Small Grains XII

HALO SPOT

Ronda Koski, *Ned Tisserat*, and *Mary Burrows*

Cause: *Pseudoseptoria donacis* (formerly *Selenophoma donacis*)

Occurrence: In the early 1960s, halo spot was widespread on wheat grown in the Pacific Northwest, but since then, the disease has been relatively insignificant in the United States of America. *Pseudoseptoria donacis* overwinters in infected wheat tissues and volunteer wheat plants.

Hosts: The pathogen can infect many members of the grass family (Poaceae) throughout the world, including rye, wheat, bromegrass, and wheatgrasses. Halo Spot is also reported to occur on oats and rye, but some sources consider oats to be immune to the disease. Barley is relatively unaffected (considered to be resistant) by the *Pseudoseptoria donacis* except for some cultivars grown in certain Scandinavian countries.

Key Symptoms:

- On leaves, elliptical, tan to brownish-gray lesions (spots), usually less than 10 mm long with a dark border surrounded by a prominent yellow halo.
- Small, dark-colored fungal structures (pycnidia) may be visible in older lesions.
- Sometimes lesions are so numerous that they cover the entire leaf blade.
- Lesions may also occur on leaf sheaths and culms.
- Lesions may fade with age, leaving pycnidia in unspotted host tissues of wheat plants.
- Symptoms may be confused with septoria leaf blight.

Significance: As with other foliar diseases, Halo spot can impair the photosynthetic processes of plants heavily invested with *Pseudoseptoria donacis*, resulting in reduced yields. Conidia (pycnidiospores) produced in overwintering crop debris and volunteer plants serve as sources of primary inoculum.Pycnidiospores are exuded and dispersed in rainwater. Because the disease is relatively insignificant to wheat, cultivars specifically resistant to Halo spot have not been developed.

Favorable Conditions: Infection requires an extended period of wetness. Spores germination and infection occur optimally at temperatures between 15 degrees C and 25 degrees C.Spores (pycnidiospores) produced in overwintering crop debris and volunteer plants serve as sources of primary inoculum. Pycnidiospores are exuded and dispersed in rainwater.

Management Approaches: Because halo spot is a relatively insignificant disease, no specific control recommendations exist for this disease.

Diagnosis:

- Dark brown, erumpent, globose, ostiolate pycnidia (40-150 um in diameter) within older lesions.
- Pycnidiospores appear hyaline, crescent-shaped with pointed-ends (2.0-4.5 X 18.0-35.0 um).
- Current-season spores are non-septate, whereas overwintered spores may be uni-septate.
- Unable to locate description of fungal colony when grown on common agar-based media

Agrichemicals:

There are no agrichemicals or resistant cultivars.

Product List for PEST:

Pesticide	Product/Acre	Preharvest interval, remarks

Categories: Small grains, Diseases, Halo spot

Date: 09/18/07

Supported in part by:
Western Region IPM Center, EPA Region Vlll, National Plant Diagnostic Network, Great Plains Diagnostic Network, USDA CSREES, Colorado State University, Montana State University, South Dakota State University, the University of Nebraska - Lincoln,and the University of Wyoming.