

Disease management in landscape ornamentals

Plant health and quality take forethought and time but is a necessary step in the protection of our investment in the landscape.

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Landscape ornamentals represent a considerable investment to a property owner. It's much less costly to prevent disease injury to landscape plants than it is to replace them.

Plant selection

Do your homework before purchasing landscape plants. Become knowledgeable in the basics of plant disease i.e. how diseases develop, the common landscape plant diseases in your geographic area, how environmental stress interacts with the host and potential disease threats and the control measures available for combating the various diseases.

Plant selection encompasses two aspects of disease management. One, know your plant material. When plants, not well adapted to a geographic area, are exposed to an inhospitable environment, stress results. Chronic stress in a landscape plant often predisposes it to infection by disease-causing bacteria or fungi. Many of these organisms are opportunists that

have difficulty infecting healthy, vigorously growing plants but can become deadly invaders of stressed plants. If a certain tree or shrub is not adapted to your geographic area, don't put it in the landscape.

In my geographic area of the Great Plains, iron chlorosis is a chronic problem in certain landscape sites and plants because, in our high pH soils, iron is less available. Pin oak, a popular landscape tree, suffers because of iron deficiency. It's difficult to modify the soil with enough organic matter or sulfur to lower the pH and drilling holes in the trunks of chlorotic trees to inject iron is unsightly and may promote internal decay of the heartwood. You can avoid the hassle, expense and problem by simply not planting pin oaks in high pH soils.

Another example of a problem landscape tree in certain geographic areas is sycamore. Sycamore is a beautiful tree but anthracnose is a chronic disease that may greatly detract from the tree's value as a landscape plant. Before you plant sycamore give some thought as

to developing a tree health management plan.

Roses and flowering crabapples are popular landscape ornamentals in both residential and commercial landscapes. When the homeowner or landscape manager selects a variety based only on aesthetics the headaches begin. Black spot and powdery mildew can devastate a rose garden and apple scab, fireblight or cedar apple rust can make your flowering crabapple or hawthorn look far different from that picture in

Correct diagnosis

Correct diagnosis is basic to maintaining plant health, but recognizing an infectious disease on ornamentals can sometimes be difficult. With certain diseases such as tar spot of maple or rust on quaking aspen, symptoms are specific, but with others, such as ash anthracnose, they may be non-specific. Sometimes non-specific symptoms of an infectious disease resemble those of environmental stress making a determination more difficult.



Powdery mildew on rose

the garden seed or landscape catalog. When you plant a disease susceptible variety, you lock yourself into an expensive and time consuming fungicide spray program just to maintain the health and aesthetic value of that plant.

With many of our landscape ornamentals, disease-resistant varieties are available, and by choosing one of these both you and your plant will be much happier.

Cultural practices

► **Fertilization**—Don't promote lush growth with heavy applications of nitrogen. Develop a balanced fertility program.

► **Irrigation**—Provide adequate water for your plants but don't overwater. Avoid overhead irrigation. For trees irrigate at the drip line.

► **Location**—Don't crown



Pine tip blight on Austrian pine

plants. Provide winter and summer protection for sensitive ornamentals.

► **Pruning**—Make pruning cuts in healthy tissue well below infected areas. Preferably, prune when the tree or shrub is dormant.

► **Mulch**—Mulching around trees and shrubs protects the plants from mower injury and maintains a moist soil environment. Pull mulch away from the base of tree trunks.

► **Insect and Weed Control**—Weeds may harbor viruses that can be transmitted by insects to ornamentals in flower beds.

► **Removal**—Remove diseased flowers from the ornamental bed when symptoms are first noticed.

Chemical Control

Careful plant selection and good cultural practices can reduce the dependency on chemicals for disease control. However, when incorporated into a holistic plant health manage-

SOME CHEMICALS FOR DISEASE MANAGEMENT IN LANDSCAPE ORNAMENTALS

Bordeaux mixture, fixed copper

Dormant application for anthracnose, general protectant for certain leaf spots and blights

Fosetyl-AI (Aliette WDG)

Phytophthora root rots

Chlorothalonil (Daconil Ultrex)

Broad spectrum protectant for anthracnose, leaf and petal blights and needle casts

Quintozene (Terrachlor, PCNB)

Root and stem rots

Triforine (Funginex)

Rose black spot, powdery mildews, rusts

Iprodione (Chipco 26019)

Botrytis blight, Rhizoctonia leaf and stem diseases

Triadimefon (Bayleton)

Rusts, mildews and certain

leaf spots and blights

Maneb/Mancozeb

General protectant for rust and leaf spots

Propiconazole (Banner MAXX)

Apple scab, powdery mildew, leaf spots and blights on certain ornamentals

Thiophanate-methyl (Cleary's 3336)

Rhizoctonia root and stem diseases, certain leaf spots and blights, Botrytis blight

Agrobacterium radiobacter (Galtrol)

Biological control for crown gall

Fenarimol (Rubigan)

Powdery mildew, apple scab, rusts and black spot

Sulfur

Organic fungicide for powdery mildew

Streptomycin (Agri-Strep)

Control of bacterial diseases such as fireblight

Propamocarb (Banol)

Soil drench for Phytophthora and Pythium root rots

Metalxyl (Subdue MAXX)

Soil drench for Phytophthora and Pythium root rots

Chloroneb (Terraneb SP)

Soil drench for Pythium, Rhizoctonia and other root and blight diseases

Myclobutanil (Eagle)

Systemic fungicide for rusts and powdery mildews

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ment program, rather than a "spray and pray" approach, fungicides provide the landscape manager with an effective disease control tool. Correct diagnosis of the disease leads to selection of the right chemical.

Apply the chemical so that all plant surfaces are covered. If the foliage being sprayed is hairy, you may need to add a spreader-sticker to the spray mix. Timing is critical, not only for the initial application but for

follow-up repeat applications as well. Weather, plant growth and other factors affect residual activity of the chemical. Labels will give repeat application guidelines. **LM**

SYMPTOMS OF DISEASES OF LANDSCAPE ORNAMENTALS

Disease

Fungus leaf spots

Distinct spots that vary in size, shape & color

Bacterial leaf spots

Water-soaked spots that drop out

Anthracnose

Leaf spots and blotches and twig dieback

Cankers

Discolored branches, open wounds or branch dieback

Wilts

Yellowing and dieback of foliage, dark streaks in vascular tissue

Rusts

Yellow to orange pustules on leaves and twigs

Mildew

Grayish white powdery coating on leaves, distorted plant parts

Galls

Tumor-like growths on plant parts

Root rots

Wilting and dying of plants, discolored roots

Fireblight

Scorched appearance of shoots, blossoms and/or fruit

Scabs

Black to dark green circular lesions on leaves and fruits

Blights

Non-specific dying of leaf and flower tissue

Mosaic viruses

Mosaic pattern of lightgreen, dark green and yellow on leaves