



February 20, 2014

Dr. Steven Bradbury  
Director  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Mail Code 7501P  
Washington, D.C. 20460

Dear Dr. Bradbury,

Thank you for your participation in the herbicide resistant weed workshop organized by members of the Weed Science Society of America (WSSA). As you saw, herbicide resistance is of serious concern to the agricultural community as evidenced by the diverse representation at the workshop from commodity groups, IPM centers, federal agencies, regional weed science societies, and agribusinesses and, importantly, the time taken by USDA Deputy Secretary Krysta Harden to address the group. While herbicide resistance is not a new problem, awareness of this issue has been dramatically increased by the recent evolution of weed populations resistant to glyphosate, impacting the utility of this unique and extremely useful active ingredient. In addition, there are documented weed populations that have evolved resistance to multiple herbicide mechanisms-of-action (MOA) and which seem to have a propensity to develop additional resistances.

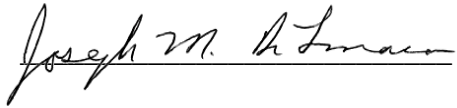
The increase in weed populations with multiple resistances is uncomfortably similar to the situation that Australian farmers faced with rigid ryegrass (*Lolium rigidum*). Multiple resistance is occurring against a background of greatly reduced discovery and development of new herbicide MOAs over the past 25 years. The weed science community is greatly concerned that farmers could face a reduction in the utility and even the potential loss of the effective and economical herbicidal tools upon which modern productive agriculture is based if steps are not taken immediately to thwart further evolution of resistance to all herbicides. Already, we see greater dependence on tillage to manage weeds in some areas dealing with resistant weeds and this has the potential to reverse the improvements in soil conservation gained through conservation tillage systems.

The WSSA, Regional Weed Science Societies, Industry, cooperative extension, commodity groups and others have engaged in multiple educational efforts to raise awareness of the herbicide resistance threat and to encourage adoption of best management practices (BMPs) to mitigate the further spread and evolution of herbicide resistant weed populations. While the WSSA educational materials are applicable on a national level, it is also apparent that these recommendations must be tailored to specific cases on a much more local level. Your participation in the workshop demonstrates that herbicide resistance is a concern for the Agency. The WSSA is committed to working with federal and state agencies, such as the EPA, to promote greater awareness and adoption of BMPs. To these ends, we offer the following recommendations as areas needed for the success of educational efforts we can work together on to promote the adoption of accepted BMPs for managing herbicide resistance.

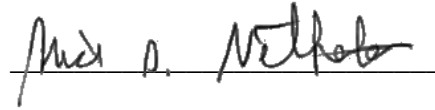
1. MOA labeling should be on all herbicide labels. We ask that you work with registrants to develop a consistent policy and timelines for MOA labeling on all herbicides. Use of multiple effective MOAs in mixtures, sequences or in rotation is instrumental to effective resistance management. The easier it is for a practitioner (such as a grower, applicator, dealer, or crop consultant) to identify the MOAs of the products they select, the more likely they will practice this BMP. While many herbicide products indicate their MOAs, there is not uniform adoption of this standard. MOA labeling is the world standard for managing pesticide resistance. As MOA labeling becomes uniform on herbicide labels, we hope that registrants will include MOA information in all their communications with practitioners.
2. Develop and encourage industry to adopt label language that more strongly cautions against the use of herbicide rates below those specified on the label, as appropriate. It is now well established that lower rates may promote evolution of certain types of resistances. We understand that promotion of lower use rates can be attractive to some from an economic or environmental perspective, but it can be the wrong approach to addressing resistance for certain herbicides.
3. For products with prepackaged mixtures of active ingredients, all the MOAs in the product should be indicated on the label as consistent with Recommendation #1. In addition, we suggest that the Agency work with registrants to find ways to communicate and educate users on which active ingredients, and MOAs, in a mixture are effective on which of the weeds listed on the label. Growers can be misled into a sense of security when using these products thinking they are using more than one MOA against a target weed when, in fact, they are actually employing only one due to preexisting herbicide tolerance or resistance to the other herbicides in the product. Diversification is the key tenet in managing resistance. Using multiple effective MOAs against problem weeds is part of this.

Thank you for your consideration of these requests. We know from your attendance at the workshop and through the activities of others in EPA-OPP that you and the Agency are very concerned about herbicide resistance and preserving the utility of herbicides for American agriculture. We would be pleased to work with you and the Agency to accomplish that objective.

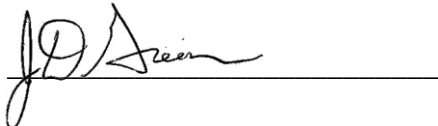
Sincerely,



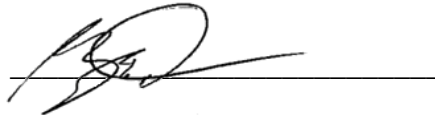
Dr. Joseph DiTomaso  
President  
Weed Science Society of America



Dr. Michael Netherland  
President  
Aquatic Plant Management Society



Dr. J.D. Green  
President  
North Central Weed Science Society



Dr. Gregory Armel  
President  
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Dr. Scott Senseman  
President  
Southern Weed Science Society



Dr. Roger Gast  
President  
Western Society of Weed Science

cc: Hon. Bob Perciasepe, Deputy Administrator, US EPA  
Hon. Jim Jones, Assistant Administrator, US EPA Office of Chemical Safety and Pollution  
Prevention  
Hon. Krysta Harden, Deputy Secretary, USDA  
Dr. Sheryl Kunickis, Director, USDA Office of Pest Management Policy