



Hort Notes[®]

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

Becoming A Successful Commercial Arborist

*H. Dennis P. Ryan, Arboriculture & Community Forestry,
University of Massachusetts Dept. of Natural Resources Conservation*

The University of Massachusetts, the Massachusetts Tree Wardens' and Foresters' Association (MTWFA), and the Tree Care Industry Association (TCIA) are all proud to be celebrating significant anniversaries in 2013. The Massachusetts Agricultural College, founded in 1863, will celebrate its 150th anniversary as the University of Massachusetts; the MTWFA celebrates its 100th and TCIA 75 years. Each of these organizations has contributed to the profession of arboriculture and community forestry in their own way. In the case of the TCIA, it has been 75 years of service to the commercial arborist of North America.

I started working with the National Arborist Association, now TCIA, in 1976. Bob Felix was the Executive Director at that time. He introduced me to the advantages of being a member. As an individual, I cannot join TCIA. Only a commercial tree care company can be a member. I believe that each arborist should be a member of both a local association and a national association. The local association for commercial arborists in Massachusetts is the Massachusetts Arborist Association (508-653-3320, www.MassArbor.org), an excellent association that monitors what is happening in Massachusetts for its commercial members.

But as we all know, what is happening in Washington, DC can have a major effect on how we work in the USA. TCIA is the key association for commercial arborists, monitors Washington (DOT, EPA, OSHA), and trains it's members on how to comply with these regulations.

TCIA Membership Benefits

- ANSI Standards – A300 & Z133
- Business Management Guide
 - Forms, templates, policy samples, business plan model

- Reference materials including the pocket safety guides
- Continuous information with 3 monthly newsletters
 - Management, technical/safety, industry
 - Member benefit of the month items – useful tools adaptable to member operations
 - Social media connections
- Training programs and modules to fill compliance niches or form your entire program
 - Self-study or in-house crew use at discounted member pricing
- Discounted registrations for TCIA events and programs
- Mentor/advisor access
 - Peer connections for deeper background on big decisions
- TCIA.org
 - Training Center
 - Publication archives
 - Member directory
 - Job board
- Treecaretips.org
 - Consumer awareness building
 - Lead generation
- Wage and benefits survey
- Regulatory and governmental affairs
 - Advice on OSHA situations
- Affinity partner dues credits

TCIA membership benefits extend to all of the member's employees. For example, crew leaders can access archived *TreeWorkers* for crew meeting content. Office managers

