKEAG Educator	Vegetable Production, IPM, Food Safety	French Hall	413-577-3976	413-545-3075	lmckeag @umext.umass.edu
SUSAN SCHEUFELE Educator	Vegetable Production, Plant Pathology, IPM	French Hall	413-577-3976	413-545-3075	sscheufele @umext.umass.edu
ROBERT WICK Faculty	Disease Diagnostics	Fernald Hall	413-545-1045	413-545-2115	rlwick @umass.edu

Administration

MARY OWEN Interim Director, Commercial Horticulture Programs	Program Direction	Worcester, MA	508-892-0382	508-892-4218	mowen @umass.edu
SONIA SCHLOEMANN Interim Director, Agricultural Programs	Program Direction	French Hall	413-545-4347	413-545-3075	sgs @umext.umass.edu
LAURIE CADORETTE Staff	Bookkeeper & Program Support	Pittsfield, MA	413-448-8285	N/A	lauriec @umext.umass.edu
DOREEN YORK Staff	Bookkeeper & Program Support	French Hall	413-545-2254	413-545-3075	dyork @umext.umass.edu

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

For landscapers, grounds managers and other green industry professionals. Monthly email alerts for green industry professionals to emerging landscape insect and disease problems while providing timely Integrated Pest Management strategies. Emphasizes timely plant health care practices and problem-solving information. Subscribe at www.umassgreeninfo.org under Services.

Garden Clippings

A monthly e-newsletter March through October for home gardeners with tips of the month and other timely information. Subscribe at ag.umass.edu/landscape/publications-resources/garden-calendar/umass-extensions-home-gardener-email-list

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: \$40 per year for the print version and \$20 per year for the email version. Subscribe online at www.umassextensionbookstore.com/store.php?crn=224. All payments must be made in United States currency. Contact Wesley Autio at (413)545-2963 or [autio@umass.edu](mailto:auto@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 other updated included with the Healthy Fruit subscription. The cost for subscription to *Healthy Fruit* hasn't been set at this printing but you can find it by going to the online subscription page at www.umassextensionbookstore.com/store. 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

Northeast Greenhouse Conference

November 7-8, 2018

Location Boxboro Regency Hotel, Boxborough, MA

The first greenhouse conference was held in 1972 and it has grown into a tradition. The Northeast Greenhouse Conference is a biennial event for greenhouse growers, garden retailers, allied trades, educators and students. Two full days with over 30 educational sessions will feature a wide range of topics on greenhouse culture, new product trends, plant nutrition, retail marketing, pest and disease management, biological control and business management. Concurrent sessions offer the latest research and innovative practices by industry experts, nationally recognized speakers, growers and Extension staff. More than 120 exhibitors during dedicated trade show time. For complete information visit <http://www.negreenhouse.org>.

Fall Wrap-Up for Landscape, Grounds & Turf Managers

November 27, 2018

Location Hadley Farms Meeting House, Hadley, MA

Join our UMass Extension Specialists for a look at the challenges and problems of the 2018 season. Topics on woody ornamentals in the morning session include: Invasive Insects in Massachusetts: 2018 Updates; What We Saw in the Plant Diagnostic Lab in 2018; and Managing Tough Landscape Weeds. Turf topics in the afternoon session include: Best Management Practices for Managing Grassy Weeds in Turf; Strategies for Managing Turf Damaging Pests in an IPM System; and BMPs that Maximize Turfgrass Tolerance to Stress and Pests. Attendees can choose to attend either the morning or afternoon sessions, or the entire day.

Pesticide credits: Morning Session - Three pesticide contact hours for categories 36 or Applicators License. Afternoon Session - Three pesticide contact hours for categories 37 or Applicators License. Entire day - 3 pesticide contact hours for categories 36 and 37; 6 for Applicators License. Association credits: 2 MCA, 2 MCLP, and 1 MCH credits available.

Preregistration is required, as space is limited; the cost is \$75 for a half day, \$95 for the full day. 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.

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

UMass Winter School for Turf Managers

January 7 - February 15, 2019

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. Close-knit classes offer the opportunity to form lasting relationships with peers and memories that will last a lifetime.

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 and an application for the 2019 course, visit <http://ag.umass.edu/turf> or contact the UMass Winter School for Turf Managers at (413) 545-5202. Applications for the 2020 course will be available in the summer of 2019.

Pesticide Education Program Workshops

Contact Natalia Clifton, UMass Extension, at (413) 545-1044 or check ag.umass.edu/pested for the schedule of 2019 workshops. More details on page 38.

Greenhouse Production 2019 - Focus on Pest Management

January 9, 2019

9:30 am - 3:30 pm

Location: Holiday Inn & Suites, 265 Lakeside Avenue, Marlborough, MA

This program will provide information on the most effective biological and conventional approaches for managing pests in spring greenhouse crops. Topics will include: strategies for success with biological control, tips on the most effective approaches for managing the most troublesome insect and mite pests in greenhouses, using mineral nutrition to prevent diseases in greenhouse crops, and utilizing biofungicides to manage diseases in greenhouse crops.

Pesticide credits will be offered. MCH, MCLP and AOLCP credit requested.

Preregistration is required, as space is limited; cost \$60 per person. Lunch is on your own, morning coffee will be provided. For more information, go to ag.umass.edu/greenhouse-floriculture or contact Geoffrey Njue, UMass Extension, (781) 891-0650 x 12, gnjue@umext.umass.edu or Jason Lanier at (413) 545-2965; jdl@umass.edu.

Cranberry Management Update

January 30, 2019

7:30 am - 4:00 pm

Location: Hotel 1620 (formerly the Radisson), Plymouth, 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.

Mass Aggie Seminars Home Garden Series

February through May, 2019 - Times and dates vary - Location varies with each seminar

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.

Dates, locations and 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.

