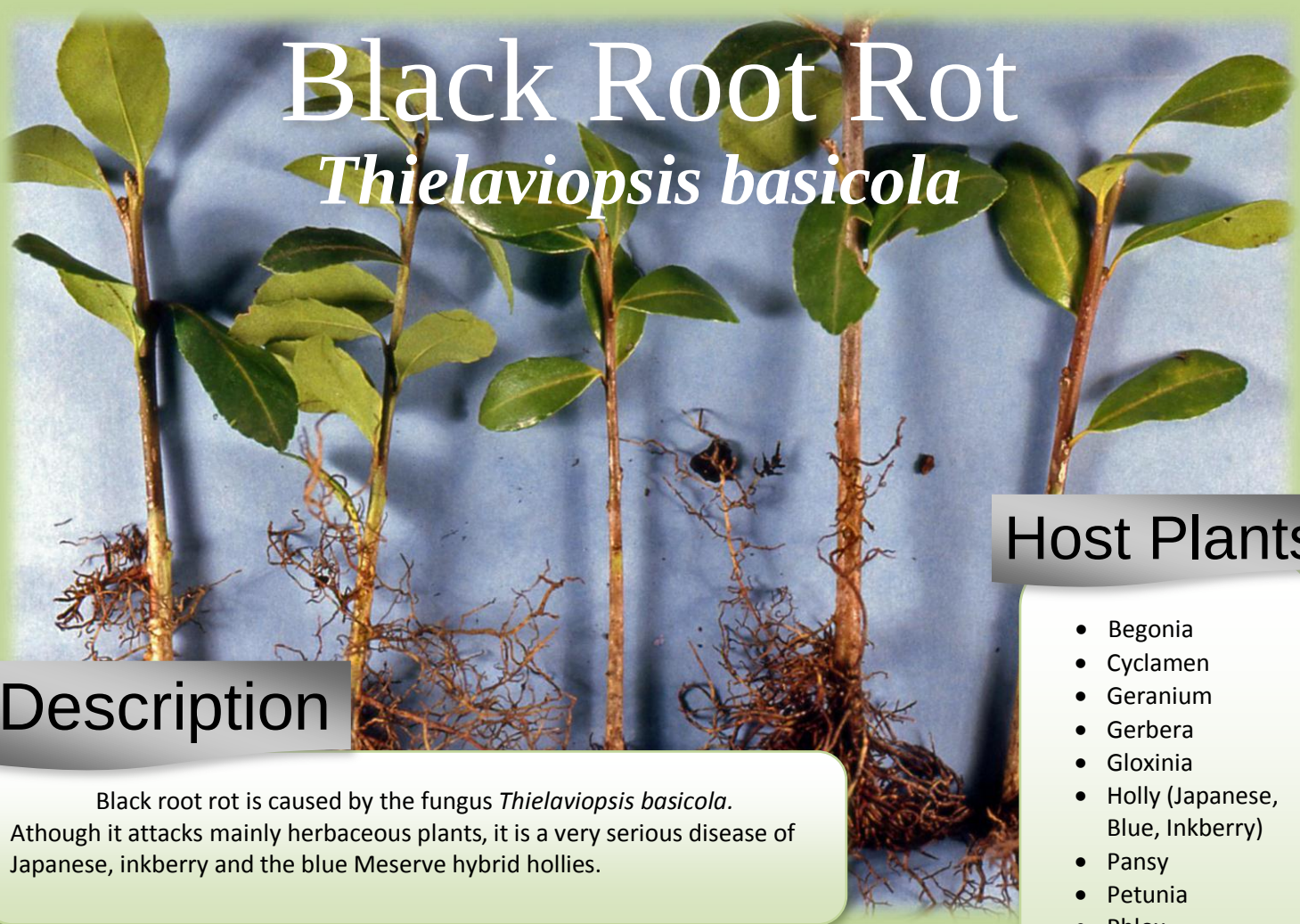
Black Root Rot

Thielaviopsis basicola

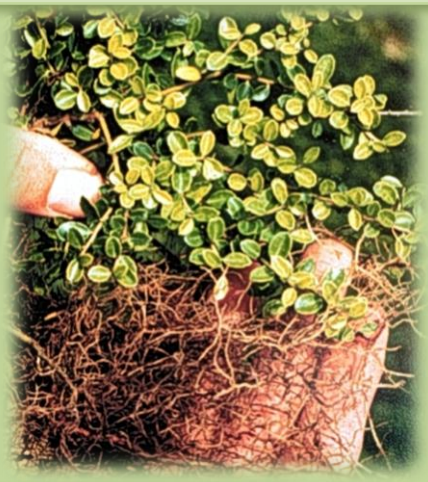


Description

Black root rot is caused by the fungus *Thielaviopsis basicola.* Athough it attacks mainly herbaceous plants, it is a very serious disease of Japanese, inkberry and the blue Meserve hybrid hollies.

Host Plants

- Begonia
- Cyclamen
- Geranium
- Gerbera
- Gloxinia
- Holly (Japanese, Blue, Inkberry)
- Pansy
- Petunia
- Phlox
- Poinsettia
- Sweet pea
- Verbena
- Violet



Disease Cycle

The black root rot pathogen prefers soil temperatures between 55 and 65 degrees F. The disease can spread in irrigation water and substrate by insects such as shore flies and fungus gnats and also can spread long distance via infected plants. The fungus can survive in the soil or it can survive as a saprophyte on plant debris. It overwinters as chlamydospores.

Monitoring

Monitor environmental conditions that stress the host plant, such as high temperatures for pansy. When trying to identify black root rot, look for black lesions on the roots. The contrast in color makes it easy to spot on otherwise healthy white roots. Check roots of otherwise healthy-appearing hollies, as ideal nursery conditions can mask infection.

Symptoms

Some early symptoms of black root rot include yellowing of foliage, marginal leaf scorch and overall plant decline. Black root rot may be mistaken for a nutrient deficiency. Infected herbaceous plants wilt rapidly during the hottest part of the day and recover during the evening hours. Branches may die back, and the entire plant may eventually die. Root systems are reduced to roots that are short, stubby, black and decayed.

Integrated Pest Management

BIOLOGICAL CONTROL

Pseudomonas fluorescens and mycorrhizal fungi have been used to suppress *Thielaviopsis*.

CULTURAL CONTROL

Maintain the soil pH below 6.5. Avoid excessive irrigation, which could attract fungus gnats and shore flies. Plant resistant species. Examine root systems prior to planting container plants. Avoid planting susceptible species in soils previously infested with the fungus. Sanitize recycled containers before using. Avoid using contaminated substrate.

CHEMICAL CONTROL

Please refer to http://eppserver.ag.utk.edu/redbook/sections/trees_flowers.htm for the most up-to-date recommendations.

Resources

Photo credits: Alan Windham, University of Tennessee

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