

Glyphosate-Resistant Pigweed Management Headlines U Of A Research Field Day

KEISER, ARK. Three essential points for effective weed control were the recurring theme during a research field day at the University of Arkansas Division of Agriculture's Northeast Research and Extension Center: start with a clean field, overlap residual herbicides and manage the soil seed bank.

seedbed would also help. Norsworthy evaluated 19 residual herbicides to determine which ones gave the best protection against glyphosate-resistant pigweed. "Valor and Reflex seem to give the longest coverage in a residual herbicide program," he said. "In tests here at Keiser it gave us up to four weeks coverage."



Weed scientist Jason Norsworthy describes research on residual herbicide strategies for controlling glyphosate-resistant pigweed.



A female pigweed plant grows in a test plot at the Northeast Research and Extension Center.

Tours during the field day focused on division research aimed at managing glyphosate-resistant pigweed in cotton and soybeans, said Fred Bourland, NEREC director.

Division weed scientist Jason Norsworthy said glyphosate-resistant Palmer Amaranth, or pigweed, has spread quickly through the state and can march through a field quickly if it gets a foothold.

At the Arkansas Agricultural Research and Extension Center in Fayetteville, Norsworthy said he put a single glyphosate-resistant pigweed plant in a 3-acre cotton field to see how fast it would spread. The weed was sprayed four times with Roundup. It recovered each time.

"By the third year, the field was full of glyphosate-resistant pigweed," he said. "I cut the field at maturity and found only one cotton boll in the entire three acres."

Ken Smith, a division weed scientist based at the Southeast Research and Extension Center at Monticello, said an effective pre-plant residual herbicide or Gramoxone, a dessicant herbicide used at planting, can help establish a clean field. He added that good tillage to prepare the



Weed specialist Bob Scott discusses glyphosate-resistant pigweed control in Liberty Link and Roundup Ready soybeans.

To overlap residual coverage, Norsworthy said, that means you have to spray again in three-and-a-half weeks. In addition, he said, field conditions may require new applications. In clay soils like those at NEREC, the soil tends to crack when it dries after a rain or irrigation.

"Pigweed will come up through those cracks," Norsworthy said. "And when you cut a furrow to lay poly pipe, the herbicide coverage will be broken at the furrow and you'll see more pigweed coming up near the poly pipe."

Another key to controlling the weed, Norsworthy said, is to spray it when it's small or, as he said, 3 inches above the ground, not 3 inches above the top of the crop. "It's harder to kill when it gets big," he said.

Smith said the soil seed bank refers to pigweed seed left on the ground after harvest that can sprout new weeds in the spring. He conducted trials of several methods to help reduce the amount of seed left in the field. No practices like burning the residue, rebedding in the fall, catching and removing the combine trash, nor fall applied herbicides eliminated pigweed seed from the seedbank.

Smith and Norsworthy said the best bet for reducing glyphosate-resistant pigweed is to keep it from going to seed. Managing the seed bank includes the best management practices possible followed by hand removal of the few remaining escapes if necessary.

"If you let this stuff go to seed, you've got a problem," Norsworthy said. "If you let one escape, that's one too many." Δ