Winter Flower Growers Program

February 5, 2019

7:30 am - 4:00 pm

Location: Northeast Greenhouse & Nursery Supply, 8 Dearborn Road, Peabody, MA

A full day educational program for greenhouse and floriculture businesses. Co-sponsored by the UMass Extension Greenhouse Crops and Floriculture Program and the Massachusetts Flower Growers Association.

For more information, go to ag.umass.edu/greenhouse-floriculture or contact Geoffrey Njue (781) 891-0650, Ext. 12, gnjue@umext.umass.edu or Bob Luczai at (781) 275-4811; bluczai@massflowergrowers.com.

Spotted Lanternfly Preparedness Conference

February 7, 2019 (snow date Feb. 14)

8:30 am - 3:30 pm

Location: Doubletree Hotel, Milford, MA

The spotted lanternfly (*Lycorma delicatula*) was first detected in the United States in Pennsylvania in 2014. This non-native, invasive insect has since had a large impact on agricultural and ornamental crops and the quality of life of many Pennsylvania residents. While this insect is associated with the invasive tree of heaven (*Ailanthus altissima*), it has been reported on 70+ species of host plants, including apple, plum, peach, grape, and many native and ornamental trees and shrubs. This insect is unfortunately on the move, having been detected in additional states including Delaware, New York, Virginia, New Jersey, Connecticut, and Maryland (at the time this document was published).

What can we do in Massachusetts to prepare for this insect? Knowledge is power. This conference will provide information about the identification, life cycle, impact, monitoring, and Integrated Pest Management options that are known for this insect. Speakers will provide info on the latest research. Landscapers, arborists, tree wardens, foresters, nursery operators, grounds managers, and tree fruit and small fruit growers are encouraged to attend.

6 pesticide contact hours for categories 25, 27, 29, 35, 36, and Applicators License. ISA, SAF, MCA, MCH, MCLP and AOLCP credit requested.

Preregistration is required, as space is limited; cost is a reduced \$70 thanks to funding support from a grant from the MA Department of Agricultural Resources. 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.

TickTalk with TickReport! A Live Webinar Series

Second Wednesday of the month

12:00 - 1:00 pm

Location: Online at GoToWebinar

- February 13, 2019 - **Ticks and Personal Protection**, Dr. Stephen Rich, UMass Laboratory of Medical Zoology
- March 13, 2019 - **Deer Ticks (*Ixodes scapularis*) and Associated Diseases**, Dr. Stephen Rich, UMass Laboratory of Medical Zoology
- April 10, 2019 - **2018/2019 Tick Updates from the UMass Laboratory of Medical Zoology**, Dr. Stephen Rich, UMass Laboratory of Medical Zoology
- May 8, 2019 - **American Dog Ticks (*Dermacentor variabilis*) and Lone Star Ticks (*Amblyomma americanum*) and Associated Diseases**, Dr. Stephen Rich, UMass Laboratory of Medical Zoology
- October 9, 2019 - **2019 Tick Updates from the UMass Laboratory of Medical Zoology**, Dr. Stephen Rich, UMass Laboratory of Medical Zoology

No pesticide contact hours or association CEU's will be available for this free series.

This is a free series, but preregistration is required to access the webinars. 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. For more information on ticks and tick testing, go to www.tickreport.com.

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 www.umassvegetable.org, and in *Vegetable Notes*. You may also contact the Vegetable Program at (413) 545-1051 or 577-3976 or at ag.umass.edu/vegetable.

Invasive Plant Certification Program

A1 - February 19, 2019, 9 am to 2:30 pm

A3 - March 19, 2019, 9 am to 2:00 pm

A2 - March 14, 2019, 9 am to 3:00 pm

B - April 9, 2019, 9 am to 2:30 pm

Location: Doubletree Hotel, Milford, 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. All sessions may also be taken individually. Those wishing to earn the certificate are encouraged to take all four sessions in one season to get the most out of the information. For more information or a registration form, 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 or \$86 per person for three or more registrations from the same company (10% discount). *Four pesticide contact hours in categories 29, 36, 40, and Applicator's License.*

A2 State Regulations Pertaining to Invasive Plant Management

While landscape 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 or \$86 per person for three or more registrations from the same company (10% discount). *Two pesticide contact hours in categories 29, 36, 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 recently released Early Detection/Rapid Response Priority List, will be discussed. Cost: \$95 or \$86 per person for three or more registrations from the same company (10% discount). *Three pesticide contact hours in categories 29, 36, 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 or \$86 per person for three or more registrations from the same company (10% discount). *Four pesticide contact hours in categories 29, 36, 40, and Applicator's License.*

40th Annual UMass Community Tree Conference: Species Selection in the Urban Landscape - Professional Perspectives

March 5, 2019 - 8:45 am - 3:30 pm

Location: Bowker Auditorium, Stockbridge Hall, UMass Amherst

This day-long conference will focus on examining the various perspectives that practicing professionals have regarding the choice of plant materials that they use in urbanized settings. The conference features presenters who will examine how they select trees and other vegetation to address specific scenarios such as public safety and climate change. Topics include: Choosing Trees for Storm Resistance, Creating Habitat for Birds in Urban Settings, Selecting Trees to Improve Public Health in the City, Addressing Climate Change at the Local Level: Trees in the Urban Landscape, Insects and Disease: Strategic Approaches to Managing Threats, and Expert Perspectives: Evaluating the Species Selections of Our Panelists.

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.

One pesticide contact hour for categories 29, 35, 36, and Applicators License pending. ISA, SAF, CFE, MCA, MCH, MCLP, CTSP credits have been requested.

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, eweeks@umext.umass.edu.

Snow Mold Research Field Days

Late winter - Early spring, 2019

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.umass turf.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) 892-0281, or online at <http://ag.umass.edu/turf>.

