WHEAT VARIETY HERBICIDE TOLERANCE

Rob Wheeler, SARDI, rob.wheeler@sa.gov.au
Michael Zerner, SARDI, michael.zerner@sa.gov.au, 08 8303 9479

Key Points:

- Experiments investigating the tolerance of crop varieties to herbicides are conducted by State agencies throughout Australia, supported by funding from GRDC. Details and results of the studies can be found in State publications, and also on the NVT web site, www.nvtonline.com.au.
- Information provided summarises this work in SA since 1993.

The table below summarises trials conducted in the Hart/Kybunga (SA) area since 1993. Within these experiments, a wide range of herbicides and tank mixes are applied pre and post sowing (crop dependent), at label recommended and twice recommended rates across each variety, under *weed free* conditions. The treatment rates provided an estimate of the varietal tolerance and safety margin likely through any differences in varietal response between the untreated control and the two rates applied. Preliminary results from evaluation of some newer chemistrys eg Boxer Gold and Sakura against newer varieties can be found at www.nvtonline.com.au. Likewise with some of the more recently released varieties such as Cobra, Corack, Emu Rock and Phantom. Of these varieties in early preliminary testing, Emu Rock has shown to be more sensitive to Sakura® than other varieties when applied at above label rates.

Comments and summary tables on varietal tolerance are generally based on data gained from two or more season's experimental results, as year to year variation can be significant.

Table 1: Long Term summary of safety rating and potential % yield loss for selected bread wheat and durum varieties to various herbicides and tank mixes (Blyth and Mallala district trials)

Variety	AGT Kat-ana	Axe	Cata-lina	Corr-ell	Esp-ada	Estoc	Glad-ius	Hyp-erno	Mace	Saint-ly	Sco ut	Tjil-kuri	Rates (product/ ha)	Crop stage at spraying
Years tested	2009 - 2012	2008-2009	2007-2012	2006-2009	2009-2010	2009-2012	2006-2012	2009-2012	2009-2012	2009-2012	2009-2012	2009-2010		
2,4-D Amine 625	✓(2)	**6** (1/2)	**N** (1/3)	**14** (1/4)	**N** (1/2)	✓(2)	**6-11** (2/4)	✓(2)	✓(2)	✓(2)	✓(2)	✓(2)	1.4L	2 node
Achieve®	✓(2)	**N** (1/2)	**N** (1/3)	**10** (1/4)	**7** (1/2)	✓(2)	**5** (1/4)	✓(2)	✓(2)	✓(2)	✓(2)	✓(2)	380g	3 leaf
Affinity®	✓(2)	✓(2)	✓(3)	✓(4)	✓(2)	✓(2)	✓(4)	**N** (2/4)	✓(2)	✓(2)	✓(2)	✓(2)	60g	3 leaf
Ally®	**6** (1/4)	**7** (1/2)	**N** (1/3)	**8-15** (3/4)	✓(2)	✓(2)	**9-18** (2/4)	✓(2)	✓(2)	✓(2)	✓(2)	✓(2)	7g	3 leaf
Axial®	**N** (1/4)	**5** (1/2)	✓(3)	✓(4)	✓(2)	**N** (1/4)	✓(4)	✓(2)	✓(2)	✓(2)	✓(2)	✓(2)	250mL	3 leaf
Banvel M®	-	**N** (2/2)	**N** (1/3)	**6** (1/4)	**7** (1/2)	-	**N** (2/4)	-	-	-	-	-	1.4L	5leaf
Boxer Gold®	✓(2)	✓(1)	✓(1)	✓(1)	✓(2)	✓(2)	**N** (1/1)	✓(2)	**N** (1/4)	✓(2)	✓(2)	✓(2)	2.5L	IBS
Bromoxynil/ MCPA	✓(2)	✓(2)	✓(3)	✓(4)	✓(2)	✓(2)	✓(4)	**5** (1/2)	**N** (1/4)	✓(2)	✓(2)	✓(2)	1.4L	3 leaf
Cadence®	✓(2)	**10** (1/2)	**6-10** (2/3)	**N** (1/4)	✓(2)	✓(2)	**9** (1/4)	**9** (1/2)	**N** (1/4)	✓(2)	✓(2)	✓(2)	200g	5 leaf
Conclude®	-	-	✓(3)	✓(2)	-	-	✓(3)	-	✓(1)	-	✓(3)	-	700mL	5 leaf
Crusader®	-	-	-	✓(1)	-	-	✓(2)	✓(1)	✓(1)	-	✓(2)	-	500mL	3 leaf
Diuron(500SC) /MCPA	✓(2)	**6** (1/1)	✓(2)	✓(3)	-	✓(2)	✓(3)	✓(2)	✓(2)	**6** (1/2)	✓(2)	✓(2)	500mL/350mL	3 leaf
Glean®	✓(2)	**9** (1/2)	✓(1)	**12** (1/2)	**6** (1/2)	**N** (2/4)	**7** (1/2)	**N** (1/4)	**N** (1/2)	**N** (1/3)	**N** (1/3)	✓(2)	20g	3 leaf
Hussar®	✓(2)	**10** (1/2)	**9**(1/3)	**12** (1/4)	✓(2)	✓(2)	**17-19** (2/4)	**N** (1/4)	✓(2)	**N** (1/3)	✓(2)	✓(2)	200g	3 leaf
Logran®	-	**N** (1/2)	✓(3)	✓(4)	**N** (1/2)	-	**5** (1/4)	-	-	-	-	-	35g	PSPE
LVE MCPA	-	✓(1)	✓(2)	✓(3)	-	-	**N** (1/3)	-	-	-	-	-	1.2L	5 leaf
Sakura®	-	-	✓(2)	✓(2)	-	-	✓(2)	-	-	-	✓(2)	-	118g	IBS
Tigrex®	✓(2)	✓(2)	✓(2)	**7** (1/4)	**7** (1/2)	✓(2)	**7** (1/4)	✓(2)	✓(2)	✓(2)	✓(2)	✓(2)	1L	5 leaf

X-y% (w/z)	Significant yield reductions at recommended rate in w years out of z years tested. eg 6-10 (2/4) is yield losses of 6 to 10% in 2 out of 4 years tested
x% (w/z)	Significant yield reduction at recommended rate in 1 trial only in z years of testing eg 8 (1/2) is 8% yield loss in 1 out of 2 years tested
N (w/z)	Narrow safety margin – yield loss at higher than recommended herbicide rate only w years of z years tested.
✓(z)	no yield loss during z years of testing

Acknowledgements

Dennis and Robert Dall and Richard Konzag are gratefully acknowledged for providing land for these experiments together with the SARDI Clare New Variety Agronomy team for their help in trial management.