Flag *The* Technology

Studies Show Resistance Can Be Controlled In Continuous Crops

BETTY VALLE GEGG-NAEGER
MidAmerica Farmer Grower

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Rice and soybean weed control took the spotlight when Dr. Bob Scott, extension weed specialist with the University of Arkansas Division of Agriculture, explained the trials underway there recently.

One trial is a three-year rotation study to evaluate the effects of different rotation programs on the Clearfield rice system. The program includes everything from continuous Clearfield rice where only the ALS technology is used to a rotational system where one year Clearfield rice is grown followed by two years of soybeans where all the red rice is controlled before another year of Clearfield rice. This trial is to address concerns about the development not only of ALS resistant red rice but also ALS resistant barnyard grass.

Dr. Bob Scott, extension weed specialist with the University of Arkansas Division of Agriculture, explained the trials underway there on rice and soybean weed control.
Photo by John LaRose, Jr.

Although this was a rice field day, the topic everyone was concerned about was Palmer pigweed and glyphosate resistant Palmer pigweed.

"We had a lot of struggles controlling this pest in 2011; of course everybody that grew conventional or Roundup Ready beans were pretty much relying on a residual herbicide," Scott said. "It quit raining early into the planting season, so from that point on we have struggled. The University recommends a good preemerge program, doing whatever it takes to get that preactivated, and then coming back with either FlexStar or FlexStar GT which contain the active ingredient fomesafen. That's really the only product we've looked at in Roundup Ready and conventional beans that provides adequate control of about a two- to three-inch Palmer pigweed. For that reason we don't recommend Prefix as a pre."

One thing that surfaced last year was rotational issues. Farmers using Prefix followed by FlexStar, which is just too much fomesafen, found that interferes with the rotation intervals to crops like corn, milo and also rice. Care needs to be taken with that.

Scott also discussed the new LibertyLink technology in soybeans and Ignite herbicide.

"This is going to be a very valuable tool for us in the fight against pigweed," he said. "We can now use up to 66 ounces of Ignite in-season on LibertyLink beans; however the University strongly recommends the use of a residual product. Any residual that has activity on pigweed in that system will just make that program look a whole lot better.

"Also, we don't want to get back into the situation where we're solely relying on Ignite for the control of Palmer pigweed," he continued. "That could cause resistance developing to gluphosomate, the active ingredient in Ignite."

The rotation study that was underway showed some promising results.

"This is year two of our rotation, and one of the things we've already observed is we can effectively control red rice with either a Roundup Ready or LibertyLink soybean program," Scott said. "So, we went back and revisited the old University program called 'Get the red out.' That involved soybean rotation and the use of alternative herbicides. We've revisited that in these plots and showed effective control with both glyphosate and Ignite and the LibertyLink system. We used a residual herbicide in both of those programs in keeping with our resistance management strategy."

An increase in the number of red rice plants has appeared in the continuous Clearfield rice. The population is not that high, but it is similar to what has occurred in the state.

"Inexplicably, after 10 years, we thought we'd have a worse problem than we do," Scott said. "We're already seeing that same thing in this plot work where the continuous Clearfield program has a little bit more red rice coming through it but not as much as you would expect."

One treatment undertaken is the delayed planting of continuous rice where the first flush of red rice was allowed to germinate. The planting date was still early enough to be in a good agronomic window.

"Simply by doing that, we reduced our red rice populations by about 60 percent," he said. "So we've already shown that in a continuous system we can do some good by using a cultural practice such as delaying the planting date."

2011 was year two, and this year this plot will go back into Clearfield rice, so after three years researchers will learn the end result of the rotation strategy on all the different programs.

In the meantime, Scott urges farmers to do all they can to protect the Clearfield technology and avoid resistance buildup.

"One reason we are concerned is because we don't have a lot of new tools coming in rice," he said. "We feel like we're somewhat abusing this technology, some places worse than others, and continuous rice is one of those areas where we've had a pretty strong concern about not only the development of outcrossed or ALS resistant rice, but also for ALS resistant barnyard grass.

"So the take home message from this trial is crop rotation works, fallow works, even a delayed planting strategy works," Scott reported. "We're just trying to get growers to think about a resistance management strategy for their Clearfield acres."

In closing, Scott discussed the flag technology that the university has developed.

"We've got a lot of flags fluttering out here that you may have seen," he said. "The university has what I consider a pretty successful program this year that we launched called flag the technology."

He had discussed different herbicide technologies, including Roundup Ready, LibertyLink and Clearfield.

"When these crops are growing in the field they all look the same, so one of the problems that we've had in the state has been misapplication and herbicide drift," he reported. "We developed a simple system where we color coded crops according to their technology. For example if you see a white flag flying in a field that's Roundup Ready, if you see a bright green flag fluttering that's LibertyLink, if you see a yellow flag that's Clearfield, if you see a red flag that means danger, that means conventional, that's not tolerant to any herbicide technology.

"We've seen these flags flying in Missouri, Louisiana, Mississippi and I guess one of the sincerest forms of flattery is when somebody else adopts your program, so we're very pleased to see a rapid adoption," he added. "I don't have a lot of stories about how this saved somebody's field but definitely when you're driving down the road it identifies that field as to what herbicide technology it has. So we're hoping that this has been beneficial to guys and we'll probably continue to see these flags flying around the state." Δ

BETTY VALLE GEGG-NAEGER: Senior Staff Writer, MidAmerica Farmer Grower