Spring Kickoff for Landscapers: UMass Extension Landscape Education Day

March 28, 2019

9:00 am - 3:30 pm

Location: TownPlace Suites, 50 Rosebrook Place, Wareham MA

Sustainable landscaping uses multiple management strategies that seek to reduce negative impacts on the environment while maintaining aesthetically pleasing landscapes. Learn about effective pest management strategies and practices that provide beautiful and environmentally friendly landscapes for your customers. Topics include: updates about winter moth and gypsy moth and successes with using biological control; attracting birds in designed landscapes; effective strategies for managing landscape weeds; and taming the top 10 troublesome diseases of woody landscape plants.

Four pesticide contact hours for categories 29 & 36 and Applicators License available. ISA, MCA, MCH, MCLP and AOLCP credit requested.

Preregistration required as space is limited; the cost is \$110 or \$99 per person for three or more registrations from the same company (10% discount), includes lunch. 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.

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 3 series of 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

Employee Training for Garden Retailers

Date & Location: TBA

A full day educational program for garden centers, horticultural retailers, roadside stand employees and master gardeners to learn research based information for answers to your customer questions.

For more information, go to ag.umass.edu/greenhouse-floriculture or contact Geoffrey Njue (781) 891-0650, Ext. 12, gnjue@umext.umass.edu or Jason Lanier at (413) 545-2954; jdl@umass.edu.

Ticks and Tick-Associated Diseases Conference

April 24, 2019

8:30 - 3:30 pm

Location: Doubletree Hotel, Milford, MA

Landscapers, arborists, tree wardens, turf managers, grounds managers, and any professional working in outdoor environments runs the risk of encountering, being bitten by, and contracting a tick-associated disease from multiple tick species in Massachusetts. Speakers will discuss what is currently known about tick and tick-associated diseases in Massachusetts and surrounding states, habitat and winter survival of ticks, personal protection, and the management of ticks in landscapes.

Five pesticide contact hours for category 29, 35, 36, 37, and Applicators License available; Three pesticide contact hours for category 40. ISA, MCA, MCH, MCLP and AOLCP credits have been requested.

Preregistration required as space is limited; the cost is \$95 or \$86 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, Weeds, Insects, Cultural Problems

April 29, 2019

4:00 - 6:00 pm

Location: UMass Amherst

- Diseases and Weeds

May 10, 2019

4:00 - 6:00 pm

Newton Cemetery, Newton Centre, MA

Get some hands-on experience scouting and identifying landscape diseases, insects, weeds, and abiotic problems. Join Randy Probstak, Extension Weed Specialist; Nick Brazeo, Extension Plant Pathologist; and Rick Harper, UMass Extension Professor of Urban and Community Forestry, 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 pest and cultural problems of woody ornamentals. Dress for walking; workshops held rain or shine. Bring a clipboard, pencil and hand lens if possible.

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

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

Weed Walkabout

June 19, 2019

4:00 - 6:00 pm

Location: Walpole, 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 Probstak, 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 available. ISA, MCA, MCH, MCLP and AOLCP credit requested.

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

2018 Summer Trial Garden Tour and Education Program

Date and location TBA

Full day educational program for greenhouse and floriculture businesses. Sponsored by the UMass Extension Greenhouse Crops and Floriculture Program.

For more information, go to ag.umass.edu/greenhouse-floriculture or contact Geoffrey Njue (781) 891-0650, Ext. 12, gnjue@umext.umass.edu.

Ornamental Tree and Shrub ID and Insect Walk

June 12, 2019

2:00 - 4:00 pm

Location: Tower Hill Botanic Garden, Boylston, MA

Studying for the MCH, MCLP, or MCA exam? Want some hands on experience identifying significant landscape plants to expand your palette of offerings for your clients while also scouting for potential insect problems? Join Tawny Simisky, Extension Entomologist, and Mandy Bayer, Extension Assistant Professor at UMass Amherst, for a walk around the grounds at Tower Hill. This will be the perfect time of year to 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 available. ISA, MCA, MCH, MCLP and AOLCP credits have been requested.

Preregistration required as space is limited; the cost is \$50 or \$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 and Turf Weed Topics - You Pick!

June 25, 2019

9:00 am - 12:30 pm

Location: Radisson Hotel, Chelmsford, MA

Landscape and turf professionals commonly seek information about the latest and most effective best management practices for the pests they encounter. For this special topics session, attendees can submit weed related topics they would like to have discussed (ex. the management of a challenging weed, a new herbicide product, cultural practices, etc.).

Three pesticide contact hours for categories 36, 37, and Applicators License available. MCA, MCH, MCLP and AOLCP credit requested.

Preregistration is required, as space is limited; the cost is \$75 or \$68 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.

UMass Turf Research Field Day

July 17, 2019

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

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.

Landscape and Forest Tree and Shrub Disease Workshop

September 14, 2019

9:00 am - 3:30 pm

Location: Fernald Hall, University of Massachusetts Amherst

Join Nick Brazee, UMass Extension Plant Pathologist, for this workshop where participants will gain hands-on experience with many important landscape and forest diseases of trees and shrubs. The UMass Amherst campus offers a wide variety of ornamental and forest trees and shrubs of all ages. Selected diseases will range from leaf spots, needle casts, root rot, stem cankers, rusts, anthracnose and more. An introductory lecture will review the basics of diagnostic plant pathology followed by a walking tour of campus. The day will end with a laboratory session using microscopy to view prepared slides.

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

Preregistration is required, as space is limited; the cost is \$150. 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.

Invasive Insect Certification Program

Part 1 - October 17, 2019

Part 2 - October 31, 2019

Part 3 - November 14, 2019

9 am - 2:30 pm

Location: The Publick House, Sturbridge, MA

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.

Participants may receive a certificate in INVASIVE INSECT MANAGEMENT upon the successful completion of all three sections and a passing score on associated online quizzes following each class. Participants not interested in a certificate may also attend all three days, or individually, without taking the associated quiz. Attendees are encouraged to take all three sessions in one season to get the most out of the information.

