



For Immediate Release

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Cotton Growers Still Searching for Viable Solutions in Battle against Herbicide Resistance

LAWRENCE, Kansas – DECEMBER 9, 2013 – For nearly a decade, cotton growers have been battling to save crops from the ravages of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*). Though in many ways they are finally gaining the upper hand, an expert with the Weed Science Society of America (WSSA) says the progress has come at a great cost.

“The current model simply isn’t sustainable,” says Stanley Culpepper, Ph.D., a professor in crop and soil science at the University of Georgia and member of WSSA. “Growers have gone to war, and they are making progress from a weed management perspective, but not from an economic or environmental perspective. We need to figure out a way to get the same result far more cost effectively and in a way that better protects our natural resources.”

Palmer amaranth is no ordinary foe. This prolific weed can grow an inch or more a day and achieve heights of nearly 10 feet. It crowds out crops, draws moisture and nutrients from the soil and has a stem tough enough to damage rugged farm equipment. To add to the challenge, a single plant can produce hundreds of thousands of seeds – turning a limited incursion into an all-out infestation.

Palmer amaranth became a huge problem in cotton after growers began to rely solely on glyphosate for weed control. After repeated and exclusive exposure to the chemical, resistant weeds began to appear. It was clear that growers would need to make significant changes in their weed control practices or lose their crops.

Today integrated weed management programs that complement glyphosate with a variety of other weed control tools and techniques have become commonplace in cotton. Growers have added herbicides to their weed control programs that use a different mode of action than glyphosate. They also are using two approaches that may seem decidedly “old school.” More

than 90 percent of cotton growers in Georgia are now hand-weeding a significant portion of their cotton crop, Culpepper says. They also are tilling more to keep Palmer amaranth at bay.

Though the multifaceted approach is working, there are definite downsides. Additional herbicides, labor and fuel have *tripled* the cost of weed control in cotton and that means profit margins are declining. In addition, increased tillage raises concerns about soil erosion from water and wind.

Scientists and growers are collaborating on new options. One of the latest involves the use of heavily planted winter rye as a cover crop for cotton. Once the rye is established, it is rolled down to create a thick, horizontal bed of mulch that can reduce Palmer amaranth infestations by as much as 70 to 90 percent.

“We have a committed and creative group of growers, and if there are more cost effective ways to control Palmer amaranth, I’m confident we will find them,” Culpepper said.

A Cautionary Tale

The impact of glyphosate resistance on cotton crops represents a cautionary tale for anyone relying on a single herbicide mode of action for weed control, scientists say. If you reach the resistance “tipping point” in a crop, it can be very costly to turn back the tide.

According to WSSA member Bryan Young, Ph.D., a professor at Southern Illinois University and expert in herbicide resistance, more than 200 weed species are now resistant to one or more herbicides.

“It isn’t herbicides that create herbicide-resistant weeds,” Young says. “Instead, the culprit is how we use herbicides in an overall weed management strategy. To preserve the effectiveness of herbicides, it is imperative that we become better stewards of their use. Minor changes made today can avoid costly problems in the future.”

Best management recommendations and free educational materials about how to combat herbicide resistance are available on WSSA’s website: wssa.net/weed/resistance.

About the Weed Science Society of America

The Weed Science Society of America, a nonprofit scientific society, was founded in 1956 to encourage and promote the development of knowledge concerning weeds and their impact on the environment. The Weed Science Society of America promotes research, education and extension outreach activities related to weeds, provides science-based information to the public and policy makers, fosters awareness of weeds and their impact on managed and natural ecosystems, and promotes cooperation among weed science organizations across the nation and around the world. For more information, visit www.wssa.net.