

What is Happening to the Maples?

In a quick drive around many communities in Montana you will find maple trees with dieback, dead branches and scorched leaves. The first notable symptom is “flagging” – leaves on a branch wilt, develop marginal scorch, and die. With time more branches may develop symptoms. All sizes and ages of trees seem to be affected. Many factors can cause these symptoms. To narrow down possibilities, review the following common problems.

Verticillium wilt is the most likely disease suspect. This fungal disease, like Dutch elm disease, spreads in the water conducting tissues (xylem) of the tree and inhibits water movement. The causal fungus, *Verticillium dahliae*, is a soil-borne fungus that has been widely distributed with the movement of plants and soils. The



Norway maple on MSU campus with flagging and thinning crown.

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host range is extensive including many of the trees, shrubs, vegetables and flowers that we plant in our gardens and landscapes. The disease has both an acute and a chronic phase and perennial

plants may not be symptomatic every year. In the acute phase, dramatic symptoms, often with a sudden onset, develop that include sudden wilting, scorch, early fall coloration, dieback and death. In the chronic phase, part or all of the affected plant may grow poorly. Small, often yellow, leaves; reduced branch elongation; foliar scorching; dieback; and heavy seed production frequently occur. Tree death from *Verticillium wilt* can occur the first season symptoms are noticed or it can take years.



Streaking in sapwood. Paul Bachi, University of Kentucky Research and Education Center, Bugwood.org

To determine if the tree has *Verticillium wilt*, look for green to brown streaks in the sapwood that fre-

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quently appear some distance from the symptomatic leaves and are intermittent throughout the tree. A branch cross section often displays the discoloration in arcs that

planted.

Abiotic conditions such as mechanical damage and winter/frost injury can be confused with *Verticillium*

activities that occurred within the last 5-8 years as these can damage the trunk and root system. Planting too deep, excess water, improper pruning, poor branch architecture, and strong winds can also result in branch and trunk damage.

Winter injury occurs when autumn or spring temperatures drop suddenly resulting in damage to the cambium. Damage from the sudden temperature drop in autumn 2009 caused severe and widespread damage to many species of trees, including maple. When the cambium is killed, growth no longer occurs. The tree dies quickly if damage occurs to the entire circumference of the cambium. However, if only part of the cambium is damaged, the tree may survive but struggle. Winter injury symptoms are similar to *Verticillium* wilt and severe mechanical damage and frequently result in tree decline and death over several years.

Cynthia Kanner, Plant Pathologist



Vascular staining of *Verticillium* wilt on Norway maple (left) and internal discoloration from a fungal canker (right).

follow current or past growth rings.

To limit disease development in infected trees, water well during dry spells and provide a moderate amount of fertilizer keeping the amount of nitrogen low with a slightly higher amount of potassium. Severely infected trees should be removed and a resistant species

wilt. **Mechanical damage** to the trunk, branches or root system can result in similar symptoms. Look closely at the trunk and symptomatic branches for evidence of damage including bark that is missing, discolored or sunken, or has cuts from string trimmers and lawn mowers. Don't forget to consider construction

Cat-faced Spiders a Common Sight in Late Summer

The large webs of the cat-faced spider, *Araneus gemmoides*, are common on porches and in brushy old fields in August and September. Female cat-faced spiders grow unusually large, with balloon-like abdomens. The top of the abdomen is adorned with two ear-shaped cones, and on the rear of the abdomen there are two dark eye-marks impressed into the body surface and faint markings suggesting a muzzle. These features give the spider a reversed appearance. The tail end looks like a bulbous head, with an uncanny resemblance to a cat's face; the true head end is small and in-

conspicuous. Cat-faced spiders are not aggressive. They possess just enough venom to subdue their small prey, rendering them harmless to humans. On the plus side they capture many nuisance insects in their webs.

Ruth O'Neill



The true head end of the cat-faced spider is small, with multiple eyes typical of spiders. Image: Harvey Schmidt

The adult bulbous abdomen of the cat-faced spider looks uncannily like a cat's head. Image: Whitney Cranshaw.

Imprelis Damaged Plants shouldn't be used for Composting or Mulching

The use of the herbicide product labeled 'Imprelis' has resulted in some non-target damage to certain species of evergreen trees in 22 states at 5 – 6,000 sites (Revocation of Imprelis). The active ingredient – 'aminocyclopyrachlor' provides selective broadleaf weed control in turf-grasses on lawns, golf courses, parks, cemeteries, athletic fields, right of ways, wildlife management areas and sod farms. This product was available and used in Montana by applicators since fall 2010 until revocation in August 2011.

This active ingredient persists in soil and plant materials and has resulted in non-target plant damage when present in mulch/compost. Lawn care companies and other commercial applicators shouldn't use grass clippings or damaged

trees as compost. Grass clippings should be left on-site or if local yard waste regulations approve, collected and disposed of as trash.

Other active ingredients related to aminocyclopyrachlor include clopyralid, picloram and aminopyralid. Many cases of non-target plant injury in gardens across Montana have been related to the use of grass-clippings, compost or manure contaminated with products containing these active ingredients. Vendors and homeowners should confirm previous pesticide applications on incoming manure, compost and/or grass-clippings prior to use or further distribution. Applicators should give homeowners or other clients written or verbal warnings as to the restrictions related to

grass-clippings or manure collected from treated locations.

FOR FURTHER INFORMATION CONTACT: For diagnosing if 'Imprelis' herbicide has damaged your trees contact your local MSU Extension Agent or the MSU Pesticide Education Program at (406)994-5067. For conducting a legal investigation or seeking enforcement action contact the Montana Department of Agriculture (406)444-5400. For more information on the revocation of Imprelis, symptomology towards non-target trees or details regarding the product recall see the MSU Pesticide News Release at 'Revocation of Imprelis'.

Cecil Tharp

To read more about problems with Imprelis go to the following link. The article is on Page 3.

http://www.npdn.org/webfm_send/1616 .

Tree mortality in West Virginia linked to herbicide used in the lawn

Mafuz Rahman, Department of Agriculture and Natural Resources and Bill MacDonald, Department of Plant and Soil Sciences, West Virginia University

Coming November 11, 2011

TURFGRASS IPM

Plant Growth Center, MSU
Bozeman, Montana

Includes: labs on turf grass species and weed ID and sessions on insects, diseases and adaptation of turf species in Montana. Commercial and Private pesticide applicator CEUs will be given along with Urban IPM education credits. Watch the Urban IPM web site (www.urbanipm.org) for registration and more information.

Montana State University

Urban IPM Program



The objectives of the Urban IPM Program

- Establish an IPM certification program for urban landscape and turf professionals.
- Develop resources for using IPM methods in the urban landscape.
- Train landscape professionals to be First Detectors for invasive pests.
- Educate homeowners/consumers in the basic principles of IPM.

Linnea Skoglund, Program Coordinator and Newsletter editor.
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This newsletter is funded by a Pesticide Environmental Stewardship Program (PESP) Regional Grants. Established in 1994, the Pesticide Environmental Stewardship Program (PESP) is an EPA partnership program that works with the nation's pesticide-user community to promote Integrated Pest Management (IPM) practices.