Part 1: The Impacts and Costs of Invasive Insects: 9:00 AM – 2:30 PM. Four pesticide contact hours for categories 35, 36, and Applicators License available. Association credits requested.

Part 2: Invasive Forest and Agricultural Insects in Massachusetts: Current and Future: 9:00 AM – 2:30 PM. Four pesticide contact hours for categories 35, 36, and Applicators License available. Association credits requested.

Part 3: Management of Invasive Forest and Landscape Insect Pests: 9:00 AM – 2:30 PM. Four pesticide contact hours for categories 35, 36, and Applicators License available. Association credits requested.

Preregistration is required, as space is limited; cost is \$95 or \$86 per person per day 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.

Fall Wrap-Up

Landscape, Grounds & Turf Managers Education Day Special Topics

November 2019 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

December 10-12, 2019

Location: Center of New Hampshire Radisson Hotel, Manchester, NH

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.

Green School

October - December 2020

Twice weekly, 9 am - 3:30 pm

Location: Central Massachusetts - Site TBA

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 based on environmental stewardship. 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 public 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, and are welcome to investigate other tracks in future sessions. Topics will be taught by University of Massachusetts Extension educators and UMass Amherst faculty. Classes are held two days per week from 9:00 a.m. to 3:30 p.m. Green School is offered every other year. The next session will be in the fall of 2020.

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 Mary Owen, UMass Extension Turf Program, at (508)892-0382. 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', then 'E-Mail List.'

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 <http://ag.umass.edu/greenhouse-floriculture/greenhouse-updates> based onsite visits and conversations with growers. As new information is added, an email sends a reminder and provides a direct link. To be added to the email list go to <https://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 logging onto 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. The subscription is free, and it only takes a few moments to get started. For instructions on how to subscribe to the list, 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. Detailed reports from Extension specialists on growing conditions, pest activity, and cultural practices for the management of woody ornamentals, trees, and turf are regular features.

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 information is commonly available 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 24 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 in your inbox when each new message is posted: go to www.umassgreeninfo.org and click on 'Services'. Subscribers also receive advance notice of postings of program agendas and registration information by email. For more information, call (413)545-0895.

• Vegetable Pest Alerts

Subscribe to *Vegetable Notes* 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

• Fruit Pest Alerts

By visiting the UMass Fruit Advisor website (ag.umass.edu/fruit) or by subscribing to *Berry Notes* and *Healthy Fruit*, 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, Mites, etc. Access by going to ag.umass.edu/fruit.

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.

and 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

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 Particle Size Analysis.

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 26.

Plant Nutrient Test (with Nitrogen) - \$45.00; 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. Also included is total Nitrogen by catalytic combustion.

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.

Go to soiltest.umass.edu for a current list of services, pricing and order forms.

UMass 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). 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. If a person has been infected by a tick bite, symptoms may begin to occur even before the results of tick testing are available. **Do not wait for tick testing results before seeking medical advice should any symptoms develop.**

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, 2018	All Counties except: Barnstable, Dukes, Nantucket & Suffolk
Corn (Silage & Grain)	March 15, 2019	All Counties
Cranberries	November 20, 2018	Barnstable, Bristol, Middlesex, Nantucket, Norfolk & Plymouth
Cultivated Clams	November 30, 2018	Barnstable, Bristol, Dukes, Nantucket & Plymouth
Dairy Revenue Protection	Variable	All Counties
Grapes	November 20, 2018	Bristol
Nursery	May 1, 2019	All Counties
Pasture, Rangeland & Forage	November 15, 2018	All Counties
Peaches	November 20, 2018	Bristol, Essex, Franklin, Hampden, Hampshire, Middlesex, & Worcester
Potatoes	March 15, 2019	Franklin & Hampshire
Sweet Corn	March 15, 2019	All Counties except: Dukes, Nantucket, & Suffolk
Tobacco	March 15, 2019	Franklin, Hampden, & Hampshire
Whole Farm Revenue Protection	March 15, 2019	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)

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



2018

Nov 7-8 Northeast Greenhouse Conference Boxborough
 Nov 27 Fall Wrap-Up for Landscape, Grounds & Turf Managers Hadley

2019

Jan TBA New England Vegetable & Berry Growers' Association Winter Meetings TBA
 Jan 7-Feb 15 UMass Winter School for Turf Managers Amherst
 Jan 9 Greenhouse Production 2019 - Focus on Pest Management Marlborough
 Jan 30 Cranberry Management Update Plymouth
 Jan-Nov Pesticide Applicator License Exam Training various
 Feb 5 Winter Flower Growers Program Peabody
 Feb TBA Mass Aggie Seminars various
 Feb TBA New England Vegetable & Berry Growers' Association Winter Meetings TBA
 Feb 7 Spotted Lanternfly Preparedness Conference Milford
 Feb 13 TickTalk with TickReport! Webinar Series - Ticks and Personal Protection Online
 Feb 19 Invasive Plant Certification Program (Part 1) Milford
 Mar TBA Mass Aggie Seminars various
 Mar 5 40th Annual UMass Community Tree Conference Amherst
 Mar 13 TickTalk with TickReport! Webinar Series - Deer Ticks & Associated Diseases Online
 March 14 Invasive Plant Certification Program (Part 2) Milford
 Mar 19 Invasive Plant Certification Program (Part 3) Milford
 Mar 28 Spring Kickoff for Landscapers Wareham
 Apr TBA Employee Training for Garden Retailers Eastern MA Location TBA
 Apr TBA Fruit Twilight Meeting TBA
 Apr TBA Mass Aggie Seminars various
 Apr TBA Snow Mold Research Field Days TBA

