

Top Ten Pathogenic Diseases of Woody Ornamentals

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Three elements need to be present for a plant disease to develop: a host, a suitable environment and a pathogenic organism. Most plant pathogens are either fungi or bacteria. Below are ten of the more common pathogenic plant diseases associated with woody ornamentals in the Intermountain area. Because symptoms are a plant's response to stress and may appear similar to other problems, correct diagnosis is important. Incorrect identification can lead to unnecessary applications of pesticides. Overuse of pesticides can reduce their efficacy over time and may harm the environment. Control measures should be based on correct identification and by incorporating integrated pest management (IPM) practices. For more detailed information regarding any of the diseases below, go to <http://utahpests.usu.edu>.

Verticillium Wilt

Symptoms

- Common on maple, ash, red bud, and horse chestnut
- Random branch die-back
- Dark streaking in sap wood
- Marginal burning on leaves

Causes

- Fungus: *Verticillium* spp
- Soil-borne fungus-systemically infects water transport system, causing plants to wilt

Management

- Avoid injuring roots when planting
- Keep plants as healthy as possible
- Prune out infected branches



Aspen Leaf Spot

Symptoms

- Small brown spots with yellow margins
- May kill entire leaf and shoot if severe.
- Reduced tree vigor
- Dropping leaves

Causes

- Fungus: *Marssonina populi*
- Prominent after cool, wet springs

Management

- Avoid wetting foliage during irrigation
- Increase air circulation in the tree canopy
- Preventative fungicide during bud break in spring



Fire Blight

Symptoms

- Common on apple, pear, hawthorn, cotoneaster, pyracantha, mountain ash
- Scorched appearance on leaves, blossoms & shoots
- Shepherd's crook on terminal growth
- Bacterial oozing may be present
- Dark and sunken areas in the bark

Causes

- Bacteria: *Erwinia amylovora*
- Active during warm, wet springs
- Spreads during bloom by pollinators and splashing rains
- Enters primarily through blossoms

Management

- Prune out infected wood 8-12" below visual damage (Preferably during dry weather)
- Remove pruned wood to avoid spreading
- Preventive antibiotic sprays during bloom



Anthraxnose

Symptoms

- Common on sycamore, maple, oak, and ash
- Water-soaked lesions on leaves, usually along veins
- Witch's broom effect on branches
- Dropping leaves
- Reduced tree vigor

Causes

- Various fungal pathogens (host specific)
- Prominent after cool, wet springs

Management

- Damage usually not fatal
- Prune to improve air circulation
- Preventative fungicide during wet springs



Slime Flux

Symptoms

- Common on elm, poplar, maple, willow, mulberry
- Also referred to as bacterial wet wood
- Oozing from wound
- Rancid odor
- Insects attracted to discharge

Causes

- Bacteria complex
- Enters through wounds

Management

- Problem is mostly cosmetic
- Consider tree removal
- 10% bleach solution to reduce mess



Powdery Mildew

Symptoms

- Common on roses, apple, maple, and euonymus
- White powder on leaf or bud surface
- Reduced vigor of plant
- Distorted flowers/leaves
- Chlorotic tissue (yellow)

Causes

- Various fungal pathogens (host specific)
- Prominent during cool, wet periods
- Common in shady locations
- Spread by wind and rain

Management

- Select resistant plant varieties
- Reduce over-head irrigation
- Increase air circulation
- Tolerate late-season infections
- Registered fungicides



Crown Gall

Symptoms

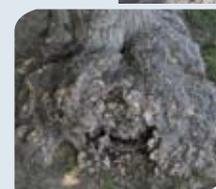
- Occurs on many trees
- Affects roots and trunk
- Swollen, misshapen areas (burls)

Causes

- Bacteria: *Agrobacterium tumefaciens*
- Soil-borne bacteria
- Enters through wounds

Management

- Eliminate mechanical damage to trunk and roots
- May eventually girdle tree



Root Rot

Symptoms

- Weak root system
- Slow growth / poor establishment
- Iron chlorosis
- Pungent soil odor
- Water-soaked / discolored roots
- Wilting and eventual death of plant

Causes

- Various fungal pathogens
- Primarily due to over-irrigation
- Heavy clay soils
- Poor drainage

Management

- Reduce irrigation
- Improve drainage / aeration
- Select adapted plant species
- Plant in elevated berms



Coryneum Blight

Symptoms

- Common on ornamental cherry, plum, almond
- Small round lesions
- Girdling cankers on twigs
- Gumming may be present

Causes

- Fungus: *Wilsonmyces carpophilus*
- Prominent after cool, wet springs

Management

- Prune out infected limbs
- Apply registered fungicides
 - in fall @ 50% leaf drop
 - in spring, just after bloom



Cytospora

Symptoms

- Attacks wounded and stressed wood
- Small black or orange pustules
- Branch dieback
- Can spread to healthy wood

Causes

- Various fungal pathogens
- Enters through wounds

Management

- Maintain healthy plants
- Reduce physical damage
- Prune out dead wood



For more information, go to
utahpests.usu.edu



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