Managing Waterhemp

Soybean Farmers Face Serious Repercussions As They Center On Weed Control, Vs. Weed Management

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Waterhemp has developed a resistance to glyphosate in Illinois and Dr. Aaron Hager, assistant professor of extension weed science in the University of Illinois Department of Crop Sciences, is intent on educating farmers to the problem and its solution.

"We have developed some specific recommendations to address this very real problem," he said. "However, some potentially serious repercussions are poised to plague Illinois soybean farmers in 2008, due to the widespread adoption of weed control practices in lieu of weed management."

He said what is particularly disturbing is there are no new post emergence soybean herbicide active ingredients coming to the market in the near future. Also, there currently are only four active ingredients a soybean farmer can use to control waterhemp after it emerges in the crop.

"Three of those four belong in the same chemical family," Hager said. "The three are the diphenylethers and the other, of course, is glyphosate. Here in Illinois as well as other states in the Midwest, we already have resistance diphenylethers. We now have resistance to glyphosate so, certainly, the worse case scenario of a waterhemp population that is resistant to all those, rendering no effective options that a farmer could use after emergence, is becoming closer to reality. There is nothing new in terms of new active ingredients coming out from the industry, so, theoretically at least, we could have a scenario where we would have a summer annual weed that we cannot control chemically at least after it emerges in soybeans."

Some new advances offer some potential promise. In the next few years a glufosinate-resistant or Liberty Link soybean, may become commercially available, as there's still a movement underway to try to commercialize that technology. Farmers would then be able to use glufosinate or Liberty Link post emergence for waterhemp control.

"But farmers must remember that glufosinate is not glyphosate, and application practices are different for glufosinate," he said. "Then further down the line might be the dicambia-resistant soybean. If Monsanto chooses to continue development of that technology it would allow the use of dicambia directly in soybean and bring another option to the table for waterhemp management. But, even that advancement is not without its own set of potential limitations. Certainly dicambia is an active ingredient very effective on waterhemp, but there are many other species that are very sensitive to dicambia, even very very, low low rates of dicambia through drift or tank contamination."

Hager said about the only thing consistent and constant about waterhemp is that it continues to adapt to all the tools farmers have used for its control.

"We have gone from the weed that 20 years ago hardly anyone in the state could even recognize except two people, both of whom were my predecessors at the university, to a point where it is hard to find two farmers in the state that wouldn't recognize it, or at least be unfamiliar with waterhemp."

Dr. Aaron Hager, discusses some specific recommendations to address resistance of waterhemp to glyphosate. Photo by John LaRose, Jr.

Hager finds it a nice concept that in the future new technology or microbiology might possibly out-pace the evolution of waterhemp. However, he has some reservations with that idea.

"At least, we have to come to grips with the fact that whatever tool we use, whether it be herbicide, or even a non-herbicidal control tactic in a biological system, the more we try to modify the environment that plant is growing in the more we are going to select for a small percent of that species that can't ultimately survive in that environment. Eventually it will become the dominant species in that environment."

He said that waterhemp has always been in Illinois. It is an indigenous species, however, historically it's range was not as extensive as it is at present and it certainly never appeared across as large an area or was not recognized as broadly geographically as the dominant species as it has become in the relatively short period of time since the early- to mid-1990s. Δ