Apr TBA	Employee Training for Garden Retailers	TBA
Apr 9	Invasive Plant Certification Program (Part 4)	Milford
Apr 10	TickTalk with TickReport! Webinar Series - 2018-2019 Tick Updates	Online
Apr 24	Ticks and Tick-Associated Diseases Conference	Milford
Apr 29	Landscape Pests and Problems Walkabout - Diseases, Weeds, Insects & Cultural Problems	Amherst
May TBA	Fruit Twilight Meeting	various
May TBA	Mass Aggie Seminars	various
May 8	TickTalk with TickReport! Webinar - American Dog Ticks & Lonestar Ticks	Online
May 15	Landscape Pests and Problems Walkabout - Diseases & Weeds	Newton Centre
Jun TBA	Fruit Twilight Meeting	various
Jun 12	Ornamental Tree and Shrub ID and Insect Walk	Boylston
Jun 19	Weed Walkabout	Walpole
Jun 25	Landscape and Turf Weed Topics - You Pick!	Chelmsford
July TBA	2019 Summer Trial Garden Tour and Education Program	TBA
July TBA	Vegetable Twilight Meeting	TBA
July 17	UMass Turf Research Field Day	South Deerfield
July TBA	Vegetable Twilight Meeting	TBA
Sept 14	Landscape and Forest Tree and Shrub Disease Workshop	Amherst
Oct 9	TickTalk with TickReport! Webinar Series - 2019 Tick Updates	Online
Oct 17	Invasive Insect Certification Program - Part 1	Sturbridge
Oct 31	Invasive Insect Certification Program - Part 2	Sturbridge
Nov TBA	Fall Wrap-Up - Landscaper Education Day Special Topics	Amherst
Nov 14	Invasive Insect Certification Program - Part 3	Sturbridge
Dec 10-12	New England Vegetable & Fruit Conferene & Trade Show	Manchester, NH

2020

Oct - Dec

UMass Green School

Central MA Site TBA

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.....	\$25
Nematode assay all other crops except turf	\$50
Turf disease analysis.....	\$75
Turfgrass ID.....	\$25
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**, (413)545-3209, madeiras@umass.edu

Dr. Robert Wick, (413)545-1045, rlwick@umass.edu

Contact Angela Madeiras (413)545-3209 or Geoffrey Njue (781) 891-0650 Ext. 12 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 28 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 Extension 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

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:

<u>Location</u>	<u>Part(s) Affected</u>	<u>Symptoms</u>	<u>Symptom Distribution</u>	<u>Soil Type</u>	<u>Soil Moisture</u>	<u>Irrigation</u>
Container	Roots	Wilted	Scattered	Soiless	Wet	Overhead
Field	Crown	Yellowed	Localized	Soiless/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**, (413)545-3209, madeiras@umass.edu
Dr. Robert Wick, (413)545-1045, rlwick@umass.edu

Contact Angela Madeiras (413)545-3209, Katie Campbell-Nelson (vegetables) (413)545-1051, 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 28); for fruit, include the completed *Fruit Diagnostic Form* (page 30). 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 28 (vegetables) or 30 (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 Extension 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 – Lab 3, French Hall, 230 Stockbridge Road – Amherst, MA 01002
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:

<u>Location</u>	<u>Irrigation</u>	<u>Site Condition</u>	<u>Soil</u>	<u>Drainage</u>	<u>Symptoms</u>	<u>Part Affected</u>
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, WEED AND GRASS IDENTIFICATION

Contact: Dr. Nick Brazee, (413)545-2826, nbrazee@umass.edu

How to Send Samples of Tree & Shrub Material, Insects, & Weeds or Grasses

Please submit samples based on the following guidelines for tree and shrub diseases, insect identification, and weed identification, using the form on page 32 or 33. 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 Extension 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:

<u>Location</u>	<u>Irrigation</u>	<u>Site Condition</u>	<u>Soil</u>	<u>Drainage</u>	<u>Symptoms</u>	<u>Part Affected</u>
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.

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 – 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: 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:

<u>Location</u>	<u>Site Condition</u>	<u>Soil</u>	<u>Drainage</u>	<u>Distribution</u>
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 _____

TURF DISEASE DIAGNOSTICS & NEMATODE ASSAYS

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

Dr. Robert Wick, (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 36 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. 36

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**, (413) 577-1738, rprostak@umass.edu

Fill out the *Weed Diagnostic Form* (page 33) as completely as is feasible, following the guidelines on page 35. 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**, (413) 577-1738, rprostak@umass.edu

Depending on the site, fill out the *Weed Diagnostic Form* (page 33) or the *Turf Diagnostic Form* (page 36) 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**, (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 Form (page 37) as completely as possible. Forms are also available online at ag.umass.edu/diagnostics.

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 _____

THE FOLLOWING SECTIONS WILL BE COMPLETED BY DIAGNOSTIC LAB:

Nematodes per 100 cc:					
<i>Cricanemoides</i> (ring)	_____		<i>Meloidogyne</i> (root-knot)	♂: _____	♀: _____
<i>Heterodera</i> (cyst)	♀: _____	♀2: _____	<i>Pratylenchus</i> (lesion)	_____	_____
<i>Helicotylenchus</i> (spiral)	_____	_____	<i>Tylenchorhynchus</i> (stunt)	_____	_____
<i>Hoplolaimus</i> (lance)	_____	_____		_____	_____
<i>Longidorus</i> (needle)	_____	_____		_____	_____
<input type="checkbox"/> specimen insufficient for diagnosis			<input type="checkbox"/> 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 Extension 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

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:

<u>Location</u>	<u>Part(s) Affected</u>	<u>Symptoms</u>	<u>Symptom Distribution</u>	<u>Irrigation System Type</u>	<u>Water Source</u>
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/eea/agencies/agr/pesticides/pesticide-examination-and-licensing.html. 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.

