

**Cropland disease.** A heads up on Fusarium head blight in wheat and barley (5 June, 2017)  
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Fusarium head blight, or scab, is going to be of increasing importance in Montana now that we have more corn acres. If you have had scab in your area previously and have grown corn, consider yourself at high risk if weather conditions are favorable (high relative humidity, warm temperatures). Epidemics occurred last year in durum in the NE corner, but were low in the Yellowstone and Gallatin valleys. Epidemic occurrence was linked to high relative humidity during the flowering period. We do have spring wheat varieties that have resistance (see below) and several effective chemical options, but this can be an extremely devastating disease that needs to be carefully managed using several options. Irrigated wheat and barley acres in the Gallatin and Yellowstone valleys commonly have this disease, and if high moisture and humidity conditions prevail through flowering, our crops could be at high risk.

Some weather stations in NE Montana have been added to the NDAWN network at NDSU, <https://www.ag.ndsu.edu/cropdisease/> and you can run a scab model. We have not ground truthed the forecasting, but it's a good place to start. Stations include: Dooley, Redstone, Dagmar, Froid, Brorson, and Sidney.

Neither variety resistance nor fungicide are going to be your 'silver bullet' and fungicide sprays have to be very carefully timed and applied to provide maximum coverage of the head. Please consider applying a triazole fungicide with efficacy against scab as a routine disease management measure if you are at risk for this disease. Caramba, Proline, and Prosaro are considered good options. Strobilurin products and blends with strobilurins are not recommended due to the possibility of increasing the DON (vomitoxin) content of the grain. Tilt has poor efficacy; Folicur has fair efficacy. Folicur is not as effective as the previously mentioned products.

There's virtually no way to tell you have scab until you see the blighted heads. Symptoms include partial bleaching of the head and a brown discoloration of the stem below the head (pictures below). Fusarium head blight prefers temperatures of 65-85F and extended dew. It infects through the flower. There is a MontGuide at <http://msuextension.org/publications/AgandNaturalResources/MT200806AG.pdf> the NDSU fact sheet is at <http://www.ag.ndsu.edu/pubs/plantsci/smgrains/pp804w.htm> . This pathogen does not spread rapidly like rust but it is windborne as well as residue borne.

PAY ATTENTION to **NOZZLE TYPE** and **TIMING** of APPLICATION – again, photos below. Don't skimp on water because you want good coverage of that head.

There are great resources to learn more about this disease through the US Wheat and Barley Scab Initiative website at <http://www.scabusa.org/>.

**On-line Article:** [FHB in 2014: From Nonexistent to Severe](#) *Posted: 09-25-14*

**On-line Article:** [Assessment Tool & Alert System Help Growers Control Scab in Wheat & Barley Fields](#) *Posted: 04-30-14*

- [FACT SHEET: Fusarium Head Blight Management in Wheat](#) *Posted: 11/23/14*  
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**Fusarium Head Blight** (*Fusarium* spp.) – a.k.a. **Scab**  
 Brownish lesions on head. If severe, salmon-orange clusters of spores are seen as well as bleaching of heads and sterility.



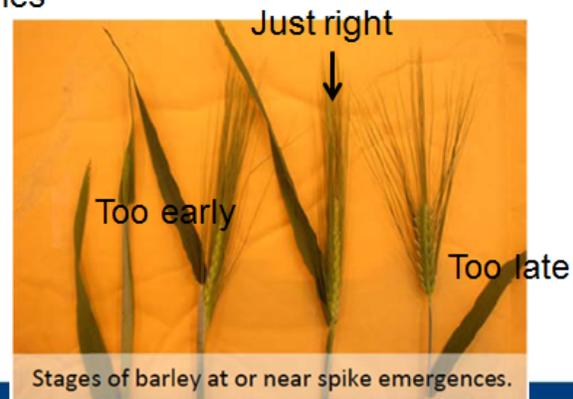
## Variety reactions to *Fusarium* head blight

Variety	Lodging	Ergot	Scab	Yield (Bu/a)
ACS52610	7%	++	2%	87
Glenn	31%	+	2%	67
MT0550	48%	+	3%	79
Alsen	10%	+	4%	68
Granite	1%	++++	5%	75
Freyr	77%	+	6%	85
Knudson	63%	+	6%	81
9820127-06	16%	-	8%	91
MT0551	36%	+++	10%	67
Howard	63%	-	12%	69
Kelby	23%	+	18%	79
Espresso	0%	-	21%	76
Vida	50%	-	23%	68
Hank (CK)	0%	-	47%	53

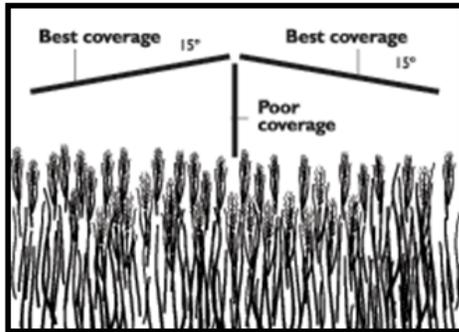
2006, Grey and Dyer

# Optimal application of fungicides for FHB management, cont'd

- Timing of application
  - Wheat early flowering, Feekes 10.51
  - Durum early flowering, F 10.51 – long window of susceptibility from F10.51 to F10.54 (watery ripe) so later application may be feasible
  - Barley early full head emergence, Feekes 10.5 – flower before head emergence – not usually impact yield but DON produced in glumes



# Optimal application of fungicides for FHB management



- Spray all sides of the head; closer to horizontal is better
- Water volumes 18-20 GPA
- Forward-and-back and alternating Turbo FloodJet nozzles 10-12 in above canopy; others 20 in above to allow full pattern development

- Clean sprayer including boom end caps before application! Or use a separate tank for fungicides – cereals are very vulnerable to crop injury at heading
- Disease forecasting systems – No good models are available for irrigated production

Image from: <http://www.omafra.gov.on.ca/english/crops/pub811/4additional.htm#figure5>

## Fungicides available for FHB suppression

Fungicide	Active ingredient	% Control*
<a href="#">Prosaro</a>	<a href="#">Prothioconazole</a> + <a href="#">Tebuconazole</a>	52%
<a href="#">Caramba</a>	<a href="#">Metconazole</a>	50%
<a href="#">Proline</a>	<a href="#">Prothioconazole</a>	48%
<a href="#">Folicur</a>	<a href="#">Tebuconazole</a>	40%
<a href="#">Tilt</a>	<a href="#">Propiconazole</a>	32%

\* Paul, P. A., Lipps, P. E., Hershman, D. E., McMullen, M. P., Draper, M. A., and Madden, L. V. 2007. A quantitative review of [tebuconazole](#) effect on [fusarium head blight](#) and [deoxynivalenol](#) content in wheat. *Phytopathology*. 97:211-220.

**Note:** [Strobilurin](#) fungicides have been shown to increase DON content in grain and are not recommended for FHB management