common perennial garden diseases

powdery mildew

Description: Powdery mildew is a fungal disease that appears as a mat of white powdery or web-like growth on the upper side of leaves, stems, and blooms. Powdery mildew spores travel easily through the wind and through physical contact, favoring warm, dry days for spore spread and cool, humid nights for spore production. Infection spreads quickest in shady areas with poor air circulation and high humidity. Though mostly cosmetic, powdery mildew can impact growth and development by limiting photosynthesis in severe infections. Powdery mildew species are largely host-specific, meaning infection will only spread to closely related plants (e.g., powdery mildew on bee balm does not pose a threat to nearby peonies).

Signs and Symptoms: White or gray, web-like or powder-like spots on upper leaf surfaces and stems, yellowing leaves, leaf drop, stunted or disfigured tender growth, and bud abortion.

Management and Treatment: Remove any leaves showing early signs of infection. Carefully apply copper or sulfur fungicide as a preventative measure on powdery-prone plants or treat plants as soon as possible when signs of disease first appear to help reduce spread. Leave or cut back severe cases; fungicides will not cure well-established infections. Keep plants well-spaced and water only at their base; avoid wetting foliage as much as possible. Thin out overgrown, dense foliage to increase airflow, and prune shrubs annually to maintain an open branch structure. Bag and throw away all diseased foliage. Do not compost infected plant material as the fungus can overwinter.

Commonly Affected Perennials: *Monarda* (Bee Balm/Wild Bergamot), *Astilbe* (False Spirea), *Paeonia* (Peony), *Physocarpus* (Ninebark), *Coreopsis* (Tickseed)

rust

Description: Rust is a fungal disease caused by a diverse group of specialist fungi. Rusts are easily spread by wind, physical contact, and water, initiating infection when a spore contacts a moist leaf surface. Small, yellow, translucent lesions on upper leaf surfaces are followed by rusty yellow, orange, or brown pustules on the lower leaf surface, beneath the lesions.

Rust is rarely fatal, but the orange pustules can be unsightly and in severe cases can impact plant growth and vigor. Like powdery mildew, rusts are highly host specific, only posing a threat to other closely related plant species.

Signs and Symptoms: Yellow, orange, red, or brown pustules on the undersides of leaves, yellow translucent spots or streaks on upper leaf surfaces, leaf distortion, leaf drop.

Management and Treatment: Remove any leaves showing early signs of infection. Carefully apply a copper or sulfur fungicide as a preventative measure on rust-prone plants or treat plants as soon as possible when signs of disease first appear to help reduce spread. Cut-back severe cases; fungicides will not cure well-established infections. Keep plants well-spaced and water only at the base; avoid wetting foliage as much as possible. Thin out overgrown, dense foliage to increase airflow. Bag and throw away all diseased foliage. Do not compost infected plant material as the fungus can overwinter.

Commonly Affected Perennials: *Hemerocallis* (Daylily), *Alcea* (Hollyhock), *Malus* (Apple/Crabapple), *Calamagrostis* (Feather Reed Grass), *Rosa* (Rose)

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aster yellows

Description: Aster Yellows is a type of phytoplasma, a single-celled bacteria with a single cell membrane that requires an insect vector (in this case the Aster Leafhopper, *Acrosteles quadrillineatus*) for transmission. Leafhoppers spread Aster Yellows by first feeding on infected plant material and processing the infected phloem for around two weeks. Infection is then passed on to other plants in future feedings. Plant material may begin to show symptoms of infection as soon as seven days after introduction, however symptom development can often take weeks or months following the initial infection. Over 300 plant species are vulnerable to infection, including food crops such as garlic and tomatoes, as well as various other annual and perennial ornamentals.

Signs and Symptoms: Small, malformed, green flowers; pale green, yellow, or white leaves; stunted growth, reduced plant vigor.

Management and Treatment: Infected plant material cannot be treated and must be discarded immediately to prevent further spread. Material may be composted but should be buried in the pile to prevent leafhoppers from feeding on diseased material. Keep area free of weeds to avoid overwintering of the phytoplasma in root and crown tissues.

Commonly Affected Perennials: *Echinacea* (Coneflower), *Symphyotrichum* (Aster), *Leucanthemum* (Shasta Daisy), *Chrysanthemum* (Hardy Mum), *Rudbeckia* (Black-Eyed Susan)