

Wheat Fusarium Head Blight Active In Parts Of Kentucky



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There is a considerable amount of Fusarium head blight (FHB) showing up in many wheat fields in the central and northeastern parts of the state. With some exceptions, west and southern KY are in pretty good shape, overall.

The field shot (Figure 1), taken by David Harrison, Larue County ANR Agent, is from a farm in Larue County in the heart of the state. I have received other reports of significant FHB from the same part of the state. This development is not a surprise based on the output of the FHB risk prediction tool for the period May 10-12 (see Figure 2). I suspect many wheat fields east of I-65 (especially in the more northern areas) were flowering during this period, which is about a week later than when most wheat fields flowered in the western half of the state. Flowering is the time when FHB takes hold in a crop if weather conditions are favorable. FHB Symptoms begin to show up in force about 3 weeks following infection.

I have selected the Elizabethtown, Hardin County, weather station (Figure 3) as an example of what the FHB models were showing during the critical infection window. As you can see, the FHB risk was very high for this weather station and surrounding area.

It is my understanding that the field shown in the above photo was sprayed with a fungicide, but still has what looks to be about 50-60 percent incidence of disease. It is possible that the application was made too early or too late or that there was some other factor that limited efficacy. On the other hand, the grower might have actually gotten reasonable control from the application, in that 40-45 percent control of FHB and DON is about all one can expect from a FHB fungicide when the FHB risk is high and the variety is susceptible. In fact, it is common to have 80-90 percent incidence of diseased heads in a FHB-susceptible variety when the risk is high and a fungicide IS NOT deployed. Thus, 50-60 percent incidence may actually represent reasonable disease control. This is all speculation for this specific field since I do not know the variety or the details of fungicide application. But my statements are in line with years of research data and past experience.

Aside from the obvious yield and grain quality problems associated with FHB, the mycotoxin, deoxynivalenol (DON), is most certainly going to be a factor in grain, silage, hay or straw harvested from fields with significant levels of FHB. DON affects both marketability and, potentially, end use. For example, grain destined for human consumption cannot have greater than 2 parts per million (ppm) DON. Grain with greater than 2 ppm will be docked at the point of sale. Very

high levels may be a cause for rejection at the elevator. For grain, silage, hay, or straw destined for animal feed/bedding, the allowable levels of DON are greater than 2 ppm, but maximum allowable/safe levels vary according to the animal species in question. Check with your county ANR agent for more information on DON risk and standards relative to specific animal species.

My main role is to alert you that where FHB symptoms are widespread and severe, high DON levels are most certainly going to be encountered in grain and miscellaneous harvested spike tissues. For fields harvested for grain, turning up the air on the combine and blowing



Figure 1. Field in Larue County, Kentucky, showing severe Fusarium head blight.

light-weight "scabby" kernels out the back of the combine has been shown to limit DON in harvested grain. Fields destined for silage and hay should be harvested as soon as possible since DON levels will continue to increase while the crop is still in the field. Keeping track of grain from specific fields may be a good idea since it is probable that DON levels will vary from field to field, depending on when the crop flowered and the weather conditions at flowering, among other factors.

Grain elevators and mills will test grain for DON levels using ELISA test kits. There are also various test kits that you may purchase and test for DON yourself (www.gipsa.usda.gov/fgis/techservsup/metheq/testkits.pdf). Kits tend to not be as accurate as more specific tests often used by mycotoxin testing laboratories; nonetheless, test kits often provide the general information needed to make appropriate decisions. You may also send samples off to a laboratory that has the capability of testing for DON. If you need DON analysis for complex feeds, such as hay, it would be wise to call the laboratory before sending samples to determine if they only test for DON in grain (such is the case with the UK Regulatory Services Testing Laboratory) or are set up to test for DON testing in complex feeds (such is the case for the UK Veterinary Diagnostic Laboratory). Δ

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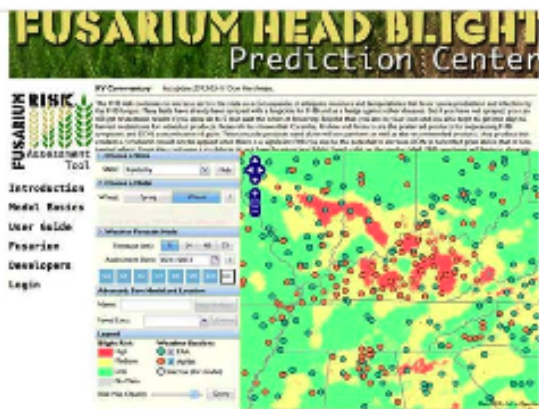


Figure 2. Screen shot of FHB Prediction Tool website (www.wheatcab.psu.edu/) on May 11, 2013. Red indicates high FHB risk areas; yellow indicates moderate risk areas; green indicates low FHB risk.

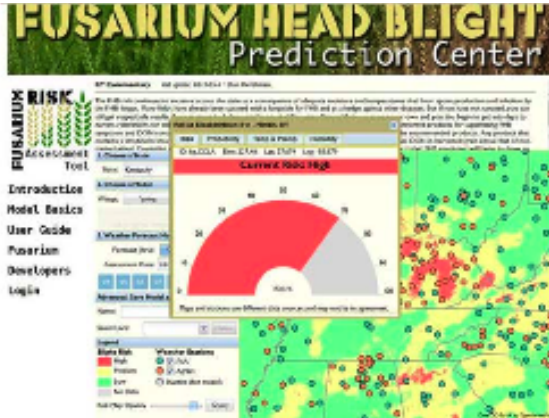


Figure 3. Screen shot of FHB Prediction Tool website (www.wheatcab.psu.edu/) on May 11, 2013 for Elizabethtown, Hardin County, Kentucky.