Corn Yields Increase By Adding Nitrogen At Tasseling Time

COLUMBIA, MO.

"Potential corn-yield losses of 40 to 50 bushels per acre are showing up in large areas with heavy rainfall," said a University of Missouri soil scientist.

"This week I saw lots of yellow corn on a trip through northeast Missouri and neighboring counties in Iowa and Illinois," said Peter Scharf on a weekly MU Extension agronomy teleconference.

"It is close to 'last call' for applying rescue nitrogen to cornfields," said Scharf, MU Extension soil specialist. "But there is still time to add nitrogen to increase yields."

Nitrogen can be added until about July 15 in northern Missouri, Scharf said. In his research he saw yield increases with nitrogen fertilizer added at tasseling time.

Many farm service companies are equipped to apply nitrogen on tall corn. Nitrogen can be applied from the air or with "high-boy" equipment that rides over the top of the corn.

Extensive rains falling after nitrogen was applied to cornfields has caused denitrification or leaching from the soil.

Scharf maintains a "Nitrogen Watch" website that shows most well-drained soils in eastern Missouri as being in "danger." More than 16 inches of rain has fallen across the area since April 1. The earlier the nitrogen was put on, the higher the risk of loss.

Some areas around Kahoka, Mo., and Keokuk, Iowa, have recorded more than two feet of rainfall. In northern Missouri, the heavy-rain area extends from Bethany, Mo., to the Mississippi River.

The greatest loss potential is in far northeast Missouri, but close behind might be river-bottom fields in St. Charles County, Scharf said.

Extensive areas of southeast Missouri have had high rainfall. "Most producers there apply nitrogen as a side dressing to the corn rows. That is less vulnerable to loss as nitrogen is applied after heaviest rains."

Deep soil tests can determine the nitrogen in the soil. But that takes time, trouble and expense. If the corn appears yellow from nitrogen stress, it can use some added nitrogen.

"If a field shows signs of significant yellowing, it will pay to apply nitrogen, even this late," Scharf said. "If yields are cut by 40 bushels, that makes a difference between profit and loss."

Well-drained soils, such creek and river bottoms, are most vulnerable to nitrogen leaching, Scharf said. "Even the poorly drained soils across northeast Missouri are showing stress," he added.

Last year Scharf conducted six field trials, applying nitrogen after stress symptoms were seen. Yields increased by an average of 34 bushels per acre.

Nitrogen was applied to corn at tasseling, when ears were pollinating. "I'd prefer to do it sooner, but if corn needed it I'd keep applying nitrogen until two weeks after tasseling," he said.

Producers should monitor cornfields for signs of yellowing. Corn with potential for high yields will be dark green.

In addition to the Missouri map, the "MU Nitrogen Watch" website has a Midwest map showing danger zones from eastern Nebraska through Ohio.

Ten counties in the three-state region around northeast Missouri are the worst in the nation, Scharf said. Δ