

Dicamba and Dicamba-Resistant Soybean Varieties

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On February 3, 2016, Monsanto announced commercial launch plans for soybean varieties resistant to dicamba and glyphosate (designated Roundup Ready 2 Xtend varieties). This announcement followed China's decision to approve grain from these varieties for import. Many weed-management practitioners hope the use of this new technology will improve control of challenging weeds, including those with evolved resistance to glyphosate and herbicides from other groups. Weed science programs across the United States have evaluated this technology for several years, conducting field research to better understand the technology and how it might be best used in soybean production systems.

Technology Unavailable in 2016 Growing Season

This new technology can be a useful tool for weed management in soybeans, but it is unlikely that soybean farmers can realize its full use during the 2016 growing season. No labels for any dicamba-containing product allow applications at soybean planting (pre-emergence) or after the soybean crop has emerged (post-emergence). Furthermore, considerable uncertainty exists about whether federal and state labels will be granted in time to allow application of dicamba-containing products on these varieties during the 2016 growing season. Without approved labels, applying a dicamba-containing product to these soybean varieties would constitute a violation of both state and federal laws. Additionally, some elevators have indicated they will not accept grain produced from dicamba-resistant soybeans until the stacked trait obtains approval by the European Union.

Dicamba Application Restrictions

Some have posed the question of whether or not dicamba can be applied prior to planting dicamba-resistant soybean varieties. The answer is "yes," but this type of application must follow current dicamba label guidelines *regardless of the soybean variety planted*. For example, following the preplant application of Clarity and one inch of accumulated precipitation, a waiting interval of 14 days is required for up to 8 ounces of Clarity and 28 days for up to 16 ounces. This use pattern is governed by the herbicide label, not by the soybean variety planted.

Herbicide Resistance

Herbicide-resistant weed populations continue to be a common occurrence in cropping systems across much of the United States. In Illinois, waterhemp and horseweed (marestail) are the two most common herbicide-resistant weed species, and observations during 2015 suggest these species are likely to remain prevalent in 2016. Waterhemp resistant to herbicides from more than one site-of-action group are increasingly common, and most weed scientists do not think this will change. Recent survey data from Illinois indicated herbicide-resistant waterhemp occurred in close to 90 percent of the fields sampled, and multiple resistances to glyphosate and PPO inhibitors was confirmed in 54 percent of the fields sampled.

2016 Solutions

Soybean producers who plan to rely on dicamba and dicamba-resistant soybean in their 2016 weed-management programs for control of glyphosate- and PPO-resistant waterhemp populations are encouraged to consider utilizing alternative strategies. The Enlist soybean trait technology and the complementary Enlist Duo herbicide formulation have received regulatory clearances, but without export approval to China Dow AgroSciences will have seed increases only in 2016. Alternative strategies to manage weed populations with resistance to multiple soybean herbicides include rotating fields to a different crop, or planting soybean varieties resistant to glufosinate (i.e., Liberty Link) and utilizing glufosinate (Liberty) as a post-emergence herbicide. Regardless of the crop planted, the variety selected, or the herbicide applied, the most sustainable solution to the challenges of herbicide-resistant weeds is an integrated weed-management system that utilizes both chemical and non-chemical tactics to eliminate weed seed production throughout the growing season.