



*Wheat Day 2008*

---

# **Managing Wheat Head Scab With Fungicide**

***Dr. Pierce Paul and Mr. Dennis Mills***

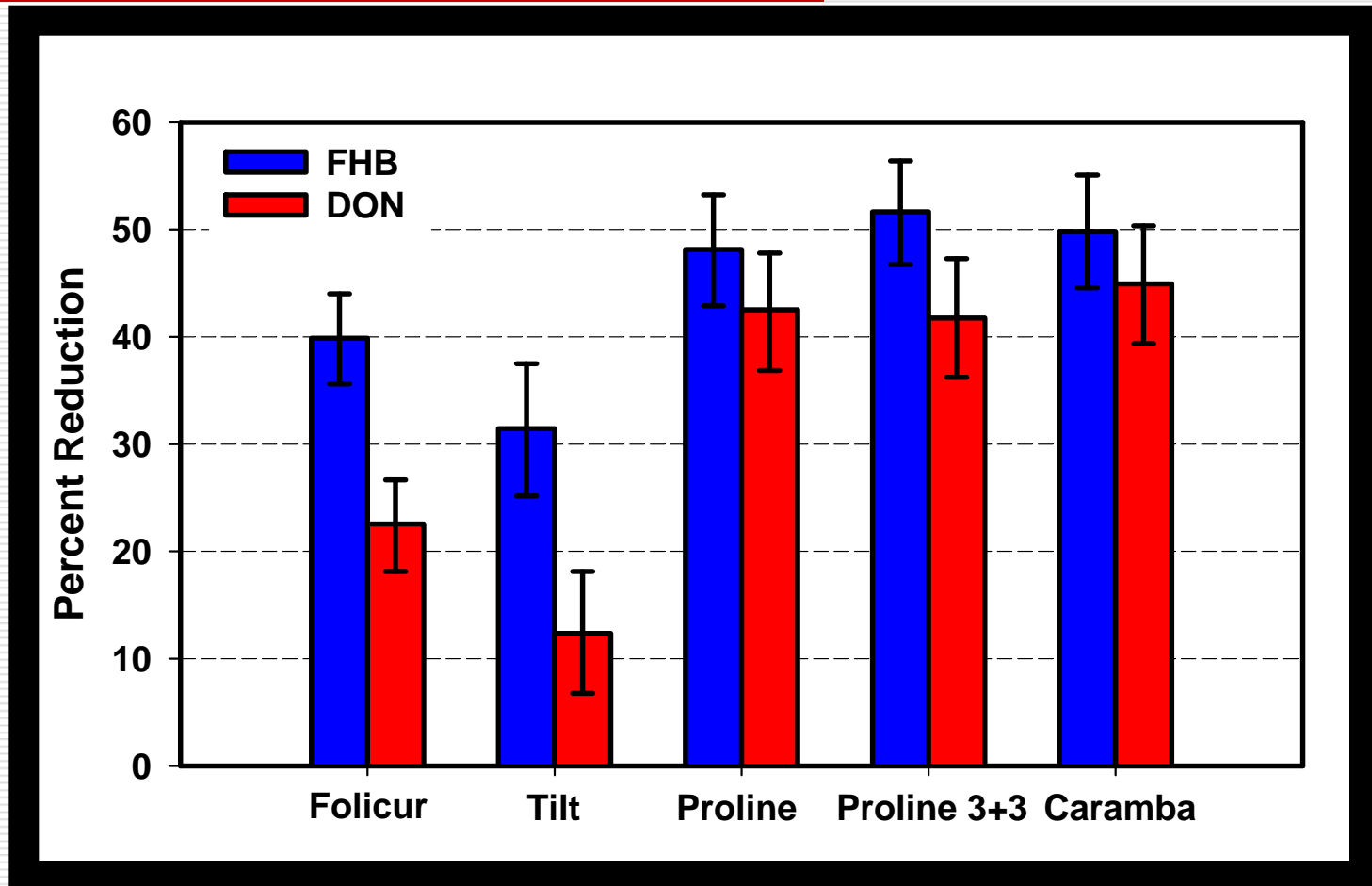
*Department of Plant Pathology*

*The Ohio State University/OARDC*

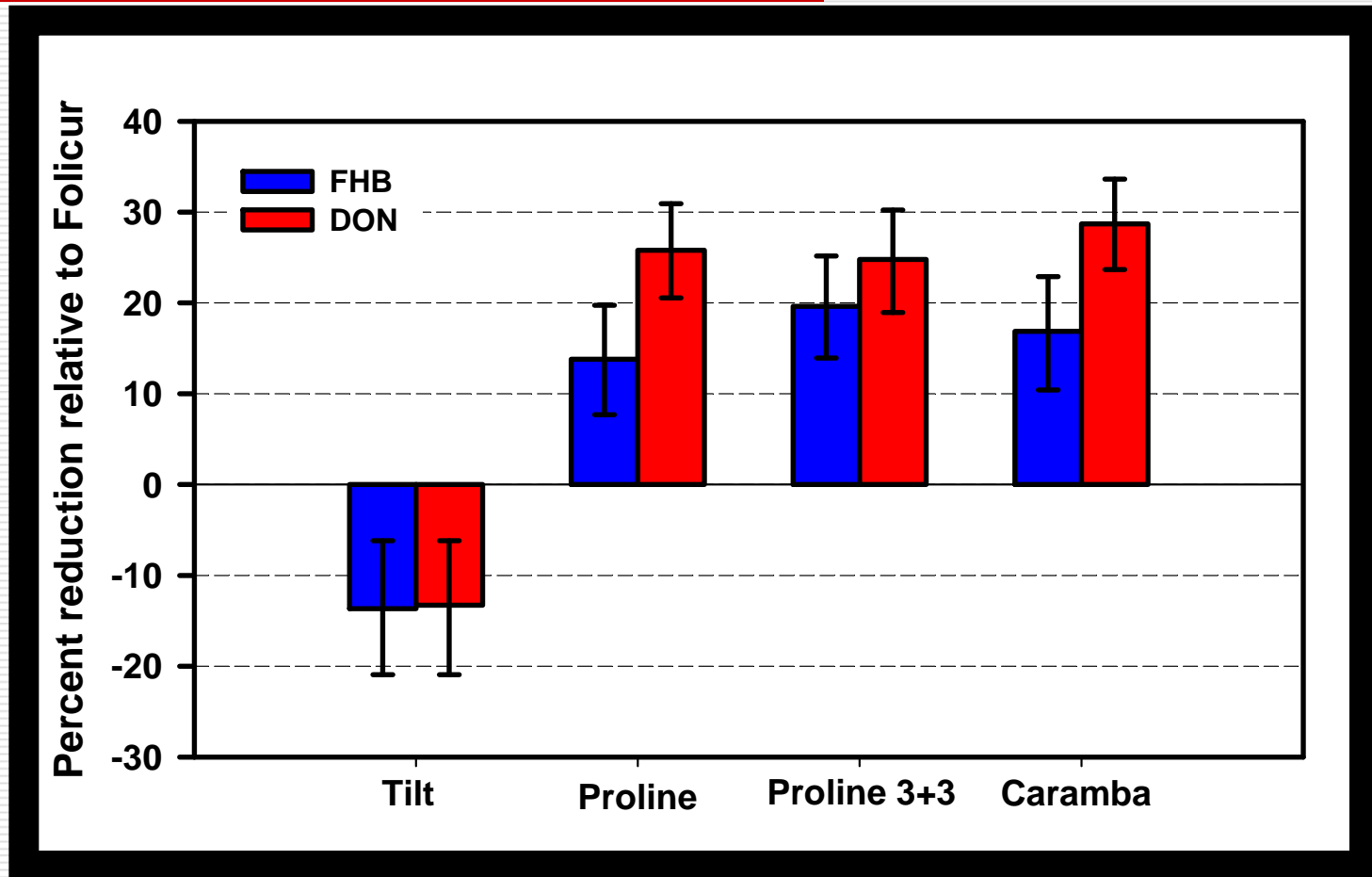
# Most Effective Fungicides

<b>Product</b>	<b>Active