

## Barley varieties response to herbicides in Western Australia 1999-2010

This research has been conducted in WA wheatbelt to determine if new and existing varieties of barley vary in tolerance to commonly used herbicides.

The sensitivity of the variety compared to unsprayed controls of the same variety is summarised, using the following symbols based on the yield responses across all trials:	
-	not tested or insufficient data
✓	no significant yield reductions at higher than recommended rates in (Z) trials
N (w/z)	narrow margin, significant yield reductions at higher than recommended rate, but not at recommended rate significant event occurring w years out of z years tested. Eg. (2/5) = tested for 5 years, 2 returning a significant yield loss
x% (1/z)	yield reduction (warning) significant yield reduction at recommended rate in 1 trial only in z years of testing
x-y% (w/z)	yield reductions (warning) significant yield reductions at recommended rate in w years out of z years tested.

Always follow label recommendations. All pesticide applications must accord with the currently registered label for that particular pesticide, crop, pest and region. Any research regarding pesticides or their use reported in this website does not constitute a recommendation for that particular use by the authors, the author's organisations or ACAS. It must be emphasised that crop tolerance and yield responses to herbicides are strongly influenced by seasonal conditions.

Herbicides			Avadex® BW	Boxer® Gold	Boxer®Gold + Lexone®	Dual® Gold	Diuron + Dual® Gold	Logran®	Stomp®
			Tri-allate	s-Metolachlor + prosulfocarb	S-Metolachlor + prosulfocarb + metribuzin	s-Metolachlor	Diuron + s-Metolachlor	Triasulfuron	Pendimethalin
	Variety	Years Tested	1999- 03(2)	2006-2009	2008	2008	2008	1999-2001	99-03(2), 06-08
	Site	ABC	B	B	B	B	BC	ABC	
Baudin	01-03(2), 08-10	AB	✓(4)	N (1/2)	✓(1)	✓(1)	✓(1)	✓(1)	✓(5)
Buloke	2008-10	B	-	N (1/2)	✓(1)	✓(1)	✓(1)	-	✓(1)
Commander	2009	B	-	✓(1)	-	-	-	-	-
Fitzgerald	2000	B	✓(1)	-	-	-	-	✓(1)	✓(1)
Gairdner	1999-2000,10	BC	✓(2)	-	-	-	-	✓(2)	✓(2)
Hamelin	01-03(2), 06-07	AB	✓(4)	✓(2)	-	-	-	✓(1)	✓(6)
Hannan	2006-2008	B	-	✓(3)	✓(1)	✓(1)	✓(1)	-	✓(3)
Harrington	2000	B	✓(1)	-	-	-	-	✓(1)	✓(1)
Hindmarsh	2008-2010	B	-	✓(2)	✓(1)	✓(1)	✓(1)	-	✓(1)
Lockyer	2006-2008	B	-	✓(3)	✓(1)	✓(1)	✓(1)	-	✓(3)
Molloy	1999	C	✓(1)	-	-	-	-	✓(1)	✓(1)
Mundah	1999	C	✓(1)	-	-	-	-	✓(1)	✓(1)
Oxford	2009	B	-	✓(1)	-	-	-	-	-
Roe	2006-2008	B	-	✓(3)	✓(1)	✓(1)	✓(1)	-	✓(3)
Stirling	1999-2003	ABC	✓(6)	-	-	-	-	✓(3)	✓(6)
Unicorn	2000-01	B	✓(2)	-	-	-	-	✓(2)	✓(2)
Vlamingh	03(2), 06-07, 10	AB	✓(2)	✓(2)	-	-	-	-	✓(4)
Rates (product/ha)			2 L	2.5 L	2.5 L + 150 g	0.5 L	1 L + 0.5 L	35 g	1.8 L
Crop stage at spraying			IBS	IBS	IBS	IBS	IBS	IBS	IBS

\* Use of 2,4-D ester 800 is restricted in some areas during certain months of the year. Consult the current labels.

2003 (2)/ 03(2) = During 2003, the trials were conducted at two sites i.e Katanning and Avondale.

