Barley Diseases and Management

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Common Barley Diseases in North Dakota

Hosts – Symptoms – Controls

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1. Common Root Rot
2. Spot Blotch
3. Net Blotch
Common Barley Diseases

4. Stagonospora Leaf Blotch
5. Septoria Leaf Blotch
6. Scald
7. Leaf Rust
8. Powdery Mildew
9. Bacterial Blight
Fusarium head Blight (Scab)

*Fusarium graminearum*
Fusarium head Blight (Scab)

*Fusarium graminearum*

![Graph showing percent control for Disease_Fusarium head blight index and Vomitoxin across different samples: S_TR, MS_UT, MS_TR, MR_UT, MR_TR.](image)
Fusarium head Blight (Scab)

*Fusarium graminearum*

**Graph:**

- **Percent Control Disease**
- **No rotation (Barley after wheat or corn)**
- **Rotation (Barley after canola/beans)**

**Legend:**

- S_TR
- MS_UT
- MS_TR
- MR_UT
- MR_TR
Fusarium head Blight (Scab)

*Fusarium graminearum*

- No rotation (Barley after wheat or corn)
- Rotation (Barley after canola/beans)

Percent Control-Toxin

- S_TR
- MS_UT
- MS_TR
- MR_UT
- MR_TR
Speckled/Septoria Leaf Blotch

*Septoria passerinii*

- Light brown lesions with small black dots (pycnidia)
- Not the same Septoria that affects wheat – a different species

**Management:**
- Resistance
- Fungicide
- Rotation
- Tillage
Stagonospora Leaf Blotch
*Stagonospora avenae f. sp.triticea*

- Not the same Stagonospora that affects wheat – a different species – but may affect wheat and other grasses

- Management:
  - Resistance
  - Fungicide
  - Rotation
  - Tillage
Net Blotch

*Pyrenophora teres*

- Brown spots that develop in a net-like pattern on leaves and glumes
- Not the same Tan Spot on wheat – a different species of the same genus

Management:
- Resistance
- Fungicide
- Rotation
- Tillage
Net Blotch

Fungicides at 10.5 (heading)
Spot Blotch
*Bipolaris sorokiniana*

- Dark chocolate-brown round to elongated spots

- Mostly a disease of barley, but wheat may be affected – oats, and rye are not hosts

- Management:
  - Resistance
  - Fungicide
  - Rotation
  - Tillage
Scald

*Rhynchosporium seralis*

- Oval spots with a water-soaked appearance, later becoming bleached or straw colored.
- Prefers cold, wet weather
- Management:
  - Resistance
  - Fungicide
  - Rotation
  - Tillage
Leaf disease complex

Fungicides at 10.5 (heading)
PATHOLOGY RESEARCH NEEDS!!!!

- Screen varieties for resistance.
- For diseases with different races, determine the race structure of Ohio’s populations of these fungi.
- Will the heading-timing of fungicide be just as effective in Ohio as in the Dakotas?
- While Ohio benefit from a barley scab forecasting system?
- WE HAVE WORK TO DO!!
Acknowledgement

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