Ingredient(s)</b>	<b>Rate/A (fl. oz)</b>	<b>Head scab Rating</b>
<b>Caramba</b>	<b>Metconazole 8.6%</b>	<b>10.0 to 17.0</b>	<b>Good</b>
<b>Folicur 3.6 F</b>	<b>Tebuconazole 38.7%</b>	<b>4.0</b>	<b>Fair</b>
<b>Proline 480 SC</b>	<b>Prothioconazole 41%</b>	<b>5.0 to 5.7</b>	<b>Good</b>
<b>PropiMax 3.6 EC</b>	<b>Propiconazole 41.8%</b>	<b>4.0</b>	<b>Poor</b>
<b>Tilt 3.6 EC</b>	<b>Propiconazole 41.8%</b>	<b>4.0</b>	<b>Poor</b>
<b>Proline/Folicur 3+3</b>	<b>Prothioconazole + Tebuconazole</b>	<b>10.0</b>	<b>Good</b>

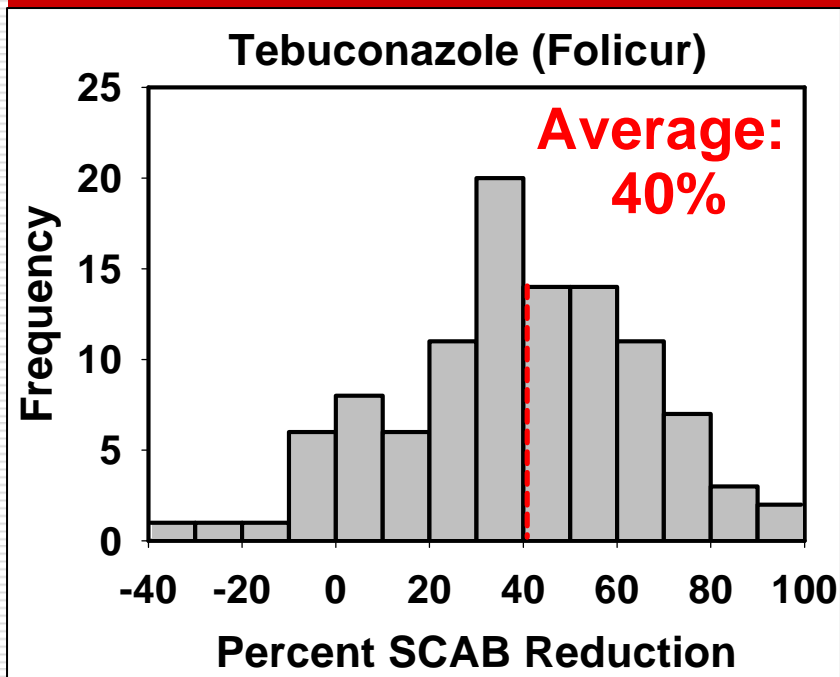
# Average percent scab (FHB) and vomitoxin (DON) reduction compared to the check



