10-1-1968

Small Grain Diseases: An Aid to Identification and Control

Eric G. Sharvelle
Donald H. Scott

http://docs.lib.purdue.edu/agext/449

For current publications, please contact the Education Store: https://mdc.itap.purdue.edu/
This document is provided for historical reference purposes only and should not be considered to be a practical reference or to contain information reflective of current understanding. For additional information, please contact the Department of Agricultural Communication at Purdue University, College of Agriculture: http://www.ag.purdue.edu/agcomm
This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.
SMALL GRAIN DISEASES
An Aid to Identification and Control

1. LOOSE SMUT OF BARLEY
2. SCALD DISEASE OF BARLEY
3. ANTHRACNOSE OF RYE

4. POWDERY MILDEW
5. SOIL-BORNE MOSAIC OF OATS
6. LEAF STRIPE OF BARLEY

7. HELMINTHOSPORIUM LEAF SPOT OF OATS
8. SEPTORIA LEAF SPOT OF WHEAT
9. LEAF RUST
SMALL GRAIN DISEASES
An Aid to Identification

1. LOOSE SMUT OF BARLEY. True loose smut of barley is caused by the fungus *Ustilago nuda*. Symptoms are visible as soon as the head emerges from the boot. Normal glumes and grain are replaced by a mass of brown powdery spores. Diseased heads stand erect above healthy heads. At harvest time, all that remains is the naked head stem. The symptoms of loose smut of wheat are similar to barley loose smut.

2. SCALD DISEASE OF BARLEY, caused by the fungus *Rhynchosporium secalis*, overwinters on old infected leaves. It produces oval to irregular, bluish green to brown spots on leaves. Spots later become bleached to a straw color with brown margins. Scald also occurs on a number of wild grass hosts.

3. ANTHRACNOSE, caused by the fungus *Colletotrichum graminicola*, occurs on wheat and rye. Infected plants are stunted with shrivelled heads and reduced grain yield. It causes brown lesions on leaf sheaths and stems. Black fungus fruiting bodies (acervuli) later develop on infected leaf blades and stems.

4. POWDERY MILDEW, a common problem on wheat and oats caused by the fungus *Erysiphe graminis*, is easily recognized by the extensive development of a light gray mold on the surface of leaves, stems and heads. Overwintering fungus fruiting bodies (perithecia) later appear as small black specks on leaf and stem surfaces.

5. SOIL-BORNE MOSAIC, caused by a virus, occurs on wheat, oats, barley and on closely related wild grasses including annual bromegrass. In the spring, light green to yellow patches of plants appear in the field. Leaves of infected plants are mottled with irregular stripes or blotches. Infected plants are dwarfed, and produce excessive tillers. It may persist in infested soil for 6 years or more.

6. LEAF STRIPE occurs only on barley. Caused by the fungus *Helminthosporium gramineum*, it produces distinct yellow stripes on leaves which later turn brown. Infected leaves become frayed and tattered. Infected plants are severely stunted, rarely producing normal heads.

7. HELMINTHOSPORIUM LEAF SPOT OF OATS, also known as "leaf blotch," is caused by the fungus *H.avenae*. It causes oblong, reddish spots with sunken centers on the leaf blades. Infected leaves turn yellow and die.

8. SEPTORIA LEAF SPOT ON WHEAT, also known as "speckled leaf blotch," is caused by the fungus *Septoria tritici*. Most conspicuous in early spring on leaves and leaf sheaths of wheat, it produces irregular reddish-brown spots with ash-gray centers scattered over the surface of lower leaves. It is often confused with winter injury. Small black fruiting bodies (pycnidia) are readily visible on dead leaves in the center of leaf spots.

9. LEAF RUST, a common problem on wheat, is caused by the rust fungus *Puccinia recondita*. Striking oval, orange-yellow rust pustules occur on leaves from seedling stage to maturity. Symptoms also occur on stems.

Prepared by Eric G. Sharvelle and Donald H. Scott, plant pathologists.