

Variation of 20 *Lolium rigidum* biotypes from WA, SA, Vic and NSW to Avadex® Xtra.

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The University of Adelaide completed this report in June 2009. Twenty ryegrass biotypes from different regions of South Australia, Victoria, New South Wales and Western Australia were chosen for testing with Avadex® Xtra. These samples had been sent to Plant Science Consulting for herbicide resistance testing during the 2007 and 2008 seasons.

Key points:

- In 2009, five annual ryegrass (ARG) samples were tested from four states for differences in sensitivity to Avadex Xtra at the University of Adelaide.
- Efficacy is enhanced in the trial due to the lack of stubble, perfect placement of the herbicide and adequate soil cover.
- Findings suggest that 2.5 L/ha or greater would be a robust rate in order to reduce the variation in ARG survival. [Note: rates >2.0L/ha are not registered.]
- Slight differences were observed at low rates:
(most sensitive) SA > Vic > WA > NSW (least sensitive)
- No correlation between resistance to other herbicides and reduced Avadex Xtra sensitivity was observed.
- Farmers should not reduce rates in order to prevent bio-types with low-level resistance from surviving.

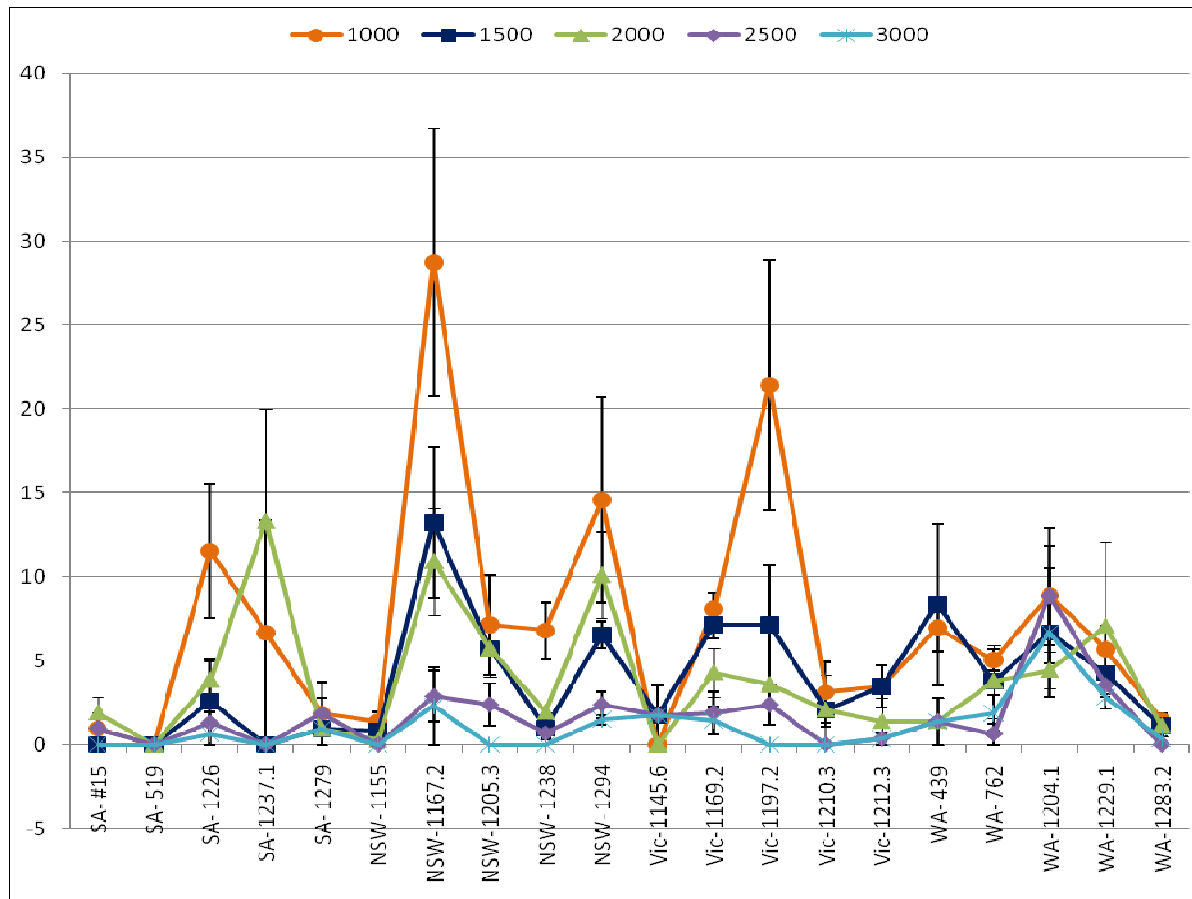
ARG samples:

Sample Label	Town	Region	FOPs	Achieve	Axial	Select	Falcon	Hussar	Logran	OnDuty	Glyphosate	Atrazine	Trifluralin
#15	Laura		R			R							RRR
L519	Pinnaroo	SA	R	R		S			RR				RR
1226	Keith	SA				R					S	RR	R
1237.1	Minlaton	SA				RR							
1279	Lock	SA											
1155	Dubbo	NSW	RR		S				R		S		
1167.2	Forbes	NSW	RRR		R	R	R	RRR	RRR	R		S	
1205.3	Deniliquin	NSW	RRR		R	S			RRR		S		S
1238	Moama	NSW	RRR		R	S		R					
1294	West Wyalong	NSW			RRR	RR	S						
1145.6	Woodend	Vic	R			S		RR		RR			RR
1169.2	Quambatook	Vic			S	S			RRR	RRR			S
1197.2	Inverleigh	Vic			RR	RR		RRR			S	S	S
1210.30	Nhill	Vic											
1212.3	Cobram	Vic		RRR		RR		RRR					S
L439	Mingenew	WA	R			R		RR	RRR		S		S
L762	Northam	WA	RRR	RRR	RRR	RR	R	RRR	RRR	R	S	RR	S
1204.1	Narrogin	WA				RR							
1229.1	Geraldton	WA			RR	RR	RR					RR	R
1283.2	Grass Patch	WA				S						S	

Key: **RRR** - indicates plants tested have strong resistance
RR - indicates medium-level resistance

R - indicates low-level but detectable resistance
S - indicates no detection of resistance

Effect of Avadex Xtra measured as % survival (Y-axis) on 20 ryegrass biotypes originating from NSW, SA, Vic and WA. The rates of Avadex Xtra used are between 1000 and 3000 ml/ha. The trial was assessed 4 weeks after spraying. The herbicides were sprayed directly onto the seed which was then covered with 0.5cm soil to represent an IBS sowing treatment. Standard Error of the means are represented by the error bars. Note: As with any pre-emergent herbicide, crop competition plays an important part in effective weed control.



Avadex Xtra rates

Effect of Avadex Xtra on biotypes 1283.2 (front row) and 1167.2 (back row) 5 weeks after spraying.

