



STEWARDSHIP OF HERBICIDES

Robert Loring Nichols - Senior Director



DATE: MARCH 14, 2016

To: Participants of a meeting of cotton and soybean weed management specialists: “**Preparing for the Auxin Technologies**,” held in conjunction with the joint annual meeting of **Southern Weed Science Society (SWSS)** and the **Weed Science Society of America (WSSA)** in **San Juan, Puerto Rico on 2/11/16**.

Richard Joost, Boyd Carey, Nader Soltani, Peter Sikkema, J. D. Green, Mike Owen, David Shaw, Angela Post, Dallas Peterson, John Hinz, Angie Rieck-Hinz, Darrin Dodds, Nilda Burgos, Jill Shroeder, Arlene Cotie, Larry Walton, Scott Varnish, Todd Gaines, Mark Bernards, Bryan Young, Dan Westberg, Steve Bowe, Phil Westra, Lee Van Wychen, Peter Dotray, Kevin Bradley

From: Bob Nichols

CC: Ford Baldwin, Tom Barber, Michael Barrett, Charlie Cahoon, Stanley Culpepper, Bill Curran, Vince Davis, Franck Dayan, Wesley Everman, Tim Grey, James Griffin, Jeff Gunsolus, Aaron Hager, Bob Hartzler, Jhala Amit, Bill Johnson, Wayne Keeling, Stevan Knezevic, Andrew Kniss, Greg Kruger, Travis Legleiter, Steve Li, Mark Loux, Mike Marshall, Jim Martin, Donnie Miller, Jason Norsworthy, Eric Prostko, Dan Reynolds, David Simpson, Reid Smeda, Christy Sprague, Phillip Stahlman, Larry Steckel, Daniel Stephenson, Curtis Thompson, Pat Tranel, Mark Van Gressel, Alan York, Richard Zollinger, Kater Hake

AGENDA

Kevin Bradley, President WSSA – Introduction

Richard Joost, United Soybean Board (USB)

Bob Nichols, Cotton Incorporated

Larry Walton, Dow AgroSciences – Update on Enlist[®]

Boyd Carey, Monsanto - Update on Xtend[®]

Steven Bowe, BASF – Update on Engenia[®]

J. D. Green - Facilitated discussion with Soybean Weed Specialists

Darrin Dodds - Facilitated discussion with Cotton Weed Specialists

Peter Dotray, President SWSS – Preserving the Auxin Technologies

Kevin Bradley – Agriculture and the Public

INTRODUCTION

The new auxin technologies are the premix herbicide products, Enlist Duo[®] (2,4-D + glyphosate) and Roundup Xtend[®] (dicamba + glyphosate) for use in conjunction with the Enlist[®] and Xtend[®] cultivars, respectively; and the new reduced-drift, dicamba herbicide formulations Engenia[®] and Roundup Xtendimax[®] that may be used with the Roundup Ready Xtend cultivars. These new technologies offer the opportunity to provide needed weed management of broadleaf weeds in cotton (*Gossypium hirsutum*) and soybeans (*Glycine max.*), especially for control of weeds resistant to the ALS and glycine herbicide mechanisms of action. Enlist corn (*Zea mays*) cultivars also provide new options for management of difficult-to-control grass weeds in corn. Such new options are needed in part because of multiple herbicide resistance in the dioecious amaranths, Palmer amaranth (*Amaranthus palmeri*) in the South, and tall waterhemp (*A. tuberculatus*) in the Mid-West.

WSSA President, Kevin Bradley introduced the topic. Richard Joost of USB had a family emergency and was unable to attend. Bob Nichols of Cotton Incorporated presented for Richard and himself. The joint presentation emphasized the need to practice pro-active weed resistance, and the progress that has been made by USB's resistance management education program, 'Take Action'; and also the need to closely follow label instructions to avoid off target movement of auxin herbicides.

INDUSTRY UPDATES

Larry Walton – Dow AgroSciences: Enlist Duo[®] is registered in corn and soybean. The label for cotton is pending. In corn a program will be conducted as in 2015 wherein growers will grow Enlist[®] corn cultivars, treat the corn with Enlist Duo, and feed the crop to their own cattle. Enlist RRY2 and E3 soybean cultivars (resistant to glyphosate, glufosinate, and 2,4-D) may be treated with Enlist Duo and will be increased for seed. Enlist cotton cultivars have been released and growers have been selected and contracted. Enlist Duo will not be applied to Enlist cotton cultivars. Dow AgroSciences is committed to protecting the technology for the long-term, promoting herbicide resistance management, and preventing off-site movement. The 'Enlist Ahead' training program has presented management recommendations, education on application requirements and explanation of the Colex-D formulation, a volatilization-minimization technology.

Boyd Carey – Monsanto: The Roundup Ready Xtend Crop System is a needed technology that needs to be used responsibly. An import tolerance has been secured from China. Roundup Ready Xtend cotton cultivars were sold in 2015, and Roundup Ready Xtend cotton and soybean cultivars will be sold in 2016. However, no dicamba herbicides are currently registered by EPA for in-crop applications in cotton or soybeans. Monsanto is implementing an extensive program to communicate that dicamba herbicides cannot be applied on such cultivars and is providing both Roundup Ready Xtend cultivars of cotton and soybean at discounted introductory prices. In Canada, both the Roundup Ready Xtend trait and the herbicides are fully registered for soybean.

Steve Bowe – BASF: Engenia[®] 5 a.e./gal. (600 g a.i./l) is pending registration in the U. S. for use on Roundup Ready Xtend cultivars of cotton and soybean. Maximum use rate in either crop will be 2 lbs./season. Applications may be pre-emergence at a max. rate 1.0 lb. a.i./gal., and two 0.5 a.i. lb./gal. post emergence treatments. BASF will sponsor an equipment program to facilitate nozzle adoption. No aerial applications will be permitted. Recommendations for use have been developed to generate a specific, low drift droplet profile. The new label will focus on directions for optimal performance.

FACILITATED DISCUSSIONS FOR SOYBEAN AND COTTON LED BY J. D. GREEN AND DARRIN DODDS

As intended, this part of the meeting took up the majority of the time. At times the discussion was frank. Concern was expressed about potential damage from tank contamination; that is small amounts of the auxin products might remain in spray tanks and cause considerable auxin damage to subsequently treated crops that were not resistant to the previously applied herbicide. Manufacturers noted that the protocols for tank clean out are conservative and incorporated in the pending herbicide labels. Growers who do not follow label instructions do risk damaging their own crops that are not resistant to the new herbicides.

Mike Owen, among other Mid-Western weed specialists, remarked that “expectations for (the performance of) these herbicides is very high”, and there is concern that “growers will attempt to use the auxin products as stand-alone weed management systems, as was done with glyphosate”. Dr. Owen also complimented the companies for their educational efforts to inform growers about stewardship of their technologies. All company representatives asserted that their organizations were advocating weed management based on use of multiple mechanisms of herbicide action for in-season weed control and resistance management for sustainability of the technologies. There also was discussion about the possibility of off-target movement. The potential for drift from applications was extensively discussed. Past WSSA President, David Shaw said, “Everyone must be on the same page and apply herbicides right.”

CONCLUDING REMARKS

WSSA President, Kevin Bradley, said, “Three applications per season of either product is probably too much for the mechanism of action to be sustainable. However, the USB program, ‘Take Action’ is being effective. We must do what is needed to get everyone on the same page now.”

FOLLOW-UP BY THE SOCIETY

WSSA will issue a press release about use of the auxin technologies.