

## Current levels of herbicide resistance in broadacre farming across southern Australia

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**Summary** High levels of herbicide resistance in broadacre farming across southern Australia have been detected due to greater reliance on herbicides for weed control. Random seed surveys have detected alarming levels of herbicide resistance in *Lolium rigidum* Gaudin (ryegrass) to Group A and B herbicides (Table 1). In contrast, lower levels of resistance to trifluralin have been detected in Victoria than in South Australia, the main reason being due to the higher selection pressure with this herbicide on ryegrass.

In *Avena* spp. (wild oats), lower, but important levels of resistance to Group A herbicides have been detected (Table 1). The reduced distribution, lower initial frequency of resistance and the selfing nature of wild oats compared to ryegrass has contributed to a lower level of resistance to the former species (Table 1).

Knowledge of the herbicide resistance profile of a paddock is important for correct herbicide choice to optimise weed control. Unfortunately, it is estimated that less than 5% of farmers actually use resistance testing. Plant Science Consulting ([www.plantscience-consulting.com](http://www.plantscience-consulting.com)) and Charles Sturt University offer testing services.

**Keywords** Herbicide resistant, ryegrass, wild oats, *Lolium rigidum*, *Avena* spp.

**Table 1.** Levels of herbicide resistance in annual ryegrass and wild oat in random surveys conducted in Victoria and South Australia. The data is percentage of samples with survival  $\geq 20\%$ . nt = not tested. Wild oat was not surveyed in SA.

Region	SA (mid north)	Victoria (west)	Victoria (central)
Year of survey	2003	2005	2006
Herbicide	Ryegrass resistance (% of populations)		
trifluralin	49	4.5	1.5
diclofop	77	35	40
chlorsulfuron	75	57	43
tralkoxydim	45	28	nt
pinoxaden	36	29	36
clethodim	nt	12.5	11
Paddocks sampled	185	125	118
	Wild oat resistance (% of populations)		
diclofop		17	8
pinoxaden		nt	2
mesosulfuron		nt	0
flamprop		nt	9
clethodim		0	0
Paddocks sampled		35	98

### ACKNOWLEDGMENTS

Grains Research and Development Corporation for funding this project.