



AGRONOMY DEPARTMENT 1575 Linden Drive University of Wisconsin-Madison 53706 608-262-1391/2

Field Crops 26.45-ww
July 1991

Scab on Winter Wheat

Several wheat fields in Wisconsin and neighboring states have partially-bleached wheat head that are the most common visible symptom of head scab, caused by the fungus Gibberella zeae (the imperfect state is Fusarium araminearum). One or more spikelets per head turn prematurely straw-colored when glumes on healthy spikelets are still green. Infected spikelets are usually sterile or contain bleached to grayish-brown, shriveled and rough kernels. A salmon colored mold often grows at the base of diseased spikelets. It is unusual for the entire head to be bleached or for the entire head to be void of kernels. These symptoms are more commonly associated with take-all or by insects such as wheat stem maggot, Hessian fly or Sawfly. No effective control has been developed for scab). Scab is most serious when warm moist weather occurs from flowering time to near maturity.

Scab in wheat is also important because it reduces grain quality and feeding value. The fungi that cause scab may produce mycotoxins in the grain that in high enough concentrations can be toxic to some livestock. However, it is important to understand that scab in the field does not necessarily mean a toxin has developed in the grain. Toxins in the grain can only be confirmed by a laboratory analysis.

Wheat producers that suspect they have scab in their wheat may want to set their combine so that the light kernels are cleaned out by the machine. Wheat fields with a large percentage (3-10%) of infected heads will not necessarily result in a similar percent of infected grain at harvest time. Lightweight or low test weight grain is commonly docked in price by elevators. Wheat growers and grain buyers should be aware that there are a lot of possible reasons other than scab for low test weight wheat. Other plant diseases which were present this year such as Barley Yellow Dwarf Virus, powdery mildew, leaf rust and septoria can reduce test weight and grain yield. In some areas of the state the plants were under moisture stress during grain filling and this will also cause low test weights.

While no varieties of wheat have a high degree of resistance to scab, some may appear more resistant because they flower earlier or later, or because they shed their anthers more quickly. These varieties may escape infection by avoiding high inoculum levels.

Some management factors to reduce the potential for scab in wheat in future years are:

1. Clean, deep plowing of all small grain, weed grass, corn residues, and rotted corn ears.

2. Rotate fields and plant wheat after a legume crop, not after corn or another grain. No-till wheat seeded in corn residue has a high potential for scab.
3. Plant only high-quality seed that has been thoroughly cleaned to remove shriveled kernels and treat seed with a fungicide.
4. To reduce the chances of seedling blight, delay planting until soil temperature is 60°F or lower.
5. . Plant seed in a well-prepared, fertilized seedbed to ensure good root growth and vigorous development

Edward Oplinger, Agronomy Department, Craig Grau. Plant Pathology Department.
University of Wisconsin-Madison, Madison, WI 53706.