

Crop Production

Make most of yield potential

As crop technology has improved over the past decade, farmers have been asking this question: Just what is the built-in yield potential for that corn or soybean plant?

In the world of crop management, final yield is a kind of "sum of minuses," as weather and other conditions can steal bushels from that final number. Plant breeders agree that built into most elite lines of soybeans is the potential for 100-bushel-plus yields, and for corn, 400 bushels and more is waiting on tap.

Plant breeders aren't stopping there, though. Randall Nelson, a USDA soybean geneticist, has done work with exotic soybean varieties in an effort to bring higher-yielding genetics into the crop.

"Several breeders around the country have been working with exotic lines to increase yield potential, but what we haven't been able to prove yet is whether the genes we are finding in these exotic lines aren't already in some commercial varieties," he says.

With continuing research, genes not in commercial varieties that can increase yield likely will be found, but even without this new genetic input, soybean breeders are still developing higher-yielding varieties, according to Nelson.

If the genes are in there, why is the national average just 43 bushels? Management is an important part of unlocking soybean yield. With the right work, it's possible to line up better numbers when combines roll.



Getting a good start

"First thing you have to do to boost soybean yield is get a uniform stand," says Kevin Cavanaugh, director of research, Beck's Hybrids, Atlanta, Ind. "And you want to get the crop off to a strong start early."

The management of timely planting to get a uniform stand, combined with the technology available to boost plant health, can improve yields, Cavanaugh says. He adds that it's important to select varieties resistant to key problems on your farm, from phytophthora root rot to sudden death syndrome.

Beck's, which does a lot of crop testing on its own plots, has also found a benefit to preventive fungicide use, but the company is still researching that for 2006.

"We've had a dealer tell us that spraying fungicide on his soybeans, even though they looked healthy, gave him a 4- to 7-bushel increase. There may be foliar diseases we're not seeing in the crop that get taken care of by this practice," Cavanaugh says.

If you're looking for the best time to spray a fungicide, Cavanaugh notes that timing the application at R-1 is probably the general recommendation.

Corn gets boost

While a lot of attention has been paid to boosting soybean yields, corn could benefit, too. With the national yield average at nearly 148 bushels in 2005, there's potential for increase.

Cavanaugh says the biggest issue is timing pollination. "This is a critical period for corn and can really impact yield," he says.

Yet getting that crop off to a good start requires good management, notes Cavanaugh. "You still need a uniform stand. If you don't, you'll get uneven and smaller plants that act like weeds, and these will greatly impact yield."

He adds that a lot of the genetic work in corn since the early 1900s has focused on population tolerance. Today's higher-population crops don't actually produce any more kernels per plant.

"It's just that we have tripled the population those plants can tolerate to get that higher yield," he says.

Cavanaugh adds that during the 2005 drought, Illinois farmers were surprised because their crop yields were higher than many expected. He says that's because the new-genetic plants all had ears. They may have been small, but there were kernels on almost every plant.

Teaming management with technology offers the best approach for top yields, he says.

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