Although the problem of herbicide resistance is not new, the widespread evolution of glyphosate resistance in weed species such as Palmer amaranth (Amaranthus palmeri S. Wats.), common water-hemp (Amaranthus rudis Sauer), and kochia [Kochia scoparia (L.) Schrad.] raised awareness throughout the agricultural community of herbicide resistance as a problem. Glyphosate-resistant weeds resulted in the loss of a simple, single herbicide option to control a wide spectrum of weeds that gave efficacious and economical weed management in corn (Zea mays L.), soybean [Glycine max (L.) Merr.], and cotton (Gossypium hirsutum L.) crops engineered for tolerance to this herbicide and planted over widespread areas of the South and Midwest of the United States. Beyond these crops, glyphosate is used for vegetation management in other cropping systems and in noncrop areas across the United States, and resistance to this herbicide threatens its continued utility in all of these situations. This, combined with the development of multiple herbicide-resistant weeds and the lack of commercialization of herbicides with new mechanisms of action over the past years (Duke 2012), caused the weed science community to realize that stewardship of existing herbicide resources, extending their useful life as long as possible, is imperative. Further, while additional herbicide tolerance traits are being incorporated into crops, weed management in these crops will still be based upon using existing, old, herbicide chemistries.

The concerted action of players across the agricultural community will be required to preserve the utility of existing herbicides, which can be considered a common resource. Herbicide resistance is also considered a “wicked problem” by social scientists (Ervin and Jussaume 2014). A fundamental reason herbicide resistance is a “wicked problem” is the mobility of weeds, and resistance traits, so the problem is not confined to one grower’s property (Beckie et al. 2015; Borger et al. 2007; Dauer et al. 2006; Diggle and Neve 2001; Norsworthy et al. 2009; Shaner and Beckie 2014; Shields et al. 2006; Sosnoskie et al. 2012). As such, it has no single solution and is, essentially, unsolvable because the threat of resistance evolving remains while herbicides are being used to manage weeds. However, effective incentives and regulations (“carrots and sticks”) can help control or slow resistance evolution.

As discussed at the Second Herbicide Resistance Summit (WSSA 2014), dialog between the weed science community and social scientists has developed the notion that resistance is not a technology problem per se, but rather a result of human behavior while using the technology. The repeated use of a weed management strategy lacking in diversity of tactics over broad geographic areas places intense selection pressure on weed populations to evolve resistance. There is a great deal of information on how weed management can be diversified to delay resistance (Norsworthy et al. 2012). However, these best management practices (BMPs) are not being adopted quickly or widely enough to insure that resistance will not continue to evolve and spread, despite extensive educational programs on herbicide resistance management in both the public and private sectors.

If prevention and management of herbicide-resistant weed populations is to change, behaviors must change throughout the agricultural community and in how farmers manage weeds. Behavior change in agriculture can come from complex and interacting sources of motivation, such as the community, economics, and education. The analogy of a “thousand little hammers” is often used to describe a diversified weed management strategy that does not rely on one management tactic. This same concept can be applied to an approach to change behavior to better manage herbicide resis-

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