

GPDN Webinar 2018

Conifer Diseases I Have Loved

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Conifer Diseases I Have Loved
Rhizosphaera Needle Cast

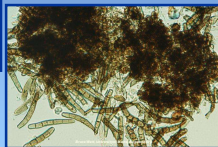
- Pathogens
 - *Rhizosphaera kalkhoffii*
 - *Rhizosphaera pini*
 - *Rhizosphaera* spp.
- Hosts (major)
 - Blue spruce
 - Other spruces: Engelmann, black, Serbian, Sitka, white (Black Hills)

Conifer Diseases I Have Loved
Rhizosphaera Needle Cast

- Hosts (minor)
 - Pines: Austrian, mugo, eastern white pine
 - Firs: balsam and others
 - Douglas fir
 - Hemlock

Conifer Diseases I Have Loved
Rhizosphaera Needle CastConifer Diseases I Have Loved
Rhizosphaera Needle Cast Look-alikes

Spruce Needle Drop



Stigmina Needle Cast

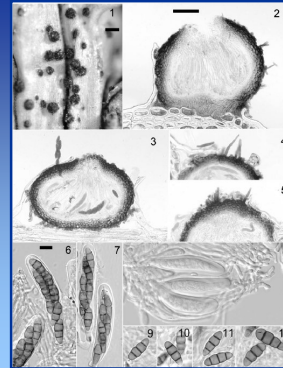


Drought Stress

Conifer Diseases I Have Loved
Spruce Needle Drop

- Pathogen: *Setomelanomma holmii* (?)
- Hosts
 - Blue spruce
 - Other spruces

Conifer Diseases I Have Loved Spruce Needle Drop

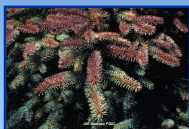


From:
Rossman, A. Y., Farr, D. F., Castlebury, L. A., Shoemaker, R., and Mengistu, A. 2002. *Setomelanomma holmii* (Plecosporales, Phaeosphaeriaceae) on living spruce twigs in Europe and North America. Can. J. Bot. 80: 1209-1215.

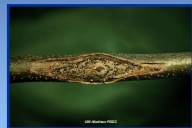
Conifer Diseases I Have Loved Spruce Needle Drop Look-alikes



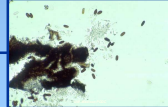
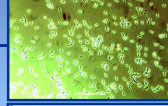
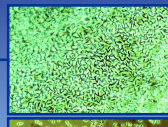
Rhizosphaera Needle Cast



Drought Stress



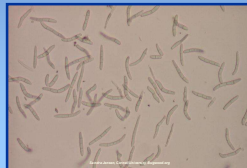
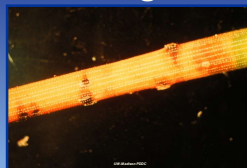
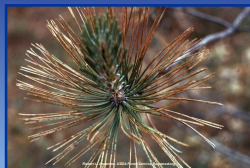
Fungal Canker Diseases



Conifer Diseases I Have Loved Dothistroma Needle Blight

- Pathogen
 - *Dothistroma pini*
 - *Mycosphaerella pini*
 - *Dothistroma septosporum*
- Hosts
 - Austrian pine
 - Mugo pine
 - Ponderosa pine

Conifer Diseases I Have Loved Dothistroma Needle Blight



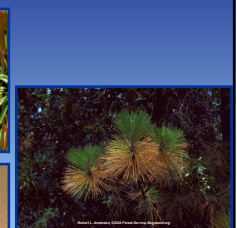
Conifer Diseases I Have Loved Dothistroma Needle Blight Look-alikes



Salt Damage



Brown Spot Needle Blight



Drought Stress

Conifer Diseases I Have Loved Gymnosporangium Rusts

- **Causes**
 - *Gymnosporangium juniper-virginianae*
(Cedar-apple rust)
 - *Gymnosporangium globosum*
(Cedar-hawthorn rust)
 - *Gymnosporangium clavipes*
(Cedar-quince rust)

Conifer Diseases I Have Loved Gymnosporangium Rusts

- **Hosts**
 - Junipers
 - Woody rosaceous plants
(apple, crabapple, hawthorn, quince, pear, serviceberry)

