

# Pigweed Control

**Specialist:**

## **Farmers Must Get Serious About Curbing Pigweed**

**BETTY VALLE GEGG-NAEGER**  
MidAmerica Farmer Grower

**MARIANNA, ARK.**

**P**lots demonstrating the management of glyphosate resistant Palmer amaranth or pigweed in cotton was the topic presented by Dr. Ken Smith, University of Arkansas weed scientist.

"The plots here show the soil residual properties of various herbicides and how important it is for timing," he began. "On some of these plots we actually waited until the cotton had one to two leaves, then we came in and sprayed with a soil residual. In other words, it was a total post program. That program does not work because our pigweeds get out in front of us; our soil residual post herbicides must be down prior to the weeds germinating. In a Liberty Link system we can do that, because Ignite will take down those small pigweeds and we can put down a residual at that time. However, we do not recommend total post programs in Liberty Link programs either.

"To compare the two programs, obviously most of the cotton in our state next year will be Roundup Ready cotton, meaning we must use a pre-emerge herbicide. I think that it's foolish to plant cotton in our state without a preplant or preemerge herbicide. The pigweeds will just run over us."

Smith urged farmers to be mentally prepared to follow up on the pigweed issue.

"The pigweed control will never be as easy as it was in 2003, and we keep looking for a way to get back to where we were," he said. "We can't go back, we won't go back to 2003. So if we're mentally prepared; if we go into the season with pigweed management on our minds, we can manage it."

Smith didn't say there wouldn't be any pigweed in the field, but there are two fields in the state where there is zero tolerance and no plants have been allowed to go to seed there.

"That doesn't mean that none germinated, but in some heavily infested fields we've been able to keep them down through a herbicide program and we walk through and do some hand chopping. To get the zero tolerance that may be what we have to do."

He again urged the mental preparation, noting that the farmers that vowed not to let the pigweeds get away from them have clean fields.

"The other fields that are growing up with pigweed, sometimes because of weather, sometimes because no one could get there on time, those are the ones that have gotten away from us, and the situation is worse than we anticipated," he added. "I must say it's worse than I anticipated and I look at it every day, so it did not surprise me that some of our farmers allowed this to slip up on them and it got worse than they anticipated. I think next year those that were really bad in 2010 may be the cleanest fields; and the ones where there were just a few escapes are the ones I'm most concerned about next year."

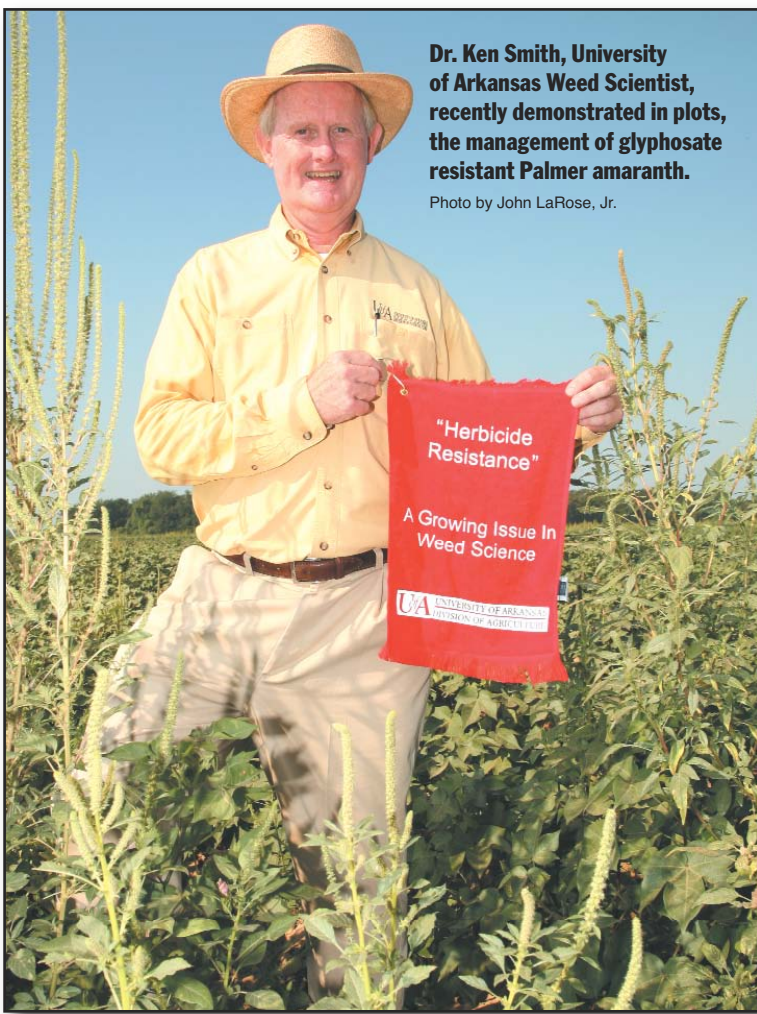
He noted there's an "achilles heel" for the pigweed in the fact that the seed do not live over four years in the soil. Many weed seeds will survive 50 years in the soil.

