

Herbicide Diversity Can Prolong Glyphosate Usefulness

Glyphosate-resistant weeds continue to spread at an exponential rate – both in geography and in number of species affected. They threaten efficient weed management and profitable, sustainable crop production. Growers struggle to manage these weeds at the cost of unplanned herbicide applications, intense manual labor and crop destruction or abandonment.

Good stewardship practices enable growers to prevent, manage, or delay the spread of weed resistance and protect all useful technologies. It is the right thing for crop production agriculture to preserve the utility of glyphosate and properly steward current and future technologies.

Working together, the weed science community, growers, consultants, and other key influencers can steward weed management technology, preserve conservation tillage opportunities, and promote sustainable and profitable row crop production.

Respect the Rotation is an initiative to elevate the importance of and grower adoption of herbicide diversity. Herbicide mode of action (MOA) rotation is essential to improve weed resistance management.

- **Rotate crops.** Crop rotation provides opportunity for herbicide diversity.

- **Rotate herbicide-tolerant traits.** Alternate herbicide-tolerant traits or use herbicide-tolerant stacks for more efficient rotation of both

nonselective and selective herbicides.

- **Rotate modes of action.** Rotate MOA and use multiple MOA to reduce the selection pressure caused by overusing a single MOA.

Rotation of crops, traits and herbicides is critical to the success of an Integrated Weed Management (IWM) plan. IWM elements are effective to reduce challenges of herbicide-tolerant and/or herbicide-resistant weed biotypes. It is best to use multiple practices, as no single strategy is likely to be completely effective. In addition to rotation, these elements are key:

- **Know your weeds, know your fields.** Closely monitor problematic areas with difficult-to-control weeds or dense weed populations.

- **Start with clean fields.** Proper tillage or the use of a burndown herbicide program should be used to control all emerged weeds prior to planting.

- **Apply herbicides correctly.** Ensure proper application, including timing, rates, and spray volumes.

- **Control weed escapes.** Consider spot herbicide applications, row wicking, cultivation or hand removal to improve weed management.

- **Reduce the seed bank.** Do not allow surviving weeds to set seed, which will help decrease weed populations from year to year and prevent weed shifts.

- **Clean equipment.** Prevent the spread of herbicide-resistant weeds and seeds. Δ



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