

Stewardship of new herbicide tolerant seed traits: a US perspective.

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In the United States we have been facing a very troublesome weed: Palmer amaranth. This weed is most troublesome in the Southeast United States but originally comes from the Sonoran desert in Southwest. Palmer amaranth has many features that make it a troublesome weed including its heat tolerance, photosynthetic efficiency, genetic diversity, and prolific seed production. Limited options to control Palmer amaranth in broadleaf crops such as soybean, cotton, peanuts, and sweet potatoes have restricted ability to adhere to good weed management practices such as rotating herbicide modes of action. New dicamba and 2,4-D tolerant soybean and cotton varieties promise another effective mode of action for glyphosate resistant weeds like Palmer amaranth, but this technology requires strict regulation of mixing and spraying by the farmer. Sensitivity to neighboring crops and wildlife added to the reputation of auxinic herbicide volatilization, drift, and injury has renewed attention to many stewardship techniques important for using these new technologies.