

**Susceptibility to three chemical classes of ALS-inhibiting herbicides of a recently introduced population of palmer amaranth (*Amaranthus palmeri*) resistant to glyphosate in Brazil**

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A glyphosate-resistant biotype of *Amaranthus palmeri*, recently introduced in Mato Grosso State (Brazil) was studied to determine the magnitude of resistance and cross-resistance to three chemical classes of acetolactate synthase (ALS)-inhibiting herbicides. The susceptibility level of the population to the herbicides was obtained by dose response curves conducted under greenhouse conditions. However, no comparison was made with a known susceptible population of *A. palmeri* from the same area, since the population is unique in the country due to the fact it is a nonnative, very likely the only one biotype introduced. The studied biotype demonstrated 105.47-, 47.72- and 927.71-fold resistance compared to the average label rate of imazethapyr, chlorimuron and chlorasulan, respectively, for a minimum of 80% control the other species of *Amaranthus* spp in Brazil. Therefore, it can be inferred from the results that the introduced biotype of *Amaranthus palmeri* in Brazil is cross-resistant to the sulfonylurea, imidazolinone and triazolopyrimidine sulfonilide. The result may also infer that ALS-inhibiting herbicides can no longer be an alternative of controlling this weed biotype in Brazil. This finding for the recent introduction of Palmer amaranth (*Amaranthus palmeri*) in Brazilian agricultural areas may promote several changes on weed management, especially in no-till systems and in glyphosate-resistant crops, since glyphosate-resistant biotypes of *A. palmeri* have been frequently selected in other countries.

**Palavras-chave:** Cross-resistance, dose-response, sulfonylurea, imidazolinone, triazolopyrimidine

**Apoio:** Capes