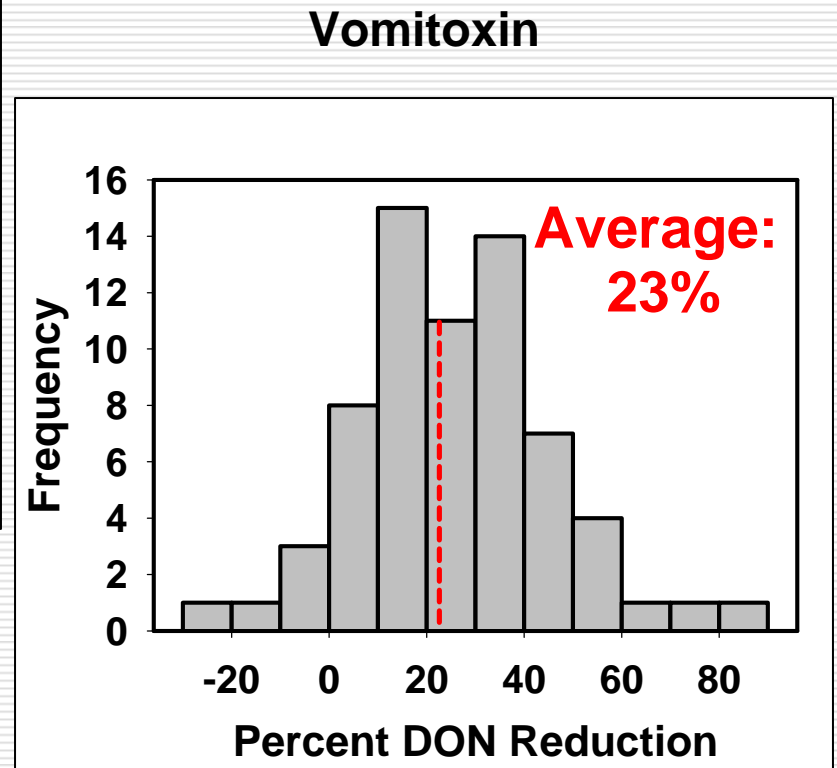
# Average percent scab (FHB) and vomitoxin (DON) reduction compared to Folicur



# High variability in Fungicide Efficacy



Scab



# High variability in Fungicide Efficacy

---

## Possible reasons of high variability

- **Local weather conditions**
  - ❖ Affect disease development and DON contamination
  - ❖ Affect fungicide efficacy
- **Local fungal population**
  - ❖ *Fungicide sensitivity*
  - ❖ Aggressiveness
  - ❖ DON producing ability
- **TIMING: poor application timing reduces efficacy**

# Timing is extremely important



[http://www.knowledgerush.com/wiki\\_image/6/6c/WheatFlower1.jpg](http://www.knowledgerush.com/wiki_image/6/6c/WheatFlower1.jpg)

**Correct time to apply**

**Flowering or Anthesis**

**FRESH anthers seen sticking out of florets**

**Late (less effective)**

**Anthers may still be seen sticking out of florets well after flowering is complete**

---

# **Use The Scab Risk tool as a Guide when Making Fungicide Application Decisions**

[\*\*http://www.wheatcab.psu.edu\*\*](http://www.wheatcab.psu.edu)





[About Us](#)  
[Disclaimer](#)



<b>Home</b>			
<b>Key items to obtain a prediction</b>			
<b>Model details</b>			
<b>Disease information</b>			
<b>Risk map tool</b>			

prediction center

## prediction center Wheat Fusarium Head Blight



Wheat spikes with symptoms of Fusarium head blight

Fusarium head blight or head scab is caused by the fungus *Fusarium graminearum*. The disease causes tremendous losses by reducing grain yield and quality in many wheat production regions east of the Rocky Mountains.

The goal of this experimental predictive system is to help growers assess the risk of Fusarium head blight in their region. Major outbreaks of Fusarium head blight are associated with specific weather patterns prior to flowering of the wheat crop. Researchers at Penn State University, Ohio State University, Purdue University, North Dakota State University, and South Dakota State University have worked together to develop models that predict the risk probability of an epidemic with greater than 10% severity based on observed weather patterns.


You can customize the forecast for your region and production practices by clicking on the wheat scab "[Risk map tool](#)" from the menu above.