Pesticide Applicator License Exam Training

Workshops are from 8:45 a.m. to 4:30 p.m. each day. Preregistration is required, as space is limited. Workshops held in Marlborough, Milford, Newton, East Wareham, Nantucket, Springfield, and Amherst. 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 refer to the website www.umass.edu/pested and select “Training Workshops to Prepare for the Exams” in the left column. Tentative dates and locations for 2019 are:

Best Western Royal Plaza, 181 Boston Post Road W, Marlborough MA 01752

January 24 & 25, 2019; February 7 & 8, 2019; March 7 & 8, 2019; March 14 & 15, 2019; April 11 & 12, 2019; April 30 & May 1, 2019; June 5 & 6, 2019; September 25 & 27, 2019; October 23 & 25, 2019; November 20 & 22, 2019.

Doubletree by Hilton, Milford, MA

January 31 & February 1, 2019; February 20 & 21, 2019; February 28 & March 1, 2019; March 28 & 29, 2019; April 25 & 26, 2019; May 15 & 16, 2019; July 17 & 18, 2019; August 14 & 15, 2019; September 4 & 6, 2019.

UMass Mount Ida, Newton, MA

June 19 & 20, 2019; July 31 & August 1, 2019

UMass Cranberry Station, East Wareham, MA

February 14 & 15, 2019; April 9 & 10, 2019

UMass Research Station, Nantucket, MA

April 4 & 5, 2019

Springfield Technical Community College, Springfield, MA

February 12 & 22, 2019; April 16 & 19, 2019

Amherst, MA TBA

March 5 & 6, 2019; May 7 & 8, 2019

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/eea/agencies/agr/pesticides/pesticide-examination-and-licensing.html. 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.

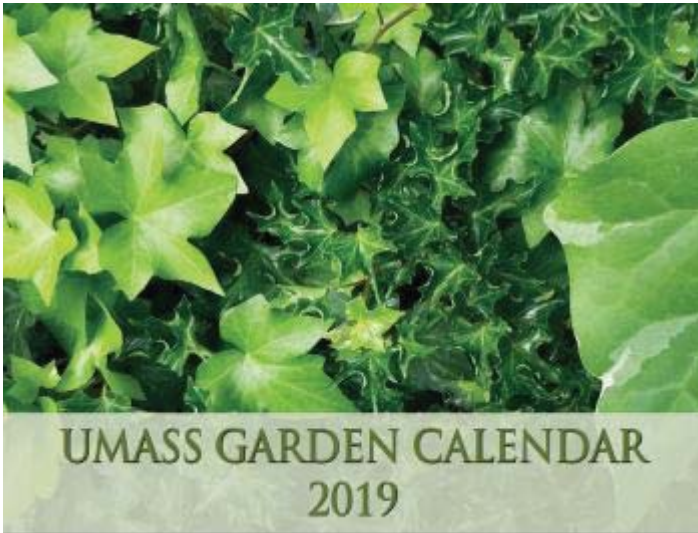
UMass Extension Pesticide Recertification Workshops

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 reduce and mitigate 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 2019. 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

Gardening is enjoyed by so many people - it can ease stress, keep you limber, and even improve your mood! To help keep your plants healthy, productive, and beautiful, the 2019 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.
- * Low gloss paper for easy writing.

COST: \$14 (bulk pricing is available on orders of 10 copies or more to the same address)

Our 2019 calendar continues UMass Extension's tradition of providing gardeners with useful information to help make sound choices about growing, planting and maintaining plants in their landscapes, including vegetables, backyard fruits, and ornamental plants. This year's calendar features the use of tomography to identify internal decay in mature trees that do not yet show any visible symptoms of damage, making it difficult to assess their potential risk in urban and suburban settings.

Go to umassgardencalendar.org to see images from this year's calendar, online ordering information, the chart for bulk discounts, and a printable order form.

To have an order form mailed to you, call UMass Extension at (413) 545-0895 (info only, we can't take orders over the phone).

UMass Garden Calendar PHOTO CONTEST

Ever take a great garden photo and think "this would be perfect for the UMass Garden Calendar?"

We're holding a photo contest for the 2020 UMass Extension Garden Calendar, so have your camera handy and keep an eye out for contest-worthy pics!

The deadline for submitting pictures is April 1, 2019. Find submission details at ag.umass.edu/landscape/publications-resources/garden-calendar/garden-calendar-photo-contest

PUBLICATIONS Available from UMass Extension

Visit Extensionsalesportal.org to purchase the following publications online.

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

Floriculture, Fruit and Vegetables

Cranberry Chart Book: Management Guide for Massachusetts

Free Online

<http://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.

Greenhouse Pest Management Smart Phone Web Apps

Free Online

<http://greenhousepestguide.umass.edu/> and <http://greenhousediseaseguide.umass.edu/>

Two smartphone optimized Greenhouse Pest Management web-based apps for commercial growers of greenhouse crops and flowers, one for insect & mite pests, and one for diseases. Partial support for this project was provided by the New England Florist Association Floriculture Applied Research Fund. For questions or comments about these apps, contact: Jason Lanier at 413-545-2965 or jdl@umass.edu

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 - www.negreenhouseupdate.info

Free Online

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. Available from the Extension Bookstore.

New England Tree Fruit Management Guide

Price: N/A Online Only

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 cherries. 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-chemical pest control measures are included. Whenever possible, the use of Integrated Pest Management (IPM) practices is encouraged. Organic and bio-intensive methods are also discussed. This is an important reference resource for tree fruit growers around New England. Revised continuously online at <http://netreefruit.org/>.

New England Vegetable Management Guide

Price: \$25.00

Northeast Pest Identification Guide

Price: \$15.00

Together:

Price: \$35.00

New England Vegetable Management Guide and Northeast Pest Identification Guide

The *New England Vegetable Management Guide* is a 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 (\$15) 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. Available from the Extension Bookstore.

Nutrient Management Guide for New England Vegetable Production

Free Online

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. Available as a free download at ag.umass.edu/vegetable under 'Publications'.

