

## Fusarium Head Blight (Scab)

Trenton Stanger\* and Craig Grau, UW-Madison Plant Pathology

**What is Fusarium head blight?** Fusarium head blight (FHB) or scab is a fungal disease that affects wheat, barley, oats, and many grasses. FHB is important, not only because it reduces yield, but because it reduces the quality and feeding value of grain. In addition, the FHB fungus may produce mycotoxins, including deoxynivalenol (also known as DON or vomitoxin), that when ingested, can adversely affect livestock and human health.



**Fusarium head blight.** Note infected tan (red arrow) and non-infected green (white arrow) spikelets.

### What does Fusarium head blight look like?

Diseased spikelets on an infected grain head die and bleach prematurely. Healthy spikelets on the same head retain their normal green color. Over time, premature bleaching of spikelets may progress throughout the entire grain head. If infections occur on the stem immediately below the head, the entire head may die. As symptoms progress, developing grains are colonized causing them to shrink and wrinkle. Often, infected kernels have a rough, sunken appearance, and range in color from pink or soft-gray, to light-brown.

### Where does Fusarium head blight come from?

FHB is caused by *Fusarium graminearum*. This fungus overwinters on infested stubble and straw of cereals and weed grasses, and on stalks and rotted ears of corn. The severity of FHB varies greatly from year to year. Infection is favored by extended periods of high moisture or high (>90%) relative humidity, and moderately warm temperatures (59 to 86°F).

### How can I save a small grain crop with Fusarium head blight?

Fungicides can be used for FHB control. However, they rarely are due to high cost, variable effectiveness, and the unpredictable nature of FHB epidemics. Fungicides containing azoxystrobin, benomyl, mancozeb, propiconazole, pyraclostrobin, tebuconazole, and trifloxystrobin provide partial control of FHB and associated mycotoxin production.

Treatments need to be made at flowering (pollination) to be effective. Be sure to read and follow all label instructions of the fungicide that you select to insure that you use the fungicide in the safest and most effective manner possible.

**How can I avoid problems with Fusarium head blight in the future?** DO NOT plant small grains into small grain or corn residue as this increases the chance of FHB. Also, avoid planting grain crops near areas where there are large amounts of small grain or corn residue on the soil surface. When possible, plant small grains following a legume crop (e.g., soybeans) and maintain a rotation with two to three years between small grain crops. In addition, deep plowing of all infested plant debris is recommended. DO NOT apply manure containing infested straw or corn stalks onto fields planted to small grains. Certain grain varieties have moderate levels of resistance to FHB, and use of these varieties can lead to a reduction in disease severity and an increase in grain quality. Finally, plant several varieties of a small grain that vary in flowering date. This will decrease the risk that an entire crop will be vulnerable to FHB when weather conditions favor the disease.

**For more information on Fusarium head blight:** Contact your county Extension agent.

\*Completed as partial fulfillment of the requirements for Plant Pathology 559 – Diseases of Economic Plants at the University of Wisconsin-Madison.

© 2005 by the Board of Regents of the University of Wisconsin System doing business as the division of Cooperative Extension of the University of Wisconsin Extension.

An EEO/Affirmative Action employer, University of Wisconsin Extension provides equal opportunities in employment and programming, including Title IX and ADA requirements.

References to pesticide products in this publication are for your convenience and are not an endorsement or criticism of one product over similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from pesticide exposure. Failure to do so violates the law.

Thanks to Diana Alfuth, Bryan Jensen and Jim Stute for reviewing this document.