# Fusarium Head Blight Risk Assessment Tool




**Flowering Date**



	S	M	T	W	T	F	S
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
MAY	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31	1	2	3	4	5
JUN	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	1	2	3
JUL	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
	1	2	3	4	5	6	7

 **Forecast Available**  
click on state to zoom in

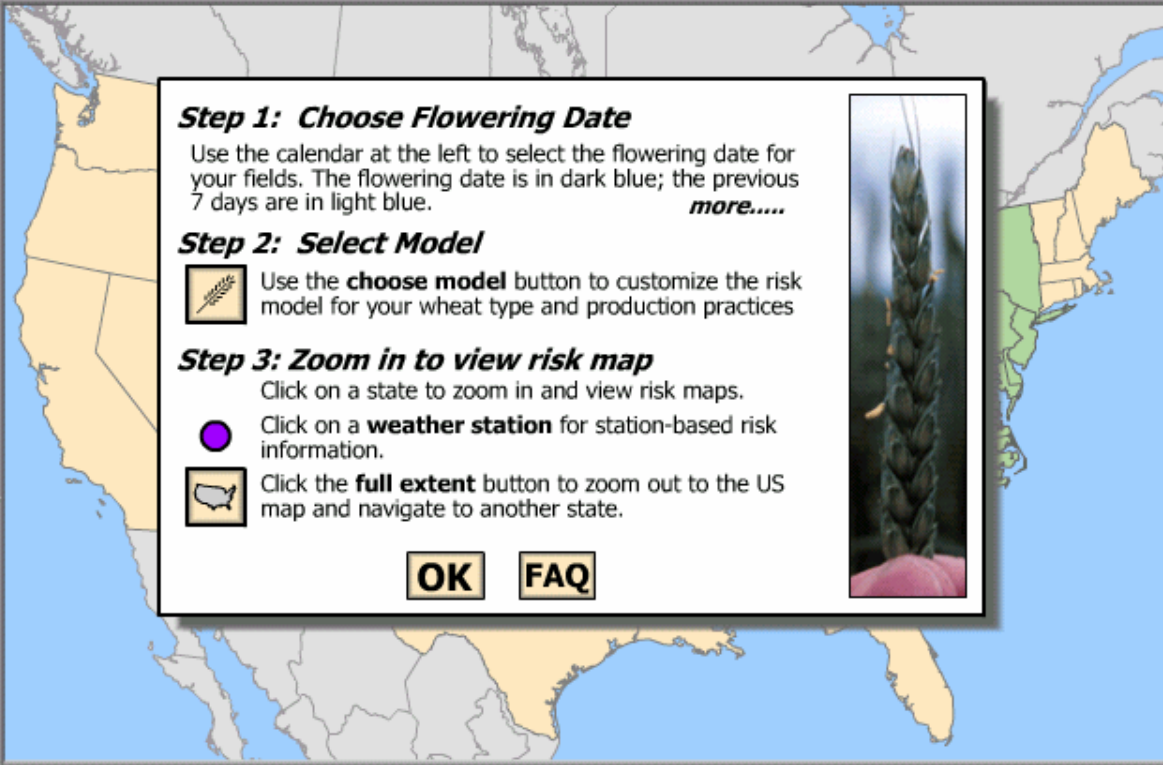
 **No Forecast Available**

**Step 1: Choose Flowering Date**  
Use the calendar at the left to select the flowering date for your fields. The flowering date is in dark blue; the previous 7 days are in light blue. *more....*

**Step 2: Select Model**  
 Use the **choose model** button to customize the risk model for your wheat type and production practices

**Step 3: Zoom in to view risk map**  
Click on a state to zoom in and view risk maps.  
 Click on a **weather station** for station-based risk information.  
 Click the **full extent** button to zoom out to the US map and navigate to another state.

