

## First case of glyphosate resistance in *Tridax procumbens*

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**Summary** *Tridax procumbens* L. (coat buttons or tridax daisy) is a dicot weed species native to the tropical Americas and can be either cross- or self-pollinated. Globally, *T. procumbens* is a major weed of 31 crops in 60 countries. In Australia, it is mostly found in Northern Territory, Queensland and north Western Australia (WA), infesting vegetables, pasture, irrigated and dry-land crops. Glyphosate, 2,4-D, atrazine and diuron are usually used for *T. procumbens* control. However, a *T. procumbens* population from Kununurra, WA is suspected for glyphosate resistance. This population has been managed by repeated glyphosate treatments over several years, with poor control only evident recently. Seeds of the putative glyphosate resistant *T. procumbens* population were

collected from Kununurra in November 2014, and preliminary pot experiments conducted in February 2016 at the University of Western Australia. The Kununurra *T. procumbens* showed a low level resistance to glyphosate, with 100% survivorship at the field glyphosate rate of 540 g ha<sup>-1</sup> and 74% at 1080 g ha<sup>-1</sup>. In contrast, the susceptible *T. procumbens* population (collected from Queensland in February 2016, with no history of glyphosate exposure) displayed 100% mortality at glyphosate 540 g ha<sup>-1</sup>. Glyphosate dose response experiments were conducted and revealed a three-four fold resistance. Target-site and non target-site resistance mechanisms are being investigated.

**Keywords** *Tridax procumbens*, glyphosate resistance.