Pruning Fruit Trees In the Home Orchard

Price: \$5.00

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

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. Available online at ag.umass.edu/vegetable under 'Publications'.

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. Available from the Extension Bookstore.

Landscapes

Professional Management Guide for Diseases of Trees and Shrubs

Free Online

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

Turf

Best Management Practices for Lawn & Landscape Turf

Free Online

UMass Extension has recently developed a 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. Online at ag.umass.edu/turf, click 'Publications & Resources, then 'Best Management Practices'.

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. Available from the Extension Sales Portal at Extensionsalesportal.org.

Professional Guide for IPM in Turf for Massachusetts

Free Online

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

Frequently Used Phone Numbers

UMass Extension

www.umass.edu/agland

Extension Sales Portal	413-545-5227
Floriculture Diagnostics (p.25)	413-545-3209
Fruit Diagnostics (p. 27)	413-545-4347
Pesticide Education Program (p.36)	413-545-1044
Soil Testing Lab (p. 19)	413-545-2311
Tree and Shrub Diagnostics (p.29)	413-545-3208
Turf Diagnostics (p. 32)	413-545-3209
Vegetable Diagnostics (p.27)	413-545-3209

Chemicals

CHEMTREC® For hazardous materials incidents (spills, leaks, fire, exposure, accident) www.chemtrec.com	800-262-8200
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

Agricultural Environmental Enhancement Program (AEEP), Laura Maul laura.maul@state.ma.us	617-626-1739
American Farmland Trust Northampton Julia Freedgood 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 Grown, Great Barrington Barbara Zheutlin	413-528-0041

buylocal@berkshiregrown.org
www.berkshiregrown.org

Board of Registration of Landscape Architects www.mass.gov/dpl	617-727-3072
Cape Cod Cranberry Growers Assoc. Roberto Rubini, President Brian Wick, Executive Director Roberto Rubini, President info@cranberries.org www.cranberries.org	508-866-7878
Cape Cod Landscape Association Diane Johnson, Exec. Director 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 Jean Bonhotal cwmi@cornell.edu www.cwmi.css.cornell.edu	607-255-1187
Dig Safe www.digsafe.com	888-344-7233
Ecological Landscaping Alliance ela.info@comcast.net www.ecolandscaping.org	617-436-5838
Farm Viability Enhancement Program (FVEP) Melissa Adams melissa.l.adams@state.ma.us	413-548-1904
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 Heather Leff heather@newenglandisa.org www.newenglandisa.org	978-844-0441

IPM Institute of North America, info@ipminstitute.org www.ipminstitute.org	608-232-1410	Massachusetts Nursery and Landscape Association www.mnla.com	413-369-4731
Lyle E. Littlefield Ornamentals Trial Garden, Orono, ME Brad Libby blibby@maine.edu umaine.edu/littlefieldgarden/about	207-581-3112	Massachusetts Public Interest Research Group (MassPIRG) info@masspirg.org www.masspirg.org	617-292-4800
Mass Farm-To-School Project Lisa Damon info@massfarmtoschool.org massfarmtoschool.org	413-253-3844	Massachusetts Recreation and Park Association www.massrpa.org	413-568-8356
Mass Farmers Markets, Edith Murnane, Interim Exec. Director info@massfarmersmarkets.org www.massfarmersmarkets.org	781-893-8222	MASSACHUSETTS, STATE OF DEPARTMENT OF AGRICULTURAL RESOURCES (MDAR) www.mass.gov/agr 251 Causeway Street, Suite 500 Boston, MA 02114-2151 John Lebeaux, Commissioner John.Lebeaux@state.ma.us	617-626-1700 (Boston Office)
Massachusetts Agriculture in the Classroom info@massaginclassroom.org www.aginclassroom.org	508-443-1703	• Agricultural Conservation and Technical Assistance, Division of CAFO/AFO: Gerard Kennedy Gerard Kennedy Gerard.Kennedy@state.ma.us	617-626-1733
Massachusetts Aquaculture Association Chris Sherman, President massaquaculture.org	n/a	• Agricultural Environmental Enhancement Grants Laura Maul Laura.Maul@state.ma.us	617-626-1773
Massachusetts Arborists Association info@massarbor.org www.massarbor.org	508-653-3320	• Agricultural Markets, Division of www.mass.gov/agr/divisions Mary Jordan, Director mary.jordan@state.ma.us	617-626-1739
Massachusetts Association of Landscape Professionals info@mlp-mclp.org www.mlp-mclp.org	508-653-3373	Aquaculture: Sean Bowen Export Markets: Bonita Oehlke Economics: Katherine deRonde Farm Composting: Sean Bowen Farm Viability: Melissa Adams Farmers Markets: David Webber Land Use, APR Program: Ron Hall Markets: Rick LeBlanc	617-626-1750
Massachusetts Association of Lawn Care Professionals malcp@yahoo.com www.malcp.org	781-274-7373	• Animal Health: Esther Wegman	617-626-1724 617-626-1753 617-626-1811 617-626-1724 413-548-1904 617-626-1754 617-626-1704 617-626-1759
Massachusetts Audubon Society, www.massaudubon.org	781-259-9500	• Apiary Inspection Service Kim Skyrm, Chief Apiary Inspector, Apiary Program Coordinator Kim.Skyrm@state.ma.us	617-626-1795
Massachusetts Christmas Tree Growers Association www.christmas-trees.org	978-346-4381	• Wetlands Information Resource Ken Chin, Environ. Engineer ken.chin@state.ma.us Jonathan Hobill, Southeast Region	413-548-1905 857-319-1020 617-636-1801
Massachusetts Farm Bureau www.mfbf.net	508-481-4766 866-548-6323	• Crop and Pest Services Taryn Lascola Taryn.Lascola@state.ma.us	617-292-5893 508-946-2700
Massachusetts Flower Growers Assoc. Bob Luczai www.massflowergrowers.com	781-275-4811		617-626-1776
Massachusetts Fruit Growers Assoc. Wesley Autio, Secretary autio@umass.edu www.massfruitgrowers.org	413-545-2963		
Massachusetts Golf Association info@massgolf.org www.massgolf.org	800-356-2201		
Massachusetts Horticultural Society www.massshort.org	617-933-4900		
Massachusetts Maple Producers Assoc. Winton Pitcoff info@massmaple.org www.massmaple.org	413-628-3912		