**OK** **FAQ**



# Fusarium Head Blight Risk Assessment Tool

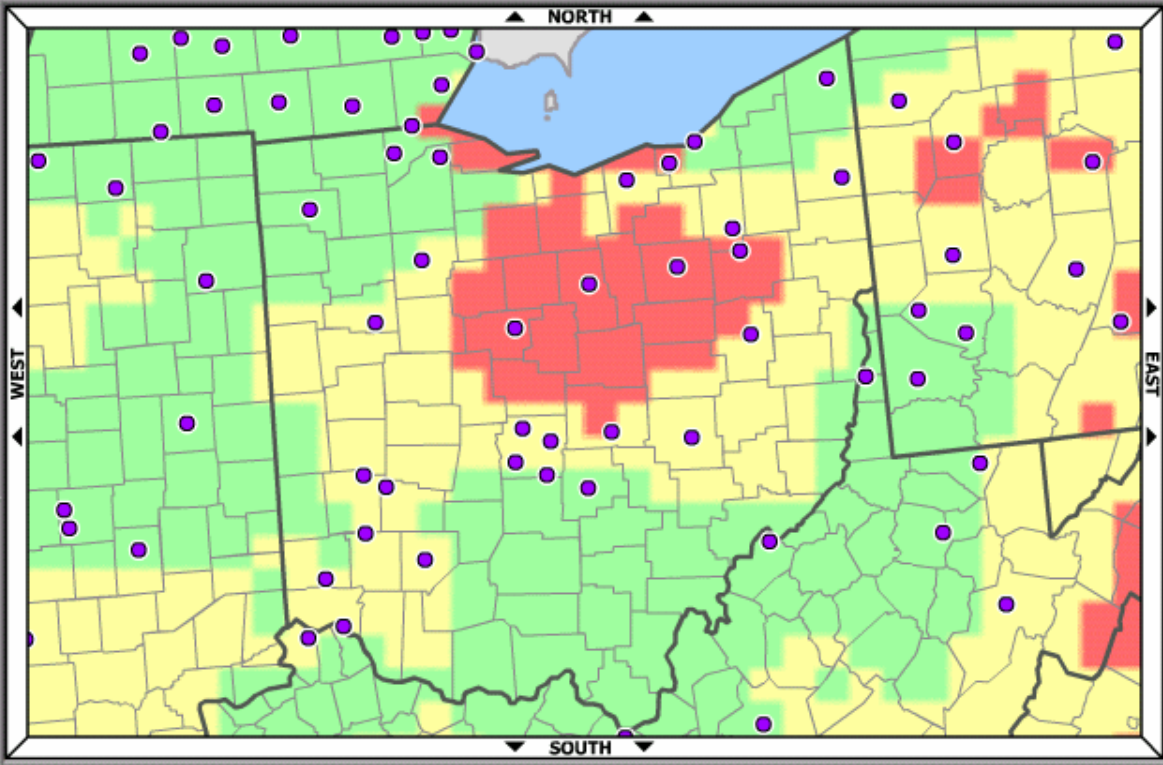


**Flowering Date**

	S	M	T	W	T	F	S
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
MAY	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31	1	2	3	4	5
JUN	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	1	2	3
JUL	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
	1	2	3	4	5	6	7

**Winter Wheat**

- High Risk
- Medium Risk
- Low Risk
- No Data
- Weather Station
- Station Inactive for selected model



# Summary

---

- Fungicides (triazoles) do reduce FHB and DON but results vary from one product to another.
- Proline, Caramba, and Proline+Folicur gave consistently better results than Folicur alone.
- DON may still exceed threshold levels in fungicide treated fields.
- For best results, apply fungicides **AT THE RIGHT TIME, AT FLOWERING**
- **INTEGRATED MANAGEMENT!!**

# Ohio Field Crop Disease

<http://www.oardc.ohio-state.edu/ohiofieldcropdisease>  
<http://corn.osu.edu/>

DEPARTMENT OF PLANT PATHOLOGY

*Dr. Anne E. Dorrance*  
*Dr. Pierce Paul*  
*Dr. Landon H. Rhodes*  
*Dennis R. Mills*



**Pierce A. Paul, Ph.D.**

Assistant Professor

Department of Plant Pathology  
Ohio Agricultural Research  
and Development Center

115 Selby Hall  
1680 Madison Avenue  
Wooster, OH 44691-4096

Phone 330-263-3842

Fax 330-263-3841

E-mail [paul.661@osu.edu](mailto:paul.661@osu.edu)

[www.wheatcab.psu.edu/](http://www.wheatcab.psu.edu/)

[www.scabusa.org/](http://www.scabusa.org/)