



# Extension FactSheet

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## Sharp Eyespot of Wheat

Patrick E. Lipps  
Department of Plant Pathology  
The Ohio State University

Sharp eyespot of wheat is caused by the soil-borne fungus *Rhizoctonia cerealis*. This fungus is prevalent throughout the temperate regions of the world and is capable of infecting many grass species. The name “sharp eyespot” comes from the characteristic symptoms that occur on the lower wheat stems. The lesions near the base of the stem have sharply defined dark margins and are lens shaped. Another disease, similar to sharp eyespot, known as eyespot or strawbreaker, is caused by a completely different fungus and has not been reported in Ohio. Sharp eyespot lesions differ from eyespot lesions primarily in that the margins are obviously darker than the center portion of the lesion. The fungal growth within the lesion is also more superficial and can be easily rubbed off. In Ohio, sharp eyespot is common in years with cool, wet conditions from late winter through early spring.

This disease, by itself, does not cause large yield losses. However, it frequently occurs in combination with other diseases such as take-all root rot and Cephalosporium stripe.

Symptoms often occur on plants around the periphery of wet spots and in areas where water has stood over the winter. Acidic soils increase disease risk as do cool spring temperatures. Rye and oats appear more susceptible than wheat or barley. Sharp eyespot can be severe on wheat when it follows one of these more susceptible crops.

### Symptoms

The first symptom that most people see is premature ripening of affected plants. More frequently, lesions are superficial and the plants do not appear to be affected. The name sharp eyespot describes the symptom which is a conspicuous lesion on the lower leaf sheath and culm. The centers of these eyespots are pale to straw-colored and often studded with dark mycelium. The margins are dark brown. Small black compact masses of hardened mycelium, known as sclerotia, may develop in the space between the culm and leaf sheath. As plants mature, infected tillers die prematurely, producing white heads with shriveled kernels. Diseased tillers are also prone to lodging.

### The Fungus

*Rhizoctonia cerealis* produces no spores, but lives on crop residues and in the soil as mycelium and as small resistant structures called sclerotia. This fungus differentiates into hardened mycelial masses or sclerotia, on host plants and in culture. The sclerotia, which are very small and irregular in shape, germinate to form mycelia.

*Rhizoctonia cerealis* is the name given to the asexual state of this fungus, characterized by white to brown mycelium, the presence of sclerotia and the absence of spores. This fungus has been found to have a sexual stage, known as *Ceratobasidium*, but the *Ceratobasidium* stage is not important in the disease cycle.

While *Rhizoctonia cerealis* is common in the soil and on host debris as mycelium and sclerotia, the damage due to infection is very dependent on environment. The exact conditions under which the disease is important have not been determined, but observations indicate that protracted wet, cold conditions favor disease development. Infections are most serious when they are

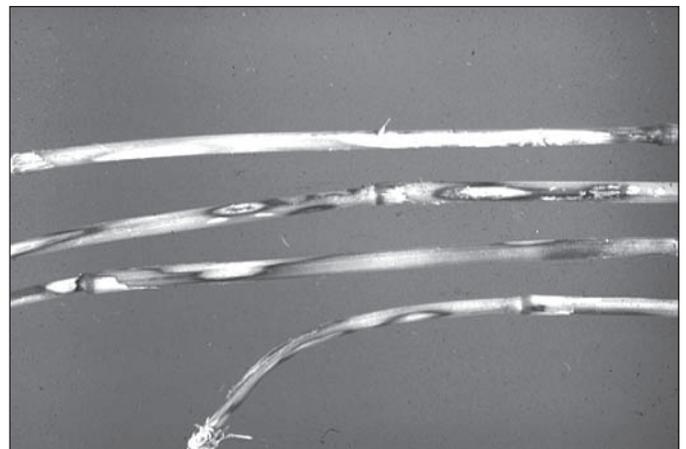


Figure 1. Sharp eyespot is recognized as oval to lens shaped lesions on the base of wheat stems with dark brown borders and pale centers.

initiated on seedlings. Seedlings may be killed out right, but most survive through the growing season some of which then die before maturity and produce white heads.

## Control

Because sharp eyespot is of little economic importance, no specific recommendations are made for its control. Management practices which favor good, vigorous growth of the wheat plant generally limit damage due to sharp eyespot. Proper seed bed preparation, good soil drainage, balanced fertility and crop rotation are considered most important.

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