Stigmina Needle Cast

Needle thinning and discoloration due to Stigmina (1).

Spores seen on affected spruce needles (2).

The Fungus

Stigmina needle cast is a disease found in spruce trees which is caused by the fungal pathogen Stigmina lautii. It is found most commonly in blue and white spruce trees. Stigmina has a similar appearance to Rhizosphaera needle cast[1], and it can cause foliage discoloration and loss.

Signs & Symptoms

- Black dots (sporodochia) appear on the stomatal pits of infected needles.
- After one year, infected needles will turn darker to yellow or brown.
- The next year, the black dots produce spores, after which those needles fall.
- The infection progresses over three years and causes severe foliage loss in the lower two-thirds of trees.

Positive Identification

Stigmina can be easily mistaken for Rhizosphaera needle cast. To determine which disease is present, microscopic observation is necessary[1].

Implications for Minnesota

Due to the onset of other needle cast fungal diseases in the state of Minnesota, this could be another detriment. Spruce populations, especially in urban areas, could see a decline in population.

Management & Control Considerations

- The main form of management for Stigmina is selective tree planting and cutting. Do not plant susceptible trees if you are aware of the pathogen in your area.
- Cut down infected trees to prevent the spread of disease.
- Fungicides can be used, but are typically only effective on large scale nurseries[1].

Sources

1) https://hortnews.extension.iastate.edu/stigmina-needle-cast
2) https://ag.umass.edu/landscape/fact-sheets/stigmina-needle-cast

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