

Know *Your* Fields

Paying Attention To Details Can Boost Soybean Yields

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Varieties, pests, flooding tolerance and other issues related to helping farmers produce high dollar soybeans were topics discussed recently by Grover Shannon, University of Missouri Delta Center soybean breeder.

"Farmers need to take advantage of that because the price is so good and who knows how long this opportunity will last," he said. "As far as varieties, there's a lot of varieties out there, with a lot of emphasis on Roundup 2, since Roundup 1 is beginning to go out of the picture and a lot of companies may be dropping their Roundup 1. However there's still some good Roundup 1s available and they still do yield well."

He said people also are interested in conventionals, because the seed is cheaper, they can get a premium at the elevator, they're already having to use conventional herbicides anyway because of resistant weeds and it's an opportunity for them. Many have the perception that conventional beans don't compete but there are some very good ones, farmers just need to look for them. In some variety tests where they compare Roundup and conventional in the same test, often conventionals are at the top of the test.

"Another option is Liberty Link," Shannon suggested. "Liberty Link is kind of a new technology and the breeding probably has not caught up to where we are. The yields may be down just a little on the Liberty but you don't have a lot of options once you get these resistant weeds and people have to use other chemistry. Farmers just need to be careful how they use them to make sure they're good for them."

He also covered was soybean cyst nematode, adding that farmers don't always pay attention like they should. Testing is important, and farmers need to really know what kind of nematode situation they have. There are two basic nematodes down south that really affect the crop, and they are soybean cyst and root knot.

"Sometimes I think that with all these sandy soils we have that root knot is actually worse," he added. "But these are two serious nematodes that people need to pay attention to. Instead of making 40 bushels in a field and think they're doing good, farmers could be making 50 or 60 if they choose the right variety. The main thing we're having a problem with is cyst in the south since the races have shifted; and all the resistance in varieties can be traced back to two plant introductions. They're no longer as effective against the nematodes because their race is 2 and 5. Three and 14 are what most of the varieties are resistant to, so most varieties are less effective against 2 and 5.

"More **Hartw** type resistance in our cyst nematode varieties is needed," he continued. "There are a few varieties out there with race 2 and 5 resistance but not enough. A lot of these are conventional, at least in the southern United States. If you do have a multi race problem and you have a root knot problem in the field, there are some varieties that have resistance to both. Even if it's just the old cyst resistance you have, you're better off to go ahead and pick a variety that has both cyst and root knot if those are both problems in your field."

Multi race resistant varieties are now coming out and there's some promising ones in late Group IVs early Vs. Some of these are Dudley, Progeny 5191, Armor 49C3 and Jake. These are all excellent conventional varieties with multi race resistance to cyst and root knot.

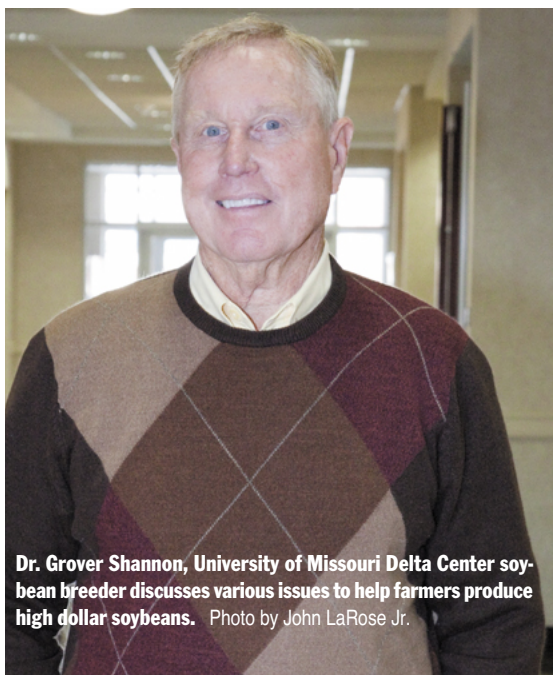
"However we need more RR and liberty link, especially in early maturities," Shannon said. "I know of two that are multi race cyst resistant, and resistant to root knot. That's Pioneer 95Y60 and also MPV 5214NRR. They're both Roundup 1 but if people want a Roundup variety, these are the only two that I know of."

There is a weakness for nematode resistance in the Group IVs. The University of Missouri is developing some Roundup 2s, 1s, and conventional that are very promising that have multi race cyst resistance as well as root knot. That is some of the research that farmer checkoff dollars are supporting.

Shannon also discussed flooding tolerance. There are some varieties that are better than others for flooding and these have been rated every year.

"I like to rate them three years to know if they're tolerant because one year they can be good and the next not so good," he said. "There are some that are consistent, I have a little publication with this data on a sheet, and I found about 23 Group III, IV and V that are more tolerant than others. None of them are perfectly tolerant, they all show damage, but one of the things we're doing in breeding is we're increasing flood tolerance. A lot of these tolerant varieties will lose 30 percent of their yield in very severe conditions, but we're breeding varieties that show only a loss of maybe 5 percent to 10 percent of yield in a severe flooding situation."

Much of Shannon's research is supported by the Soybean Checkoff. While some may say



Dr. Grover Shannon, University of Missouri Delta Center soybean breeder discusses various issues to help farmers produce high dollar soybeans. Photo by John LaRose Jr.

drought is more important and it is, flooding is important where people irrigate. Also, many follow rice on these zero grade heavy soils and that is an issue.

Dr. Joe Henggeler, University of Missouri irrigation scientist, and Dr. Ray Massey, University of Missouri extension professor, surveyed farmers over a 15-year period from 1997 to 2011 and they found some interesting things. One is you can increase your yield by bedding, and a lot of people are doing that. If you can bed your ground it improves drainage, it's going to improve emergence, water flows out better especially under flooding. If you can just get a bed up, keep those beans out of the water, they're going to do better.

"Another thing is laser leveling," Shannon said. "These guys that level their fields, they just get better drainage. They're putting the land to grade with these lasers and they're doing really well. They are getting three to six bushels more per acre with laser leveling. That's something that's going to improve your yield. Another thing is lime. A lot of people have ignored lime but guys are getting a full season and double crop, they're improving their yields at least four bushels per acre with lime under full season and double crop situations. Lime is a very important ingredient and if you can keep liming where needed, it's going to help your yields. All these things can play a role and improve your yield.

"To summarize, varieties are something a grower can control," he said. "A farmer needs to know what his situation is in that field. If he knows he has a cyst problem or flooding problem, he can choose a variety that can curb his loss. Some varieties do better under drought, some of them have more charcoal rot resistance. Know your situation. Choose the right variety for that situation and you'll have a lot better return, improve your profits and be able to take advantage of these good soybean prices." Δ

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