Herbicides			Triflur® X	Triflur® X	Triflur® X	Treflan® + Lexone®	Yield®	Diuron + Dual® Gold	Diuron + Dual® Gold
			Trifluralin	Trifluralin	Trifluralin	Trifluralin + Metribuzin	Oryzalin + Trifluralin	Diuron + s- Metolachlor	Diuron + s- Metolachlor
Variety	Years Tested	Site	1999-03(2)	2006	2007-2008	02-03(2),06- 08	1999-2001	1999- 01,03(2)	2001-2002
			ABC	B	B	AB	BC	ABC	B
Baudin	01-03(2), 08-10	AB	✓(4)	-	✓(2)	✓(4)	✓(1)	✓(3)	✓(2)
Buloke	2008-10	B	-	-	✓(2)	✓(1)	-	-	-
Commander	2009	B	-	-	✓(1)	-	-	-	-
Fitzgerald	2000	B	✓(1)	-	-	-	✓(1)	✓(1)	-
Gairdner	1999-2000,10	BC	✓(2)	-	-	-	✓(2)	✓(2)	-
Hamelin	01-03(2), 06-07	AB	✓(4)	✓(1)	✓(1)	✓(5)	✓(1)	✓(3)	✓(1)
Hannan	2006-2008	B	-	-	✓(2)	✓(3)	-	-	-
Harrington	2000	B	✓(1)	-	-	-	✓(1)	✓(1)	-
Hindmarsh	2008-2010	B	-	-	✓(2)	✓(1)	-	-	-
Lockyer	2006-2008	B	-	-	✓(2)	✓(3)	-	-	-
Molloy	1999	C	✓(1)	-	-	-	✓(1)	✓(1)	-
Mundah	1999	C	✓(1)	-	-	-	✓(1)	✓(1)	-
Oxford	2009	B	-	-	✓(1)	-	-	-	-
Roe	2006-2008	B	-	-	✓(2)	✓(3)	-	-	-
Stirling	1999-2003	ABC	15 (1/6)	-	-	✓(3)	✓(3)	✓(5)	✓(2)
Unicorn	2000-01	B	✓(2)	-	-	-	✓(2)	✓(2)	✓(1)
Vlamingh	03(2), 06-07, 10	AB	✓(2)	✓(1)	✓(1)	✓(4)	-	✓(2)	-
Rates (product/ha)			1 L	2 L	3 L	1 L + 150 g	2 L	1 L + 0.25 L	1 L + 0.5 L
Crop stage at spraying			IBS	IBS	IBS	IBS	IBS	PSPE	PSPE

Herbicides			Achieve®	Achieve® + Tigrex®	Affinity® + MCPA (Amine)	Ally®	Ally®	Axial®	Barrel®
			Tralkoxydim	Tralkoxydim + Diflufenican + MCPA	Carfentrazone- ethyl + MCPA	Metsulfuron	Metsulfuron	Pinoxadin	Bromoxynil + MCPA + Dicamba
Variety	Years Tested	Site	99-03(2),06- 08	1999	2000-03(2), 06-09	2000-03(2), 06-07	2008	2006-2008	1999-02, 03(2)
			ABC	C	AB	ABC	B	B	ABC
Baudin	01-03(2), 08-10	AB	✓(5)	-	✓(6)	✓(4)	✓(2)	✓(1)	✓(4)
Buloke	2008-10	B	✓(2)	-	✓(2)	-	✓(2)	17 (1/1)	-
Commander	2009	B	✓(1)	-	✓(1)	-	✓(1)	-	-
Fitzgerald	2000	B	-	-	25 (1/1)	✓(1)	-	-	✓(1)
Gairdner	1999-2000,10	BC	✓(1)	✓(1)	14 (1/1)	13 (1/2)	-	-	12 (1/2)
Hamelin	01-03(2), 06-07	AB	✓(4)	-	✓(6)	✓(6)	-	✓(2)	✓(4)
Hannan	2006-2008	B	14 (1/1)	-	✓(3)	✓(2)	✓(1)	✓(3)	-
Harrington	2000	B	-	-	19 (1/1)	✓(1)	-	-	12 (1/1)
Hindmarsh	2008-2010	B	✓(2)	-	✓(2)	-	✓(2)	✓(1)	-
Lockyer	2006-2008	B	21 (1/1)	-	✓(3)	✓(2)	✓(1)	✓(3)	-
Molloy	1999	C	✓(1)	✓(1)	-	✓(1)	-	-	✓(1)
Mundah	1999	C	✓(1)	✓(1)	-	✓(1)	-	-	✓(1)
Oxford	2009	B	✓(1)	-	✓(1)	-	✓(1)	-	-
Roe	2006-2008	B	✓(1)	-	✓(3)	✓(2)	✓(1)	✓(3)	-
Stirling	1999-2003	ABC	✓(4)	✓(1)	19 (1/5)	✓(6)	-	-	✓(6)
Unicorn	2000-01	B	-	-	✓(2)	✓(2)	-	-	✓(2)
Vlamingh	03(2), 06-07, 10	AB	✓(3)	-	✓(4)	20 (1/4)	-	20 (1/2)	✓(2)
Rates (product/ha)			380 g	380 g + 0.8 L	50 g + 0.5 L	5 g	7 g	0.3 L	1 L
Crop stage at spraying			Z13-Z15	Z13-Z14	Z13-Z15	Z13-Z14	Z13-Z15	Z13-Z14	Z13-Z14

