Landscape IPM Advisory

Weekly Pest Update for Woody Ornamentals, Utah State University Extension, **May 8, 2008**

What's In Bloom
(Salt Lake City area)

Bradford pear: bloom - end bloom
Common lilac: begin bloom
Crabapple: begin bloom
Horsechestnut: begin bloom
Japanese flowering cherry: end bloom
Kwanzan cherry: full bloom
Mahonia: bloom
Purple flowering plum: full bloom
Quince: full bloom
Redbud: full bloom
Sand cherry: full bloom
Saucer magnolia: end bloom
Serviceberry: bloom - end bloom
Spirea (bridalwreath): begin bloom

Insect/Disease Information

DECIDUOUS TREES

Lilac/Ash Borer

Whitney Cranshaw, Colorado State University, Bugwood.org

Larvae of lilac/ash borer feed in the wood of green and white ash trees primarily, but also common lilac and privet. A severe infestation can kill trees, while general feeding causes branch dieback and can leave trees susceptible to breakage in storms.

It overwinters as a larva within the tree and pupates in spring. It emerges as a clearwing moth when common lilac is in full bloom (mid to late May) and continues emergence for about 6 weeks. Adults mate soon after emergence and lay eggs within 10 days on the bark of host trees.

Healthy plants are most likely to withstand minor infestations. Stressed plants are this pest's primary target. Once larvae are feeding within the tree, there is little that can be done. For chemical control, the best option is to target the adults.

There is a pheromone lure that can be used in a trap to help determine the exact timing of emergence. Watch this advisory for announcement of first flight. Materials should be applied 7 days after first emergence.

Treatment: Permethrin (Astro, Covert, Hi-Yield, Waylay), or bifenthrin (Onyx)

Honeysuckle Witches' Broom Aphid

Nymphs of this introduced pest (*Hyadaphis tataricae*) are actively feeding on the terminals of tatarian and other varieties of honeysuckle. Their feeding slows plant growth and causes

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latent buds to open at the terminals, resulting in excessive, stunted growth. They also cause severe curling and cupping of the foliage. Continued feeding over several years results in death.

This aphid is difficult to control, and shrub replacement with non-susceptible varieties ('Arnold's Red,' 'Emerald Mound,' etc.) or with a different species of shrub might be the best option.

Treatment: Pruning the terminals can remove colonies and eggs, but will not completely control this insect. Insecticides include the systemic acephate (Orthene, Bonide, Isotox) or dimethoate. These products, however, are broad-spectrum and are also harmful to beneficial insects.

Cankerworm

Eggs have begun hatching in Weber, Davis, and Salt Lake Counties. These inchworm type caterpillars feed on maples, honeylocust, oak, ash, hawthorn, crabapple, and others.

Treatment: An application of Bt (Dipel) or spinosad (Conserve) beginning May 16 - May 19 will control this insect.

DISEASES

Dothistroma Needle Blight

Susan K. Hagle, USDA Forest Service, Bugwood.org

The Utah Plant Pest Diagnostic Lab has received samples of pine infected with *Mycosphaerella pini*, which causes dothistroma needle blight of pines. In order of most susceptible to least, Austrian, ponderosa, and mugo pines are hosts.

Symptoms include brown needles (often the base of needles remain green), premature needle drop, loss of vigor, and a slow decline. The disease often works its way from the bottom of the tree up. In spring and early summer, an infected tree will have brown interior needles, and infections on the current season's needles will not show browning until fall.

Treatment: Although infections can occur throughout the season, only spring treatments of fungicide (when necessary) are necessary. Use three applications of copper hydroxide (Kocide), copper hydroxide/mancozeb (Junction, Mankocide) or copper salts (Bonide, Camelot), at budbreak and twice again at 10- to 14-day intervals.

Production Information

Insecticide Classes

Insecticides are broken into groups, or "classes" by mode of action. "Mode of action" is how an insecticide works to kill a pest, i.e., what it specifically targets on the insect. For example, some insecticide classes kill insects by inhibiting cholinesterase production while another may kill by blocking the central nervous system.

It is becoming increasingly important to understand to which insecticide class your material belongs so that you can play an active role in preventing resistance. When chemicals from the same insecticidal class are used routinely on a target pest, there is a high likelihood that a few individuals will survive. Those individuals reproduce, and the population of resistant insects increases exponentially as the same chemical class is being used. Alternating insecticides with differing modes of action (not just trade names) prevents this resistance from happening.

