

Advertisement

*In EPA-designated cotton growing counties, a 20% separate refuge must be planted with Optimum® AcreMax® Xtra and Optimum® AcreMax® products.



Herculex® Insect Protection technology by Dow AgroSciences and Pioneer Hi-Bred.® Herculex and the HX logo are registered trademarks of Dow AgroSciences LLC.



Liberty®, LibertyLink® and the Water Droplet Design are trademarks of Bayer.



® Roundup Ready, YieldGard and the YieldGard Corn Borer design are registered trademarks used under license from Monsanto Company.

Some Optimum AcreMax, Optimum AcreMax RW and Optimum AcreMax Xtra Insect Protection products are not resistant to Liberty herbicide. Please check the seed label or contact your sales professional for more information.



To protect the usefulness and availability of these technologies for the future, growers must implement an Insect Resistance Management (IRM) program as specified in product use guides. For detailed IRM requirements for products with in-plant insect resistance, refer to the appropriate product use guide, available from your Pioneer sales professional or on the web at: www.pioneer.com/IRM.



The DuPont Oval Logo is a registered trademark of DuPont.®,™,SM Trademarks and service marks of Pioneer. All purchases are subject to the terms of labeling and purchase documents. © 2012 PHIL AMFAM026048P151

Hybrids for narrow rows



CORN QUESTION: “There are conversations going on between seed companies and equipment manufacturers, trying to figure out where corn-row spacing and higher plant populations are headed,” says Myron Stine of Stine Seed Co. “We can create the genetics for ultra-narrow rows. Farmers need the machinery to plant and harvest it.”

By ROD SWOBODA

THIS past spring, Stine Seed Co. planted 2,500 acres of corn in a 12-inch row width in central Iowa. Most farmers plant corn in 30-inch rows. The goal of growing ultra-narrow row corn is to capture a potential yield advantage. At a population of 51,000 kernels planted per acre, each plant in the 12-inch rows had about 10 inches between plants.

A field near Perry, ending up with 49,000 plants per acre at harvest, averaged 242 bushels per acre in 2012, an extremely dry year. Very little rainfall occurred on that field. The cover story of the October *Wallaces Farmer* reported the results. If you tried to cram such high populations into traditional 30-inch rows, you’d end up with plants 3 inches apart within the row and competition between plants.

Ultra-narrow rows and equidistant spacing reduces plant-to-plant competition for sunlight, water and nutrients in the soil, says Myron Stine, vice president of sales for Stine, based at Adel. His father, Harry, president of Stine Seed, began testing high corn plant populations 15 years ago.

The average corn population in Iowa is 34,000 to 36,000 plants per acre in 30-inch row width. In a year with favorable weather, many such fields will yield 200 bushels per acre. But if you’re aiming for 300-bushel yields or higher, you have to push the plant population up, says Myron. “You can’t do that with just any hybrid,” he stresses. “You have to do it with a hybrid that responds to higher plant populations, one that has the right genetics.”

Stine research has sorted genetic lines and is developing hybrids bred specifically for planting in narrow rows (such as 20 inch, 15 inch or 12 inch) at high populations. The company has an extensive testing program and sells some corn seed designated as HP, or High Population, hybrids.

Evolution of narrow rows

Stine has been growing both corn and soybeans in a 22-inch row width for many years. “The reason we ended up in 22-inch rows was driven primarily by seed corn production,” explains David Thompson, national marketing director. “Seed corn is a shorter plant than field corn, and has a

Key Points

- Certain hybrids respond better to ultra-narrow-row, high-population corn.
- You can’t plant just any hybrid and achieve high yields at highest populations.
- Farmers in future will be choosing hybrids based on row width and population.

narrower shape and architecture. It made sense to move the plants closer together to shade rows a little sooner and capture more of the sunlight falling on each acre. That was the primary driver for going to rows narrower than 30 inches.”

Like all farmers, Harry wanted to keep things as simple as possible and wanted a planting system that was consistent between corn and beans, so he switched everything at that time — seed corn, soybeans and field corn — all to 22-inch rows. “This year we did try some seed corn production in the 12-inch row width, as well as the commercial corn,” says Thompson.

By putting inbreds in narrow rows, Stine can see which corn lines respond to narrow rows and high populations. The company also tests the hybrid corn they develop in narrow rows. If you’re going to push a corn hybrid to a higher population in 12-inch rows, you need to have evaluated it in narrow rows first. You can’t really test the hybrid in 30-inch rows and say it’s going to do fine in 12-inch rows. “You’ve got to put it in 12-inch rows and try it,” says Myron. “You’ve got to test the corn in the environment you intend for it to be grown.”

How much more yield?

That targeted approach to corn breeding is central to the question farmers are asking. How much more will narrow-row corn yield compared to 30-inch-wide rows? “We’re not telling everyone today they need to go to 12-inch rows,” says Thompson. “What we’re saying is we think this is where corn production is headed in the future. If it takes us seven or eight years to develop the right genetics, then we had better be testing the corn lines in narrow rows now, so in the next decade we’ll have the hybrids you want to plant in the environment we think you’ll be in. That’s where we are presently in developing narrow-row corn.”

Regarding plant population testing,

Stine research pushes the limits to see where yield starts to drop off with different hybrids, or where they start to see problems such as lodging, for example. “With genetic development, you want to find things out before you put the seed in the bag,” says Myron. “You want to test it in the conditions and practices you anticipate growers will be experiencing.”

The Stine hybrid that responded so well to ultra-narrow rows despite the droughty weather of 2012 is Stine 9733. “We tested that hybrid in 2011 at 36,000 plants per acre, and 45,000 and 51,000 plants,” says Thompson. “We wanted to measure its response. We also tested several other hybrids we thought had potential for high populations. Stine 9733 achieved the highest yield.”

Put hybrids to the test

Once Stine develops inbred crosses in the company’s isolation block process, the resulting hybrid seed goes into a multi-location yield trial program. There they start evaluating the yield of the hybrid, a combination of the two inbred lines used to make the cross. If the hybrid shows merit, it’s advanced to elite testing, going to more locations in more replications, and multiple years of data are produced. “It takes five to six years of data before we settle on a hybrid we feel comfortable putting in a bag and selling,” says Thompson.

In the future, Myron and Harry believe narrow-row corn and high populations will be the norm to consistently achieve 300 bushels per acre or more. While Stine 9733 is the current star in the company’s high population hybrid lineup, Stine has other hybrids recommended for higher populations, too. And they have hybrids that are very conventional in how they yield in response to population. These are best planted at say 35,000 to 40,000 kernels per acre instead of 51,000. “They are good, solid performers,” says Thompson. “But they aren’t the best choices for the very high population, narrow-row environments.”

To learn more about narrow-row corn and choosing hybrids for high populations, go to www.stinseed.com.

■ December issue: How they’re planting ultra-narrow row corn.