

Several factors impact yields with continuous corn

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PECATONICA, Ill. — Although farmers have been growing corn following corn for many decades, continuous corn didn't yield very well in Illinois last year.

"We first ventured into continuous corn after World War II, when farmers had nitrogen fertilizer available and then weed control and insect control," said Emerson Nafziger, University of Illinois Extension crop

production specialist. "I've been studying continuous corn for a number of years, and we were going along pretty well thinking we could do continuous corn without too much problem," added Nafziger, who spoke during a crop management update meeting. "Then last year threw a wrench in that."

The worst yields for continuous corn occurred in areas that were pounded with rainfall.

"Continuous corn typi-

cally doesn't take stress as well," Nafziger said.

Nafziger discussed a continuous corn versus rotated corn study at the U of I research farm at Shabbona that includes seven years of data.

"There is about a 30-bushel difference between the continuous corn and the rotated corn," he reported. "We put 40 pounds more nitrogen on the corn following corn, versus the corn following soybeans, so these plots aren't short

of nitrogen." Nitrogen won't fix the problem, Nafziger stressed.

"Typically you can't get the nitrogen rates high enough to make continuous corn yield the same as corn after soybeans," he noted. "I don't think the big differences we saw were from nitrogen. It was really more water stress-related and root stress-related. I don't think nitrogen availability was a big part.

"The soybean yields benefited about three bushels when following two years of corn versus one year of corn. That makes the corn-corn-soybean rotation look pretty favorable."

Last year at the Urbana research location, the continuous corn took a 60-bushel yield hit, Nafziger said.

"We had a lot of issues a year ago that really hurt our continuous corn," he recalled. "There was very little tillage done in the fall and most of the tillage wasn't done very well — we left a lot of residue on the surface."

In addition, fields were rutted and there were compaction problems.

"We did compaction in fall '08, spring '09 and fall '09, and during the spring 2010 we did precious little to relieve it," the crop production specialist said. "To get good relief of soil compaction you need to do shatter and you can't shatter mud."

Farmers tried chiseling last spring and burying the residue helped, Nafziger said.

"Even though we had three weeks without rain in April that let us get our corn planted, it didn't put the soil in wonderful shape," he noted.

The autumn of 2010 provided farmers lots of opportunities to complete tillage.

"I don't think I've ever seen Illinois as tilled in March as this year," Nafziger said.

The U of I Extension specialist discussed a research trial that compared strip-till and chiseling with continuous

corn. "We're really putting strip-till to the test," he said.

"On average, there was about a one-bushel yield advantage with the strip-till. But that doesn't mean I think strip-till is a big solution. When strip-till yields the same as tilled, that's a positive thing."

However, according to Nafziger, strip-tilling is not suitable for every situation. "A lot of strip-till is done in soybean stubble because it is much easier to make the strips," he said. "Remember, if it's too wet to chisel, it's too wet to make strips, and that applies in the spring, too."

The research that focused on planting date and population rates showed population responses don't depend much on planting date, Nafziger reported.

"We have had times when very early April planting has decreased yields but that doesn't happen often," he said.