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## Wheat scab prediction model available to growers

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### **Abstract**

Wheat in southern Iowa has now headed. Wheat is most susceptible to *Fusarium* head blight (scab) during flowering growth stages; however, some infection can occur during kernel development. Although scab often is not a problem in Iowa, if weather conditions are wet the disease can threaten wheat crops as it did in 1996.

### **Keywords**

Plant Pathology

### **Disciplines**

Agricultural Science | Agriculture | Plant Pathology

# INTEGRATED CROP MANAGEMENT

## Wheat scab prediction model available to growers

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Wheat is most susceptible to *Fusarium* head blight (scab) during flowering growth stages; however, some infection can occur during kernel development. Although scab often is not a problem in Iowa, if weather conditions are wet the disease can threaten wheat crops as it did in 1996.



**Scab causes premature ripening of wheat.**

[Enlarge](#) [1]

The disease is caused by a number of species of *Fusarium* fungi, especially *Fusarium graminearum*. Infection usually is first noticed soon after flowering. Infected spikelets have a bleached appearance. Part of, or whole, heads will die prematurely. In moist conditions, salmon-pink fungal growth may be visible at the base of the glumes. Heads with scab produce no grain or shriveled grain with a chalky-white appearance. Thus, if a large proportion of plants in a field are infected, yield loss can be devastating. Scab also is cause for concern because of harmful mycotoxins, in particular DON (vomitoxin) produced by *F. graminearum*, which affect the performance of livestock--especially swine and breeding livestock. If the infection looks serious, a lab analysis will measure the amount of vomitoxin in the feed and can make recommendations on how to dilute the feed appropriately. Baled wheat straw should be safe because the mycotoxins are concentrated in the grain.

Growers now have access to a [website](#) [2] that enables you to determine the risk of scab occurring in your wheat fields (note: you'll need [Flash Player](#) [3] installed). Scab predictions are based on the flowering date of the wheat in an area. The homepage provides useful links to information about using the scab model. In particular, please read the sections on 'Model details' and 'Reality check.'

To get a scab risk prediction, click on the [Risk Map Tool](#) [4]. You will need to answer three basic questions:

1. Enter the flowering date of your wheat fields on the calendar to the left of the screen. (Note: since the model uses recorded weather data, not predicted weather data, you

- will not be able to choose future dates for flowering).
2. Indicate if you are growing 'spring' or 'winter' wheat (Note: all wheat in Iowa is winter wheat).
  3. Indicate if the wheat was planted into corn residue.

Click 'OK' and a map of the US will come up. Click on Iowa to see a risk contour map for the state. Red indicates high risk, yellow moderate risk, and green is for low risk. So far the risk of scab for winter wheat not planted in corn residue is very low across Iowa. The National Weather Service weather stations are represented as blue dots on the map. If you click on any of the weather station locations, you will see graphs showing the risk probabilities, and the precipitation and temperature data, for the previous seven days at that location.

If weather conditions are favorable, scab is difficult to control and most disease management options need to be decided on prior to planting. No-till wheat planting into corn residue increases the risk of scab infection since corn also is susceptible to infection by *F. graminearum* (causes Gibberella ear and stalk rot). Wheat varieties that have moderate resistance to scab are available. Foliar fungicides have been only slightly effective against the disease.

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**Source URL:**

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2004/5-31-2004/wheatscab.html>

**Links:**

- [1] <http://www.ent.iastate.edu/imagegal/plantpath/wheat/scab/0093.14wheatscab.html>
- [2] <http://www.wheatscab.psu.edu/>
- [3] <http://www.macromedia.com/go/getflashplayer>
- [4] <http://www.wheatscab.psu.edu/riskTool.html>

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