Monitoring Checklist for July

V24,#7 July 2013

PLANT PHENOLOGY: BETWEEN 1000 - 1199 GROWING DEGREE DAYS

BEGIN BLOOM		FULL BLOOM		END BLOOM	
<i>Buddleia davidii</i> (Butterfly-bush) <i>Oxydendron arboreum</i> (Sourwood)		<i>Koelerutera paniculata</i> (Goldenrain Tree) <i>Rhus typhina</i> (Sumac)		<i>Sambucus canadensis</i> (Elderberry) <i>Cornus kousa</i> (Korean Dogwood - bracts)	
PLANT	PEST OR PROBLEM	GDD OR ENVIRONMENTAL CONDITIONS	WHAT TO LOOK FOR	WHAT TO DO	
Many species of viburnum	Viburnum Leaf Beetle <i>Pyrrhalta viburni</i>	GDD: 1150 – 2600 (approx.) for the adult beetles	Larvae were active from soon after bud-break until late May/early June, then moved to the soil to pupate after much defoliation. Affected viburnums now display leaves with many holes or are completely defoliated. Eastern parts of the state that experienced high numbers of winter moth caterpillars may see similar damage on the same plants from that pest. Adult beetles appear starting in mid-July and will continue until the first fall frost. Adult feeding activity capable of defoliating host plant a second time in same growing sea-son. Female beetles chew pits along terminal twigs, lay eggs within the pits, then cover the pits with excrement that dries to give a raised appearance; the affected stem usually dies.	Inspect for damage from the larvae. If extensive, then expect large numbers of damaging adult beetles. Treat adult beetles with a pyrethroid insecticide. Cornell suggests that soil applied imidacloprid in early July can supply sufficient season-long management of the adult beetles. Inspect for stems with eggs; remove and destroy these stems.	
Oak (<i>Quercus</i>) species, but red/black oak subgroup	Oak Leaf Blister <i>Taphrina caerulescens</i> (fungus) pp. 4-6	Spores survive the winter in cracks in the bark, on bud scales, and on fallen leaves. Cool, wet weather when buds open allows spores to germinate and infect newly emerging leaves. Mature, fully expanded leaves are resistant to infection.	Rounded, pale green bulges develop on upper leaf surfaces (grayish on the lower surface) soon after infection. Taphrina produces hormones that induce infected leaf cells to enlarge and multiply, while adjacent, healthy tissue remains flat. As the fungus grows in leaf blisters, it parasitizes these areas of the leaf for sustenance, which kills them, and they turn gray-brown. Premature leaf loss can occur.	Trees may look unsightly but the impact of oak leaf blister on overall vigor is minimal. Reduce inoculum available to cause infections next spring by collecting leaves as they drop. If there was a severe outbreak this year, high value trees may also benefit from a dormant fungicide application as buds swell (just before leaves appear) next spring.	
Ornamental apple and crabapple (<i>Malus</i> spp.) and eastern redcedar (<i>Juniperus virginiana</i>)	Cedar-apple rust <i>Gymnosporangium juniperi-virginianae</i> (fungus) pp. 260-262	In spring, orange, jelly-like fruiting structures erupt from small, round galls on infected junipers. In wet periods, wind-borne spores infect apple leaves. Leaf spots on apple appear reddish-orange (sometimes w/ yellow margins) and hair-like tendrils develop on leaf undersides. Over the summer, leaf spots enlarge. From mid-summer to fall, spores from leaf spots are blown from apple leaves and infect green shoots and needles of junipers.	Leaf spots on apple first appear by late spring, but are often small in size and may not attract attention. By mid-summer, the leaf spots have enlarged and tiny yellow-white tendrils extend from the underside of infected leaves. Brown galls up to 2" in diameter appear on susceptible juniper needles and twigs during the fall, winter and spring, 12-20 months after infection. Orange jelly-like horns grow out of the galls in mid-spring, but only after successive days of rain. Do not grow susceptible junipers close to apples if trees are high-value ornamentals.	Attracts considerable attention, but only rarely causes considerable harm to either apples or junipers. Spores can travel several miles, making it very difficult to manage in landscapes. If both hosts are present at the site, removal of one can reduce disease incidence but may not eradicate. Rust-resistant varieties of apple/crabapple and juniper are available. Galls on juniper can be pruned out in summer, fall and winter (before jelly-like horns form in spring). Fungicide application not recommended because the disease is primarily cosmetic.	

The page numbers in the second column, after the pest, refer to the texts *Insects That Feed on Trees and Shrubs*, 2nd ed., Johnson and Lyon, and *Diseases of Trees and Shrubs*, Sinclair, Lyon and Johnson, Cornell University Press. These references provide color photos and more detailed information on the specific problems.

Bob Childs, Extension Entomologist
Nick Brazee, Extension Plant Pathologist

can use forms and record's tools on the BMG. Owners and general managers can tap into mentors and advisors on strategic decisions.

TCIA also offers memberships for vendors, service providers, and manufacturers, plus tree care services outside of the USA. A program is also available for non-commercial arborists such as those at utilities and municipalities. If you are a commercial arborist and not

a member of TCIA, then it is costing you money and information that you need to be more successful.

For additional information:

Tree Care Industry Association
136 Harvey Road, Suite 101
Londonderry, NH 03053
Tel: 800-733-2622; **Fax:** 603-314-5386
www.treecareindustry.org

Beneficial Insects and Mites from the Greenhouse to You

Tina Smith, UMass Extension, Greenhouse Crops and Floriculture Program

Many greenhouses that grow flowering plants for sale in Massachusetts are using many different beneficial insects and mites to manage pests. Beneficial insects and mites are good bugs that feed on plant pests in the greenhouse. There are three types of beneficials used in greenhouse production, predators, parasitoids and pathogens.

