

Arborvitae – Winter Injury

121



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Pine - Diplodia Blight

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122

Pine - Diplodia Blight

123



123

Management of Blight

124

- Resistant species and cultivars
- Maintain plant vigor
- Protect trees from winter injury and insect damage
- Prune, remove, and destroy diseased portions
- Proper spacing
- Fungicide application

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Apple – Botryosphaeria Canker

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Elm – Nectria Canker

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Beech – Bleeding Canker

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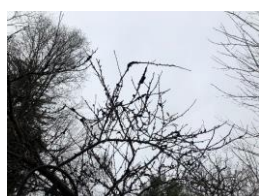


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Cherry – Black Knot

128



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Hornbeam – Botryosphaeria Canker

129

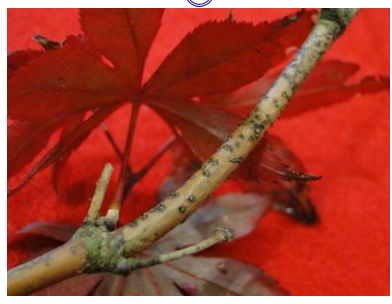


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Maple – Botryosphaeria Canker

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Oak – Botryosphaeria Canker

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Oak – Winter Injury

132



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Rhododendron – Botryosphaeria Canker

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Sweetgum – Botryosphaeria Canker

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134

Chestnut - Blight

135

Brown to red canker

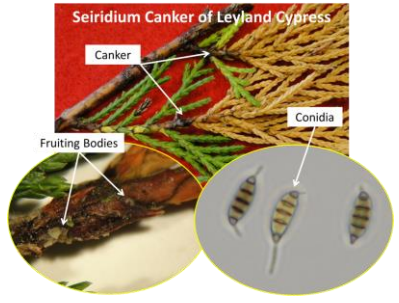
Orange color fringing lesions

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135

Leyland Cypress - Seiridium Canker

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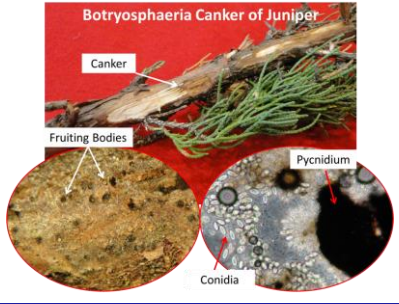


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Juniper - Botryosphaeria Canker

137



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137

Cedar - Quince Rust

138

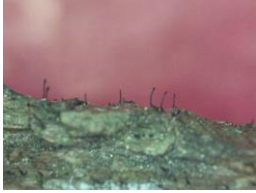


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Pine – Caliciopsis Canker

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Pine – Botryosphaeria Canker

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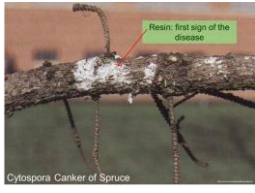



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Spruce - Cytospora Canker

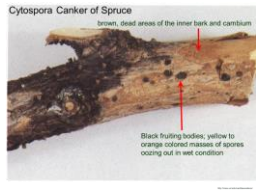
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Cytospora Canker of Spruce

Brown, dead areas of the inner bark and cambium

Black fruiting bodies, yellow to orange colored masses of spores oozing out in wet condition



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Spruce – Phomopsis Canker

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Development of Canker Diseases

143

- Locally infected
- Stems or branches
- Weak parasites
- Infect through injury (frost, pruning wounds, broken branches, and insect injury)
- Overwinter on infected trees (perennial)
- Transmitted through water splash, insect, and pruning tools

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Management of Canker Diseases

144

- No effective fungicide treatments
- Prune and destroy symptomatic branches
- Avoid wounds and pay careful attention to pruning techniques
- Maintain tree vigor by managing water and nutrients

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Maple - Verticillium Wilt

145



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Elm - Dutch Elm Disease

146

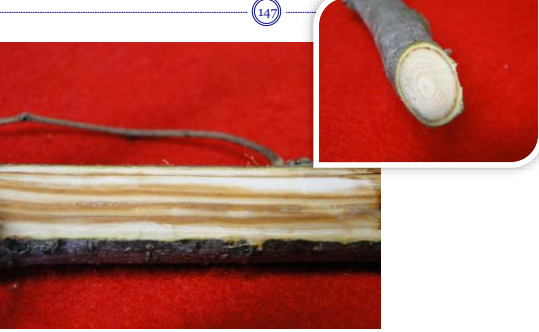


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Elm - Dutch Elm Disease

147



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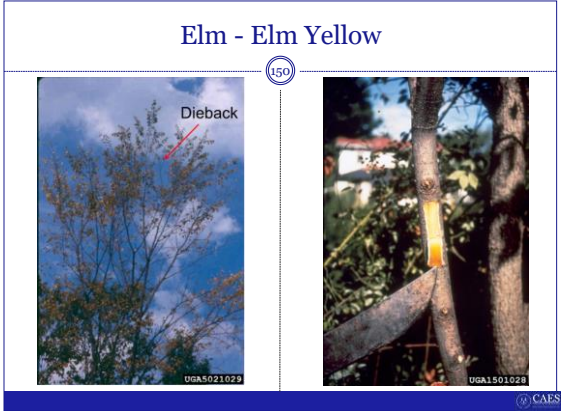
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150

Development of Vascular Diseases

151

- Systemic diseases
- Infected through wounds on roots, stems, or branches
- Survive and overwinter in infected trees and soil
- Transmitted via soil, insect, pruning tools, or root grafts

151

Management of Vascular Diseases

152


- Plant resistant species/varieties when possible
- Maintain plant vigor by cultural practices
- Select appropriate planting sites
- Prune/remove affected branches/limbs (DED)
- Avoid pruning trees in late spring and summer
- Disinfect pruning tools
- Control insects
- Apply fungicides by using injections

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Forsythia – Phytophthora Root Rot

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Lilac – Phytophthora Root Rot

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Fir - Phytophthora Root Rot

155

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155

Fir - Phytophthora Root Rot

156

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156

Douglas Fir - Armillaria Root Rot

157

Resin

Swelling and splitting

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157

Douglas Fir - Armillaria Root Rot

158

white fan-shaped fans of Armillaria mycelia

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Douglas Fir - Armillaria Root Rot

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Rhizomorphs - shoestrings

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Development of Root Rot Diseases

160

- Overwinter in diseased roots and soil
- Transmitted via soil, running water, insects
- Favored by poorly drained compacted soil

160

Management of Root Rot Diseases

161

- No cures once infected
- Avoid soil moisture extremes (drought or wet)
- Maintain tree vigor
- Remove and destroy affected trees
- Use resistant species
- Fungicide injection or drench

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