"If we can reduce the seed in the soil every year, then obviously we're gaining and we're sustaining," Smith said. "If we continue to allow this soil seed bank to increase, then that's not sustainable. We are looking at deep tillage as one mechanism of burying the seed to get rid of it. Another way of doing that is just not allowing an increase in the number of seeds. An individual Palmer amaranth can produce hundreds of thousands of seeds. We talk about 250,000 seeds per plant, and if it gets out by itself it could be even more than that. We try to take some of these out to reduce our seed population. Yet I'm having difficulty conveying to the farmer how quickly these plants mature. Once we see this little seed head we can have a mature seed that is viable in 10-14 days. It's important to get it before it gets to this stage of flowering and producing seed. That's a very critical issue for us in our educational program,

and yes, we are going through with hoe crews. It's a lot easier to go through with a hoe crew when the plants are big enough so you can see them and they're not down under the canopy, but at the same time if they have seed heads under the canopy we're allowing some seed to get back into the soil."

He said over the past few years they have escaped because they were resistant to glyphosate. First it was a few, then a few more and that has really increased the soil seed bank.

"We have a tremendous number of seeds in the seedbank. We went into some fields and actually pulled the cores of soil in a grid fashion and carried them in to see how many seeds were



**Dr. Ken Smith, University of Arkansas Weed Scientist, recently demonstrated in plots, the management of glyphosate resistant Palmer amaranth.**

Photo by John LaRose, Jr.

there," he reported. "We got 350,000 seed per acre germinating, now that's not how many were produced because everything likes pigweed seed. They're really high in protein so insects use them for food and that's good. We have a lot of predators and that's really, really good; however, the fact that we could germinate eight to 10 per square foot means we have a real battle on our hands. Our goal is to push that high seed count down every year. That's a critical issue for us; we do not want to allow them to get too mature before we go in and take them out."

Smith said the hand chopping is not a bad program. If there are only a few plants scattered in the field they can be hand chopped for \$3 to \$5 an acre.

"I've heard of extremely high numbers of \$100 per acre in some heavy infestations, but actually if we can chop it for under \$20 per acre that's no worse than a herbicide application, and we are taking them out and getting that soil seed bank down. So my message on the hand chopping is just do it before they set seed."

If chopping is done after they seed the whole female plant needs to be taken out of the field, though not the male plant.

"That gets to be very laborious, but there are farmers that do that," he said. "They have their chopping crew take them out and carry them to the turnrow, pile them up and haul them away. That's extremely laborious and obviously could be done only where there are just a few scattered in the field."

It is not necessary to carry the male plant out, as it usually does not produce seed. The way to tell the difference between the male and female plant is by examining the flower part.

"If you run your hand up the flower part and it's a real soft feel it is the male plant," he explained. "The female flower part will be more prickly. The prickliness, obviously, is Mother Nature's way of protecting that fruit, protecting that baby that is in that developing seed, so the females are always more prickly in that flower." Δ

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