

Landscape Diagnostic Guide for Problems Affecting Woody Ornamentals and Herbaceous Perennials

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Introduction

This guide provides information on problems commonly associated with woody ornamentals and herbaceous perennials of the upper Midwest. Detailed information about when and where the problems are observed, signs and symptoms, and treatment methods are included for each problem.

Landscape problems can be caused by living (biotic) or non-living (abiotic) sources. Biotic pests include insects, mites, fungi, viruses, bacteria, and wildlife. Abiotic problems develop from environmental (temperature, wind, moisture), site (soil, compaction), cultural (pruning, mower blight), chemical (spills), or nutritional (excess or deficiency) problems.

Problems Affecting Woody Landscape Plants begins on page 7, while **Problems Affecting Herbaceous Landscape Plants** begins on page 153. Plants within each section are arranged alphabetically by common name. When possible, images of the pest, sign, or symptom are used. In some cases, images specific to the host are not available. In those cases, images are used from different hosts that exhibit similar signs or symptoms.

Landscape diagnostics requires a combination of good observation skills and knowledge of signs and symptoms of common plant problems. Follow the steps listed below to help diagnose a landscape problem using this guide.

- 1. Properly identify the plant in question.** Many insects and diseases affect only specific plants. Knowing the correct name of the affected plant can reduce the number of potential problems that need to be investigated. If misidentified, a wrong diagnosis and treatment may occur. Help in properly identifying plant material can be found at local county Extension offices or garden centers.
- 2. Determine the time of year signs and symptoms of the problem are present.** Temperatures and other environmental factors may slightly delay or advance the timing of problems, but the time of year when problems occur are generally consistent.
- 3. Determine what plant parts are affected.** Often multiple stresses are acting on the plant before plant problems are noticed. Thorough observation of the entire plant is important. Examine both sides of the leaves, branches where the problem is occurring, trunks from the soil line to the first branch, and roots, if possible. The location of the damage on the plant can indicate the severity of the problem. For example, problems that only affect the foliage are usually aesthetic and don't pose major health concerns until complete defoliation occurs. Problems that affect branches, stems, and trunks, where the conducting tissues of a plant are located, tend to be more serious and potentially fatal, such as pine wilt.
- 4. Select the problems that closely match when and where the damage is occurring and read the associated signs and symptoms to see if they match what is observed.** Living and non-living causes typically create different symptoms that can help diagnose problems.

Biotic problems typically:

- have an uneven margin between the affected tissue and healthy tissue
- are randomly distributed
- affect one plant species or related plant species
- progress to related plants nearby

Abiotic problems typically:

- have distinct margins between healthy and affected tissue
- have a pattern to the distribution
- affect more than one species
- do not spread to similar plants nearby

Tools that can be helpful in collecting and recording information on plant signs and symptoms include a hand lens, trowel, knife, hand pruner, camera, paper, and pencil.

5. Read treatment methods and determine a plan of action for this year and/or next year.

An integrated approach to management of landscape problems is recommended. Integrated Pest Management (IPM) is used by many professionals and homeowners to suppress or prevent pests by using multiple control strategies. These control strategies include sanitation (removing plant debris, clean pruners), cultural practices to promote healthy plants (fertilizing, pruning, planting, watering, and mulching), biological practices, host resistance, mechanical methods (hand removal, exclusion, trapping) and chemical applications.

When chemical control methods are used, they can be applied as either preventative or curative applications. Preventative pesticide applications are applied when the environmental conditions and life cycle of the pest are suitable for a pest outbreak, but before any damage has occurred. Curative pesticide applications are made after damage has been observed and are used to limit further damage. Often signs and symptoms of plant problems are observed after the proper treatment period. If the problem is of concern for future years, make notes of timing and location to plan for future treatment.