Conifer Diseases I Have Loved Gymnosporangium Rusts



Conifer Diseases I Have Loved Gymnosporangium Rusts Look-alikes



Black Knot

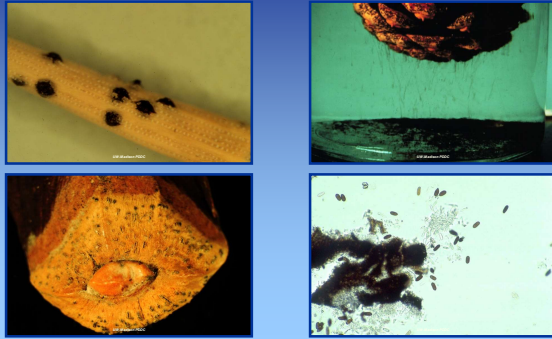
Conifer Diseases I Have Loved Diplodia Shoot Blight

- **Pathogen**
 - *Diplodia pinea*
(*Sphaeropsis sapinea*)
 - *Diplodia* spp.
- **Hosts**
 - Austrian pine
 - Other pines: red, jack, Scots, mugo
 - Other conifers: cedar, cypress, fir, spruce, juniper, yew

Conifer Diseases I Have Loved Diplodia Shoot Blight



Conifer Diseases I Have Loved Diplodia Shoot Blight



Conifer Diseases I Have Loved Diplodia Shoot Blight Look-alikes



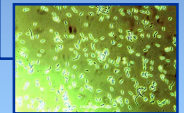
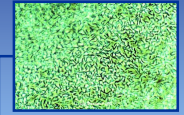
Dothistroma Needle Blight



Drought Stress



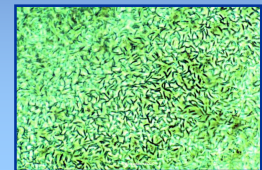
Fungal Canker Diseases



Conifer Diseases I Have Loved Cytospora Canker

- Pathogen
 - Leucostoma (Valsa) kunzei
 - Cytospora (Leucocytospora) kunzei
 - Cytospora spp.
- Hosts
 - Spruce (particularly blue spruce)
 - Many other conifers

Conifer Diseases I Have Loved Cytospora Canker



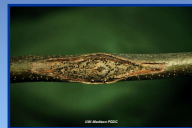
Conifer Diseases I Have Loved Cytospora Canker Look-alikes



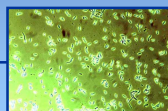
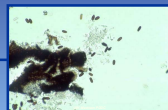
Rhizosphaera Needle Cast



Physical/Cold Injury



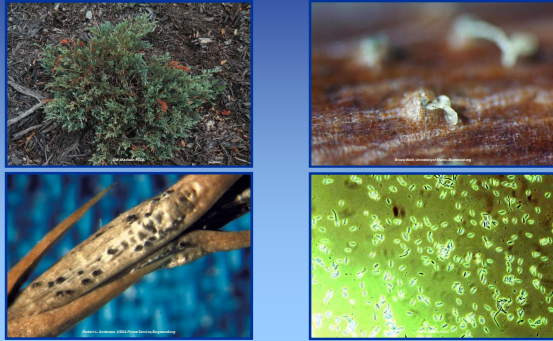
Fungal Canker Diseases



Conifer Diseases I Have Loved Phomopsis Tip Blight

- Pathogen
 - Diaporthe juniperovora
 - Phomopsis juniperovora
 - Phomopsis spp.
- Host
 - Junipers
 - Other conifers

Conifer Diseases I Have Loved Phomopsis Tip Blight



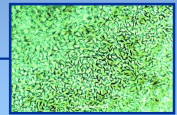
Conifer Diseases I Have Loved Phomopsis Tip Blight Look-alikes



Kabatina Blight



Fungal Canker Diseases



Conifer Diseases I Have Loved White Pine Blister Rust

- Pathogen: Cronartium ribicola
- Hosts
 - White pine
 - Gooseberry/Currants (Ribes spp.)

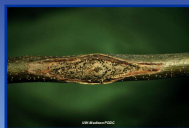
Conifer Diseases I Have Loved White Pine Blister Rust



Conifer Diseases I Have Loved White Pine Blister Rust Look-alikes



Physical Injuries



Fungal Canker Diseases



Armillaria Root Disease



Phytophthora Root Rot

Conifer Diseases I Have Loved Armillaria Root Disease

- Pathogens: Armillaria spp.
- Hosts
 - Many conifers
 - Many deciduous trees and shrubs

Conifer Diseases I Have Loved
Armillaria Root Disease



Conifer Diseases I Have Loved
Armillaria Root Disease



Conifer Diseases I Have Loved
Armillaria Root Disease Look-alikes



Phytophthora Root Rot

Conifer Diseases I Have Loved
Questions?

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