- **Predators** are insects and mites that feed on pests but do not reproduce in them. They eat more than one pest as they develop throughout their life cycle to adults. Predators are less host-specific than parasitoids and often deposit their eggs near pests so when they hatch, there is a food source nearby. Minute pirate bugs, aphid predatory midge, predatory mites, rove beetles and lady beetles are used in greenhouses.

Examples of predators that you would find outdoors in gardens are lady beetles, ground beetles, lacewings, minute pirate bug, hover fly, aphid predatory midge, Tachinid fly, and many spiders (crab spider, jumping spider, wolf spider).

- **Parasites** are insects that deposit eggs in or on a pest. The parasite develops in the pest and kills it. The adult parasite emerges from the pest and the cycle continues. Parasitoids are very host-specific and eat only a single pest as they develop. Parasitoids are commonly used in greenhouses to kill whiteflies and aphids. Female wasps have an ovipositor that allows them to deposit eggs on or in a host body. They also have a narrow "waist" which allow their abdomens to be highly flexible. While the size of parasitoids is quite variable, the ones used for greenhouse pests are very small.

Examples of parasitoids found outdoors in gardens are Braconid wasp that kills aphids and caterpillars and

Ichneumonids that feed on armyworms and European corn borer. Next time you see aphids on a plant, look carefully. You are likely to see tan, puffy aphid bodies that have been eaten by a Braconid wasp. One adult wasp emerges from each of the parasitized aphids, leaving an exit hole and an empty body. The puffy bodies look like a popcorn kernel.

- Growers of greenhouse crops also use **pathogens** that are organisms that cause a fatal disease in pests. They are beneficial pathogens that include fungi, bacteria and viruses which do not harm plants or people. Pathogens are mixed with water and sprayed on the insects pests on the plants and the insects eventually die.

Beneficial insects and mites are packaged in plastic bottles, cardboard tubes or in little sachets the size of tea bags and shipped overnight by commercial companies. The growers release them into the greenhouse as soon as they arrive. Most are distributed throughout the greenhouse by sprinkling them around by hand. Sachets that contain predatory mites are often used in hanging baskets. Beneficial nematodes are mixed with water and drenched into the soil where the nematodes can infect the immature stage of fungus gnats. Some types of beneficial insects used in greenhouses already live here in Massachusetts, while others do not and will die over the winter.

Beneficial insects used in greenhouses will not bite or sting humans and most are so small that an untrained eye would not know they were there.

In addition to beneficial insects and mites, yellow sticky cards are used to monitor pest activity in greenhouses. Yellow is attractive to adult flying insects in greenhouses,

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SUMMER CONFERENCE AND TRADE SHOW

July 25, 2013 - 8:30 am to 2:30 pm • Location: Tower Hill Botanic Garden

Sponsored by the Massachusetts Nursery Landscape Association, Massachusetts Flower Growers Association, and University of Massachusetts Extension.

Join Massachusetts' largest green industry associations for their annual collaborative event and take advantage of the newest ideas and cutting edge information, tours of the Tower Hill Botanic Garden, trade show, networking and great food! Topics include making sense of soil tests, bringing back bees, underutilized perennials, HWA resistant hemlocks, pending regulations, new annuals, creative marketing, sustainable water management, risk management, and an IPM walkabout.

Featured Keynote speaker: Dr. Bethany Bradley, UMass Amherst for an eye opening look at climate change and implications for Massachusetts horticulture.

Register online or download a flyer at www.mnla.com

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which are then caught onto the sticky substance on the card. The grower can then count adult flying insects such as fungus gnats, shore flies, whiteflies and thrips that they find on the sticky cards each week to keep track of pest populations.

So, if you purchased a plant that has a little tea bag packet in it (they are not placed in every plant), or see a puffy tan aphids, it is because the grower you purchased the plants from is using beneficial insects and mites to manage pests in their greenhouse and in your garden!

For a resource to identify beneficials found in gardens, go to www.ipm.msu.edu/biocontrol

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