The extent of herbicide resistance in ryegrass and wild oats in New South Wales and Queensland

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Summary Herbicide resistant weeds are a major impediment to grain growers across the Australian cropping regions. Since resistance was first reported in ryegrass and wild oats in Australia in the 1980s the extent of resistance in these weeds has increased. Knowledge of the extent of resistance in a region is important in designing suitable extension messages to manage resistance. Random seed collection surveys for annual ryegrass and wild oats were conducted across the northern cropping region (NSW and QLD) with the aim of establishing the frequency of herbicide resistance in these species to commonly used herbicides. Approximately 1000 paddocks were surveyed with annual ryegrass and wild oats occurring in 68 and 56% of paddocks, respectively. Approximately 60% of collected annual ryegrass populations were resistant to diclofop and sulfometuron. There were lower levels of resistance to clethodim (10%), trifluralin (11%) and glyphosate (3%) herbicides. In contrast to annual ryegrass, the frequency of herbicide resistant wild oat populations was much lower with only approximately 40% resistant to clodinafop and less resistant to clethodim and idosulfuron. There were regional differences herbicide resistance with 10% of annual ryegrass populations from northern NSW found to be resistant to glyphosate compared to 2% in the remainder of the state. However, there were lower frequencies of resistance to all tested selective herbicides in this region compared to the rest of the NSW. Despite the high frequencies of resistance, some herbicides (e.g. pyroxasulfone and prosulfocarb + metolachlor) remain effective across all collected annual ryegrass and wild oat populations.

Keywords Herbicide resistance, ryegrass, wild oats.