

## Australian glyphosate resistance register: summary – January 2012

### Glyphosate Resistant Weeds in Australia

Glyphosate resistance was first documented for annual ryegrass (*Lolium rigidum*) in 1996 in Victoria. In 2007, glyphosate resistance was documented in populations of awnless barnyard grass (*Echinochloa colona*) in New South Wales. In 2008, glyphosate resistance occurred in populations of liverseed grass (*Urochloa panicoides*) in New South Wales. In 2010 glyphosate resistance was documented in populations of fleabane (*Conyza bonariensis*) in Queensland and New South Wales and in windmill grass (*Chloris truncata*) in New South Wales. In 2011, glyphosate resistance was documented in Great brome (*Bromus diandrus*) in South Australia.

Currently, there are 309 documented glyphosate-resistant populations of annual ryegrass, 49 of fleabane, 21 of awnless barnyard grass, 3 of liverseed grass, 2 of windmill grass and 1 of great brome.

Glyphosate resistant annual ryegrass has occurred in the following situations:

Situation		Number of sites	States
Broadacre cropping	Chemical fallow	29	NSW
	Winter grains	82	Vic, SA, WA, NSW
	Irrigated crops	1	SA
Horticulture	Tree crops	5	NSW, SA
	Vine crops	21	SA, WA
	Vegetables	2	Vic
Other	Driveway	4	NSW, Vic, SA, WA
	Fence line /Crop margin	63	NSW, SA, Vic, WA
	Around buildings	2	NSW
	Irrigation channel /Drain	12	NSW, SA, Vic
	Airstrip	1	SA
	Railway	2	WA, NSW
	Roadside	85	SA, NSW, WA

Glyphosate resistant fleabane has occurred in the following situations:

Situation		Number of sites	States
Broadacre cropping	Chemical fallow	8	NSW, Qld
	Around buildings	1	NSW
	Irrigation channel /Drain	10	NSW
	Railway	3	NSW
	Roadside	27	SA, NSW, Qld

The glyphosate-resistant awnless barnyard grass, liverseed grass, and windmill grass populations all occur in summer chemical fallow situations. Glyphosate resistant great brome has occurred in winter grain cropping.

Glyphosate-resistant annual ryegrass populations by states:

State	Number of populations
NSW	92
SA	132
Vic	42
WA	43

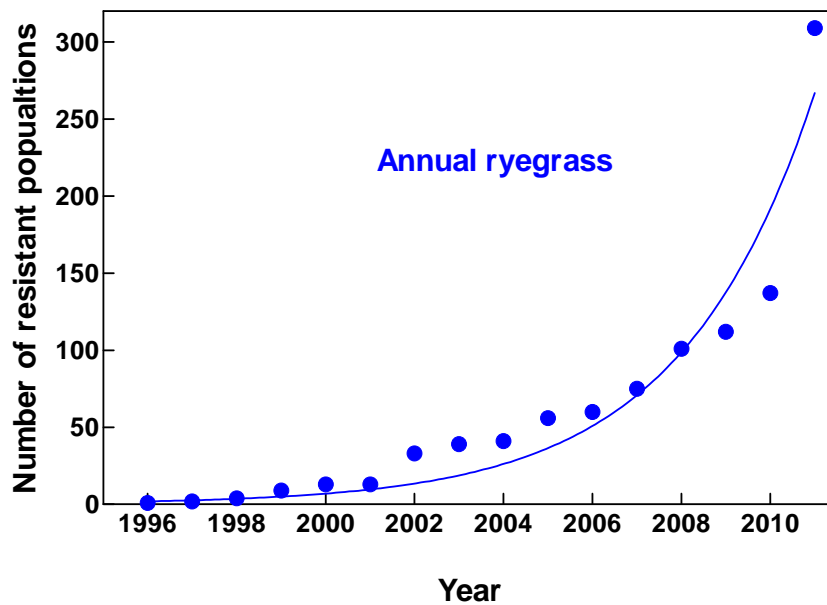
Glyphosate-resistant barnyard grass populations by states:

State	Number of populations
NSW	10
QLD	10
WA	1

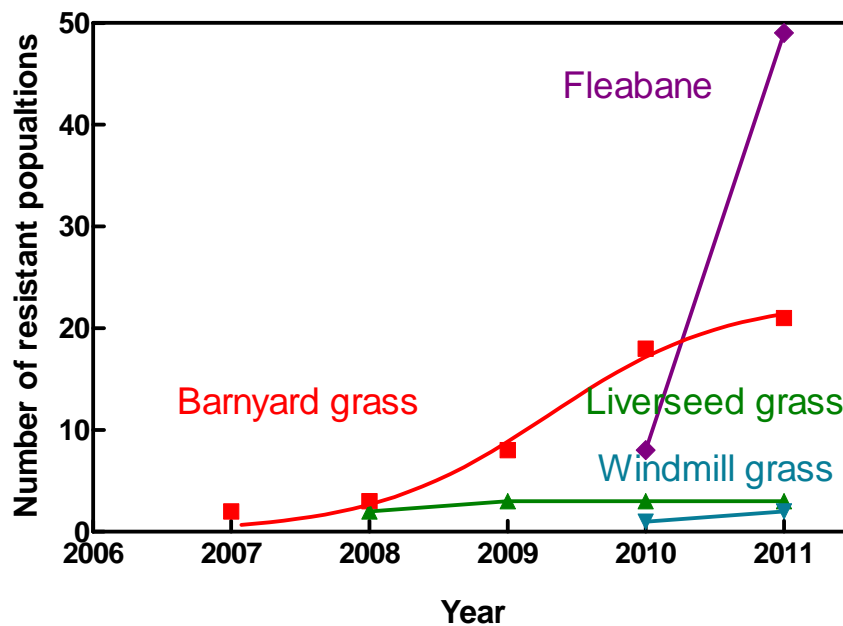
Glyphosate-resistant fleabane populations by states:

State	Number of populations
NSW	30
QLD	13
SA	6

The increase in confirmed cases of glyphosate-resistant annual ryegrass between 1996 and 2011 is:



The increase in confirmed cases of glyphosate resistance in summer weeds between 2007 and 2011 is:



All of the glyphosate resistant weed populations have occurred in situations where there has been intensive use of glyphosate, often over 15 years or more, few or no other effective herbicides used and few other weed control practices are used. This suggests the following are the main risk factors for the evolution of glyphosate resistance:

- Intensive use of glyphosate – every year or multiple times a year for 15 years or more
- Heavy reliance on glyphosate for weed control
- No other weed controls

Farming practices in chemical fallows the northern cropping region are heavily dependent on glyphosate for weed control. Therefore, it is highly likely that unconfirmed populations of glyphosate resistant summer and winter weeds are present in this system.

Farming practices under the vines in vineyards across Australia are heavily dependent on glyphosate for weed control. Therefore, it is highly likely that unconfirmed populations of glyphosate resistant annual ryegrass are present in this system.

These unconfirmed glyphosate-resistant populations are not recorded on the register of glyphosate resistant populations in Australia.

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