

Plant Pathology Fact Sheet

Rating Scale for Brown Stripe of Orchardgrass

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INTRODUCTION

As of right now, there is little published on how to assess foliar disease severity in forage grasses in order to determine the percentage which may be diseased. This publication provides a tool for visually determining the percentage of diseased foliar tissue in orchardgrass. It is based on the observation of individual leaves; however, it is hoped that eventually a rating system will be devised that provides disease percentages for entire plots.

The pictures below were based on natural outbreaks of brown stripe disease, which was observed in a plot of orchardgrass at the UK Spindletop Research Farm on August 3, 2011. The percentage of each leaf blade affected by brown stripe was determined using the computer software, Assess 2.0: Image Analysis Software for Plant Disease Quantification. The software analyzed digital images of diseased leaves and determined the percentage of diseased leaf area. This publication provides examples of disease



severity ranging from 0% to 45% based on increments of approximately 5%.

Brown stripe is a disease that has been reported on Timothy, Fescue, Orchardgrass, Bluegrass, Bentgrass, and Meadow Foxtail. It is caused by the fungus *Cercosporidium graminis* (= *Scolecotrichum graminis*). Symptoms appear as oblong brown lesions on leaf blades, usually more commonly towards the distal end. These lesions are observed to originate between the leaf veins and progress distally toward the tip of the leaf. Infection occurs in both spring and fall

when wet weather predominates. Conidia, asexual fungal spores adapted to dispersal and infection, enable the fungus to spread to healthy leaves. The spore masses are seen on the leaf lesions as nearly microscopic black spots that look similar to mold. The development of this disease produces blighting of leaves, resulting in slower growth and reduced production of healthy seed heads.

Although the images presented here are of one disease on one host grass, the images provided may be useful in assessing foliar disease severity on a variety of different types of grasses.

REFERENCES

- Northover, Phillip. "Stripes - the trend this Spring: Brown Stripe/Leaf Streak of Manitoba Grasses." Manitoba Agriculture, Food and Rural Initiatives. Manitoba, n.d. Web. 3 Aug 2011.
<http://www.gov.mb.ca/agriculture/crops/diseases/fac60s00.html>
- Tsukiboshi, Takao. "Diseases of Orchardgrass (1)." Illustrated Encyclopedia of Forage Crop Diseases. National Grassland Research Institute, 01/05/2001. Web. 3 Aug 2011.
<http://www.nilgs.affrc.go.jp/db/diseases/contents/de9.htm>

Note: Data listed for "Actual Severity" were determined by Assess 2.0 Image Analysis Software



0%

Actual severity 0.03%



5%

Actual severity: 5.68%



10%

Actual severity: 10.7%



15%

Actual severity: 15.72%



20%

Actual severity: 21.98%



25%

Actual severity: 25.67%



30%

Actual severity: 31.28%



35%

Actual severity: 36.53%



40%

Actual severity: 40.71%



45%

Actual severity: 45.56%