DEPARTMENT OF AGRICULTURAL RESOURCES (MDAR) continued

- Energy Efficiency, Conservation, & Renewables Program
Gerry Palano
gerald.palano@state.ma.us 617-626-1706
- 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

www.mass.gov/dep 617-292-5500
 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

www.mass.gov/eea 617-626-1000

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 413-733-5357
 Debra Boronski 617-973-8600
 debra.boronski@state.ma.us

PUBLIC SAFETY & INSPECTIONS OFFICE

www.mass.gov/dps 617-727-3200

Massachusetts Tree Wardens & Foresters Association
 Karen Doherty 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 860-489-2385
 1898nepa@gmail.com
 https://neparkassociationct.myrec.com

New England Pest Management Association, Concord, NH 866-386-3762
 www.nepma.org

New England Regional Turfgrass Foundation & New England Regional Turf Conference & Trade Show 401-841-5490
 Gary Sykes, Exec. Director
 www.nertf.org

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

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

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

New England Vegetable and Berry Growers Association 917-573-5558
 Chris Grant, Sec/Treasurer
 secretary@nevbga.org
 nevbga.org

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

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

Northeast Greenhouse Conference 802-865-5202
 Cindy Delaney
 www.negreenhouse.org

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

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

Schumacher Center for a New Economics 413-528-1737
 Susan Witt, schumacher@centerforneweconomics.org
 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) 802-651-8335
 nesare@uvm.edu
 www.nesare.org

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

Toxics Use Reduction Institute, UMass Lowell Michael Ellenbecker ellenbec@turi.org www.turi.org	978-934-3275	• Farm Service Agency Amherst 413-253-4500	413-253-4500
Turfgrass Producers International www.turfgrassod.org	847-649-5555 800-405-8873	• Rural Development 413-253-4300	413-253-4300
United States Golf Association usga@usga.org www.usga.org	908-234-2300	• Natural Resources Conservation Service Christine Clarke, Director 413-253-4350	413-253-4350
<hr/>		Field Offices	
		Barnstable	508-771-6476
		Greenfield	413-253-4500
		Hadley	413-585-1000x100
		Pittsfield	413-443-1776x3
		Westford	978-692-1904x8161
		West Wareham	508-295-5151x7234
		Worcester County	508-829-4477x7020
UNIVERSITY OF MASSACHUSETTS AMHERST		• Resource Conservation & Development Mass. Farm Energy Program Patriot region 413-727-3090 978-692-1904	413-727-3090 978-692-1904
www.umass.edu	413-545-0111	• National Agricultural Statistics Service Gary Keough, Dir. NE Field Office www.nass.usda.gov 603-224-9639	603-224-9639
• Agricultural Experiment Station William Miller ag.umass.edu	413-545-5017	• National Turfgrass Evaluation Program Kevin Morris kmorris@ntep.org www.ntep.org 301-504-5125	301-504-5125
• College of Natural Sciences Tricia Serio, Dean www.cns.umass.edu	413-545-2766	<hr/>	
• Donahue Institute Lynn Griesemer www.donahue.umassp.edu/	413-545-0001	US ENVIRONMENTAL PROTECTION AGENCY (EPA) www.epa.gov	
• Dr. Joseph Troll Turf Research Center James Poro extension.umass.edu/turf	413-665-4360	• Dr. Rob Koethe koethe.robert@epa.gov FIFRA Project Officer - CT & RI School IPM Tribal Pesticide Contact 617-918-1535	617-918-1535
• Environmental Health and Safety www.ehs.umass.edu/	413-545-2682	• Kan Tham tham.kan@epa.gov FIFRA Enforcement Coordinator 617-918-1872	617-918-1872
• Ctr for Agriculture Food & the Env. ag.umass.edu	413-545-4800	• Andrea Szylvian szylvian.andrea@epa.gov FIFRA Project OfficerMA, ME, NH, VT WPS Coordinator Region 1 Agricultural Risk Reduction Program & PESP Contact 617-918-1198	617-918-1198
• Massachusetts Small Business Development Center Georgianna Parkin www.msdbc.org	413-545-6301	<hr/>	
• Poultry: Dr. Michael Darre, UConn	860-486-1008	US FISH AND WILDLIFE SERVICE www.fws.gov Northeast Region 413-253-8200	
• Stockbridge School of Agriculture Wes Autio stockbridge.cns.umass.edu	413-545-2222	<hr/>	
• UMass Extension Agriculture and Commercial Horticulture Program www.umass.edu/agland	413-545-0895	<hr/>	
<hr/>		US FOREST SERVICE www.fs.fed.us 800-832-1355	
US DEPARTMENT OF AGRICULTURE www.usda.gov			
• Agricultural Mediation Program Courtney Breese, Program Dir. Mass. Office of Public Collaboration University of Massachusetts Boston courtney.breese@umb.edu	888-869-1898 617-287-4046		
• APHIS - Animal & Plant Health Inspection Service Kevin Shea www.aphis.usda.gov	844-820-2234		

Information Resources for Home Gardeners

UMASS

2019 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 26)
ag.umass.edu/diagnostics

Soil and Plant Nutrient Testing Laboratory (see page 21)
soiltest.umass.edu

Tick Testing (see page 22)
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
plantinformation@arnarb.harvard.edu
Mon, 1 - 3 pm (617) 524-1718 ext. 6

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

