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NEWS RELEASE

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Fusarium, DON Cripple Wheat Industry in Southeast U.S.

East Lansing, MI— Fusarium head blight (FHB, scab) was of little concern during the last growing season in the Northern Plains, which produced one of its best wheat and barley crops ever. It was a different story east of the Mississippi River, however, where large amounts of rainfall made conditions ripe for FHB, which wreaked havoc on wheat yields and resulted in high levels of deoxynivalenol (DON) or vomitoxin. DON is a toxic byproduct of FHB that can make wheat unfit for milling, and barley unsuitable for malting.

Industry experts says FHB damage to farmers and millers in the mid-Atlantic soft red wheat producing region (North Carolina, Georgia, Virginia, extending to Kentucky and Tennessee) in 2003 was unprecedented, crippling grain flow patterns and sales.

Michael Pate, director of technical services at Midstate Mills, Inc., presented a summary of the problem at the National Fusarium Head Blight Forum, held recently in Bloomington, Minn. A North Carolina-based company, Midstate's business includes wheat flour and dry corn milling, baking mix blending, and animal feed production. Products are sold into a number of regional and national markets.

Pate, chair of the North American Millers' Association's technical committee, says that because of high DON in the 2003 soft red winter wheat crop in mid-Atlantic states, all major mills stopped sourcing wheat from that region last year in early November.

He explains that Midstate and other mills operate on fixed contracts with cake, pastry, cookie and doughnut makers, who pay for a specific amount for the flour they contract with their mill suppliers. If the local supply of quality wheat is insufficient, mills must source wheat elsewhere to produce enough flour to hold up their end of the contract.

"This might not seem like a significant issue to you...but let's say I'm selling half a million pounds of flour to a baking facility in North Carolina, and all my contracts are based on pulling wheat by truck within a 200-mile radius. Suddenly, your supply source is gone, and you have the tremendous added cost of shipping wheat as far away as 1,000 miles from Ontario by rail. And the main reason is DON."

Growers and mills in the region are also affected by the lost confidence of buyers. "You're dealing with the perception of our customers that our products are unsafe," says Pate, "and these customers are major players in the food industry."

In the past, it was thought that DON in wheat could be reduced to acceptable levels by the milling process, a concept called "milling loss," typically on the order of 50%. Thus, if raw kernels of wheat contained DON of two parts per million, the derivative flour of this wheat would typically test at 1 ppm or less in flour intended for human consumption.

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FHB, DON continued

In 2003, however, DON levels of wheat from FHB-infected wheat in mid Atlantic states weren't falling as much as expected during milling. For example, raw wheat that may have tested for 2 ppm DON would mill flour testing at 1.8 ppm DON. This would be too high to meet the federal advisory level of 1 ppm or less in flour intended for human consumption.

Pate says an investigation by various milling entities revealed that there probably never was a significant "milling loss" from separating the pericarp or hard outer covering from the rest of the kernel. "The apparent loss can be attributed to the removal by milling precleaning equipment of small shrunken kernels that had high DON levels," says Pate.

Particularly troublesome with last year's harvest is that plump kernels infected with DON weren't getting removed by the cleaning process, and thus posed a risk in entering the milling stream. And millers aren't going to take chances with flour that may exceed the federal DON advisory level. Even the livestock industry is careful about using feed tainted with DON. Pate points out that North Carolina is one of the nation's leading producers of pork and poultry.

"It's a matter of food safety," he says Pate. "If you cannot provide a safe food commodity to the end user, two things happen to you: you're not going to have any business, and lawyers are going to step in. Litigation is the watch word for what we do."

Pate notes that the federal guideline for DON in wheat is now just that; an advisory level. But with further problems, a DON limit could become law. "The government doesn't allow blending to lower aflatoxin levels in corn. The same would become true for wheat as well. Also, once an advisory level is changed to a statutory limit, if I have (flour) over 1 ppm DON, the government could have it destroyed," says Pate.

He reminded crop scientists at the National Fusarium Head Blight Forum of the urgency of their research. "My charge to you would be to get us a solution, and get it soon, because the future of our industry in the mid-Atlantic states is depending on it."

The U.S. Wheat and Barley Scab Initiative, which got underway in 1997, is a national research effort to find multiple solutions for controlling FHB and DON in wheat and barley.

At the research forum, scientists reported research results and advancements in variety development and uniform screening nurseries; epidemiology (how scab develops, spreads) and disease management; food safety, toxicology, and utilization; biotechnology; chemical and biological control; and germplasm introduction and evaluation.

A full report of research conducted under the U.S. Wheat and Barley Scab Initiative and discussed at the Forum is posted online at www.scabusa.org, under the 2003 National Fusarium Head Blight Forum Proceedings.

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Editors: For photos of Pate or a photo of wheat damaged by Fusarium, contact Sue Canty, USWBSI Networking & Facilitation Office, scabusa@scabusa.org ph 517-355-0271 ext. 183