A Rate *That* Varies

Study Seeks System That Profits Both Landlord And Producer

BETTY VALLE GEGG
MidAmerica Farmer Grower

PORTAGEVILLE, MO.

Variable rate cotton seeding was discussed recently by Dr. Earl Vories, agricultural engineer with the USDA Agricultural Research Service based at the Delta Center in Portageville, Mo.

"I am part of the Cropping Systems and Water Quality Research unit that is based at the university campus in Columbia, Mo," he explained. "Part of the work that my group is involved with in cropping systems has to do with all the different areas of precision agriculture."

At this event he spoke about variable rate cotton seeding.

Dr. Earl Vories, Agricultural Engineer with the USDA Agricultural Research Service based at the Delta Center in Portageville, Mo. discusses variable rate cotton seeding.

Photo by John LaRose, Jr.

"The planters have gotten to the point where it is very simple to vary the rates," he said. "You can either do it in the cab by punching a button or you can prepare a prescription just like on sprayers and other equipment, so it is at the point where you can vary it anywhere in the field, and so it is important to look at that."

There are two schools of thought on how to do variable rate. One is to put more inputs into the weaker areas in order to bring that level of production up to the level of the stronger areas to create a uniform field. The other school of thought is that you need to reduce your inputs on those weaker areas, so you don't spend as much money.

"Your yield in that field is not going to be uniform, but you will get more money out of it because you won't spend as much on those poorer areas," Vories said. "One thing that complicates that is that most of our land in the Delta is rented. There is a landlord in there and he may not want you to take part of that land out of production or reduce yields. So we have to consider the economics from the standpoint of both the producer and the landlord. Then it becomes what is the most economical situation for everybody involved."

Vories's study is looking at economics, considering both the landlord's and the renter's viewpoint.

"We are starting to develop a database of the response for different seeding rates under a lot of different conditions, so we are looking at different soil types, irrigated and non-irrigated. One of the big things for this is a lot of the area in the Missouri bootheel is under a pivot. If you are farming under a pivot you are going to have areas that are irrigated and areas that are not irrigated. There are also areas under the end gun that are sort of irrigated, so we are looking at that trying to come up with recommendations."

The study now is focusing on a silt loam soil and a very sandy soil over at the Rhodes farm near Clarkton. Studies also include some clay fields so recommendations for all types of soils will eventually be given.

"We will develop a database so that when a farmer comes to us and says 'I have a planter that will allow me to plant variable rate, what is the best prescription that I can come up with for that?' Then we can go to that database and tell him that, under these conditions, these are what we are seeing as the best seeding rates."

Vories said one can look at a soil map or an electrical conductivity map and learn where the stronger and weaker areas are, then decide how to put in the best prescription to maximize income for that field.

This study began last year in 2006. Vories is also working with Daniel Stephenson at the University of Arkansas whose crops are on a clay soil.

"We are putting some in clay soil here at Portageville, but we didn't have it in last year so we are just getting started with that," he said. "Our data isn't very extensive yet and, of course, as you know very well this year is a lot different from last year, and next year will be a lot different again. It is very important that you don't just look at one or two years and try to make real sweeping conclusions."

The Agricultural Research Service scientists generally develop five-year plans, so researchers had to project how the project would progress.

"A lot of what we projected was that in three years we would have a pretty decent database developed and then we would like to go out and work with some farmers and start applying it on an actual full field to see what some of the weaknesses are and what we need to do to fine tune it," he said. "However, again our initial thought is in three years we would get enough data to get started." Δ