Here comes CystX

CystX claimed as solution to SCN. You wish.

For **statement on CystX** by Prof. Greg Tylka, Iowa State University, click here

For recent Field Reporter on SCN, click here.

Did you hear that the soybean cyst nematode problem has been "whipped"? It was certainly all over the news this week: The new super-resistant CystX soybean, resistant to 150 SCN types, will be available for planting starting next spring.

You might be thinking you lucked out, since maybe you never did get around to testing for SCN in your fields. Now, this new line of soybean genetics will get rid of those pesky pests forever.

If only it was that easy.

What is "CystX"?

CystX isn't that new, really. "Hartwig", the soybean variety giving the super-resistance genetics to CystX, has been around for a decade. The bad news with the Hartwig variety was that it had a lousy yield. Worse yet, you couldn't get the darn thing to breed to anything yielding better and anyway, it was maturity group zone V, so we never saw it in Iowa anyway.

The good news these days is that a research team at Purdue University finally figured out a breeders trick to get Hartwig to cross with a good commercial variety. The resulting crosses (non-GMO, by the way) that carry the Hartwig resistance to SCN are the ones being called CystX, and they are the foundation stock for whole new lines. "It crosses very, very easily," said Virginia Ferris, one of the Purdue research team.

The players

It takes a village to bring new genetics to the market. Here are some of the CystX people:

- **Developed Hartwig variety**, PI 437654: Edgar E. Hartwig of Mississippi State, better known as Mr. Soybean, who died in May 1999.
- **Made first Hartwig cross to a commercial variety**: Drs. John Ferris, Virginia Ferris, Jamal Faghihi and Rick Vierling of Purdue University.
- **Sponsored Purdue research**: Indiana Soybean Checkoff
- **Won exclusive CystX license and own "CystX" trademark**: Access Plant Technology, Inc., of Plymouth, Indiana.
- **Offering the first CystX seed** for planting in 2001: Midland Genetics Group of Kansas.
- **Other seed companies** offering CystX: to be announced.

Seed companies lined up to license the genetics, and are already making their own CystX lines. The first CystX beans, a late maturity group zone III, are ready to go. "That will be available in 2001 for the planting season," said Clyde Sylvester of Midland Genetics Group. He said that their next varieties will incorporate Round-up Ready resistance and have different maturities.

Beyond CystX

Despite glowing press reports, CystX, alas, is not the end of the SCN story.

"This new SCN-resistant variety might turn out to be a good tool for use in combating SCN, but it certainly is not the cure," said Greg Tylka, professor of plant pathology at Iowa State University. "If CystX varieties that are adapted for use in Iowa become available, I will recommend that growers use the varieties as a possible substitute to the hard-to-find Peking-derived SCN resistance in our recommended management rotation."

In other words, you can't stop worrying about SCN yet. "Bugs have always won," agreed Rick Vierling, member of the Purdue University team. "It is our job to try to keep ahead of them."

Lawrence Young of the USDA Agricultural Research Service has been looking at the Hartwig variety for a while--more importantly, he has been looking for SCN that can attack it.

He found some.

"It is present at low numbers in Tennessee soybean fields," Young said. A report he issued in 1998 described a laboratory strain of SCN that he developed as a research tool: it's not afraid of Hartwig soybeans; it feeds on them. He mimicked exposure of local fields to the Hartwig soybean plants to find and grow the strain. Now he uses the Hartwig-attackers to look for even tougher soybean varieties.

This doesn't mean that CystX is no good; it's just a reminder that those pesky SCN nematodes are really great at what they do: survive. "After a couple of years of experiments, the work that I've done suggests it will succumb," Young said. Farmers, he said, need to be prepared, and seed dealers, too. "I'd say in five years (after introducing CystX) they'll start finding resistance," Young said. "We will need a new source of resistance at that time. It's a continuing process."

The early studies of the Hartwig/CystX varieties show no cysts on plant roots, but Young points out that doesn't mean none exist. "The same thing happened in Tennessee. It took a specific effort to find those few nematodes that could (attack Hartwig)," Young said. "It takes very careful looking to find that one in one million."

How tough is your Cyst-X?

Scientists or seed companies interested in using Lawrence Young's Hartwig-hungry SCN to test their CystX or other soybeans can write to him and make arrangements. He has already distributed the nematodes to university scientists in Missouri and Arkansas.

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This doesn't mean we have to worry about finding Young's super-SCN in Iowa; it just means that the first introduction of Hartwig genetics into Iowa--remember, it was maturity group zone V and hasn't been here--may start the selection process.

"They need to keep sampling," Young said. "That's going to prolong the time to select the nematodes." Young reports he has identified at least two other soybean varieties that go beyond Hartwig. In other words, even if SCN populations start attacking CystX varieties, there are other genetics to put into the mix. He'll present those results at a scientific meeting in June.

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