The following are some classes of insecticides with examples and modes of action:

1. **Microbials** (*Bacillus thuringiensis*--Dipel, Foray, Javelin). Microbials are disease-causing organisms that kill insects. Bt is the most common, and occurs in a wide variety of subspecies that have also been developed as microbials. Study of new subspecies is continuing. Bt works by producing tiny, protein-filled crystals that degrade the gut lining of the target pest so it starves to death. Bt products must be consumed to be effective, and research is being conducted to find attractive baits to the target pests.

2. **Spinosyns** (spinosad--Entrust, Success, Conserve; spinetoram--Radiant). One of the newest classes of insecticides, this is also one of the safest. These materials are made from metabolic by-products of the bacterium *Saccharopolyspora spinosa*. This class works by disrupting binding of acetylcholine in nicotinic acetylcholine receptors at the postsynaptic cell. Must be ingested to be effective.

3. **Botanicals** (pyrethrum, oils--neem, eugenol, cinnamaldehyde, azadirachtin). Botanicals are toxicants derived from plants and have a variety of modes of actions.

4. **Tetronic Acids** (spirodiclofen--Envidor; spiromesifen--Oberon). This class was introduced in the last few years, targeting a variety of sucking insects including mites. They work by interfering with lipid biosynthesis.

5. **Insect Growth Regulators** (IGR) (pyriproxifen--Esteem; tebufenozide--Confirm; methoxyfenozide--Intrepid; etc.) Insect growth regulators alter growth and development of juveniles. They are fairly safe materials and effective in very low quantities, although some are non-specific. They do not immediately kill the insect, but significantly reduce insect populations over time. Most IGRs work by inhibiting the molting process.

6. **Neonicotinoids** (imidacloprid--Merit, Provado, Admire, Confidor, Imicide, Safari; acetamiprid--Assail; thiomethoxam--Actara; thiacloprid). This is a newer class of insecticides that was first introduced in 1990. They are systemic, and target the central nervous system.

7. **Pyrethroids** (permethrin--Ambush, Astro, Dragnet, Pounce, Torpedo; bifenthrin--Capture, Talstar; lambda-cyhalothrin--Demand, Warrior; cyfluthrin--Baythroid, Laser, Tempo; deltamethrin; esfenvalerate (Asana); tau-fluvalinate (Mavrik); etc.). Pyrethroids are synthetically produced chemicals that are similar to the naturally occurring insecticide, pyrethrum. Production first started in 1949, and has continued over the years, evolving into several "generations." Later generations have very low concentrations of the active ingredient. Pyrethroids affect both the peripheral and central nervous system of the insect. They initially stimulate nerve cells that eventually causes paralysis.

8. **Carbamates** (Sevin, Lannate, Vydate, Ficam). Carbamates are derivatives of carbamic acid and work very similarly to organophosphates. Sevin, the most popular carbamate, has been around since 1956.

9. **Organophosphates** (OP) (Malathion, Acephate, Dimethoate, Imidan, Orthene). These products are derived from phosphorus acids and are among the most toxic materials available. They work by inhibiting the enzyme cholinesterase, causing rapid twitching of voluntary muscles and paralysis.

Degree Days and Pest Monitoring Timeline

Upcoming Monitoring/Insect Activity

Pest	Host(s)	Degree Day Timing (base 50)	Indicator Plant
Birch leafminer	European white, paper, and gray birches	Adults fly at 175-215 DD	Redbud full bloom
Western tent caterpillar	variety of deciduous trees	Eggs begin hatching at 100 DD; inspect plants now	---
Cottonwood leaf beetle	cottonwood, other poplars	Larvae begin feeding at 100 DD	---
Elm leafminer	elms	Adults begin flying at 228 DD	Koreanspice viburnum full bloom
Cankerworm	variety of deciduous trees	Eggs begin hatching at 150 DD	Redbud begin bloom
Forest tent caterpillar	variety of deciduous trees	Larvae begin hatching at 125 DD	Bradford pear full bloom
Pine needle scale	2- and 3-needled pines	Crawlers begin emerging at 277 DD	Horsechestnut full bloom

Current Degree Days (base 50) For more information on degree days, click here.

March 1 - Wednesday, May 8

County	Location	GDD (50)
Box Elder	Perry	144
Cache	North Logan	124
	River Heights	120
	Smithfield	110
Carbon	Price	197
Davis	Kaysville	149
Grand	Castle Valley	418
Salt Lake	SLC	184
	West Valley City	180
Tooele	Erda	168
	Grantsville	234
	Tooele	204

County	Location	GDD (50)
Utah	Alpine	149
	Genola	195
	Orem	157
	Payson	169
	Provo	203
	Santaquin	163
	West Mountain	187
Weber	Pleasant View	158