Herbicides			Bromoxynil MCPA	Buctril® MA	Cheetah® Gold	Decision®	Diuron + MCPA (Amine)	Diuron + MCPA (Amine)	Diuron + 2,4-D (Amine)
			Bromoxynil + MCPA	Bromoxynil + MCPA	Diclofop + Sethoxydim + Fenoxaprop	Diclofop + Sethoxydim	Diuron + MCPA	Diuron + MCPA	Diuron + 2,4-D
Variety	Years Tested	Site	1999, 03(2)	2002, 06-08	2006-2008	2002, 03(2)	1999-2001	2008	2002, 03(2)
			AB	B	B	AB	BC	B	AB
Baudin	01-03(2), 08-10	AB	✓(3)	✓(2)	✓(1)	✓(3)	✓(1)	✓(2)	✓(3)
Buloke	2008-10	B	-	✓(1)	✓(1)	-	-	17 (1/2)	-
Commander	2009	B	-	-	-	-	-	✓(1)	-
Fitzgerald	2000	B	-	-	-	-	✓(1)	-	-
Gairdner	1999-2000,10	BC	-	-	-	-	16 (1/2)	-	-
Hamelin	01-03(2), 06-07	AB	✓(3)	20 (1/3)	✓(2)	✓(3)	✓(1)	-	✓(3)
Hannan	2006-2008	B	-	✓(3)	19 (1/3)	-	-	✓(1)	-
Harrington	2000	B	-	-	-	-	✓(1)	-	-
Hindmarsh	2008-2010	B	-	✓(1)	✓(1)	-	-	✓(2)	-
Lockyer	2006-2008	B	-	✓(3)	✓(3)	-	-	✓(1)	-
Molloy	1999	C	-	-	-	-	✓(1)	-	-
Mundah	1999	C	-	-	-	-	✓(1)	-	-
Oxford	2009	B	-	-	-	-	-	✓(1)	-
Roe	2006-2008	B	-	✓(3)	✓(3)	-	-	✓(1)	-
Stirling	1999-2003	ABC	✓(2)	✓(1)	-	✓(3)	✓(3)	-	✓(3)
Unicorn	2000-01	B	✓(1)	-	-	-	✓(2)	-	-
Vlamingh	03(2), 06-07, 10	AB	✓(2)	✓(2)	✓(2)	✓(2)	-	-	✓(2)
Rates (product/ha)			1 L	1.4 L	1L	1 L	0.35 L + 0.4 L	0.4 L + 0.5 L	0.5 L + 0.25 L
Crop stage at spraying			Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z14-Z15	Z13-Z14

Herbicides			Eclipse® + MCPA LVE	Glean®	Glean®	Glean® + Ally® + MCPA	Hoegrass®	Hoegrass®	Hoegrass® + Achieve®
			Metosulam + MCPA	Chlorsulfuron	Chlorsulfuron	Chlorsulfuron + Metsulfuron + MCPA	Diclofop- methyl	Diclofop- methyl	Diclofop- methyl + Tralkoxydim
Variety	Years Tested	Site	2006-2008	2002, 03(2)	2006-2008	2001	2002	1999, 03(2), 06-08	2002, 03(2), 06-08
			B	AB	B	B	B	ABC	AB
Baudin	01-03(2), 08-10	AB	✓(1)	✓(3)	✓(1)	✓(1)	✓(1)	✓(4)	✓(4)
Buloke	2008-10	B	✓(1)	-	✓(1)	-	-	✓(2)	✓(1)
Commander	2009	B	-	-	-	-	-	✓(1)	-
Fitzgerald	2000	B	-	-	-	-	-	-	-
Gairdner	1999-2000,10	BC	-	-	-	-	-	✓(1)	-
Hamelin	01-03(2), 06-07	AB	✓(2)	✓(3)	✓(2)	✓(1)	✓(1)	18 (1/4)	✓(5)
Hannan	2006-2008	B	17 (1/3)	-	✓(3)	-	-	✓(3)	✓(3)
Harrington	2000	B	-	-	-	-	-	-	-
Hindmarsh	2008-2010	B	✓(1)	-	✓(1)	-	-	✓(2)	✓(1)
Lockyer	2006-2008	B	16 (1/3)	-	✓(3)	-	-	13 (1/3)	✓(3)
Molloy	1999	C	-	-	-	-	✓(1)	-	-
Mundah	1999	C	-	-	-	-	✓(1)	-	-
Oxford	2009	B	-	-	-	-	-	✓(1)	-
Roe	2006-2008	B	✓(3)	-	✓(3)	-	-	✓(3)	✓(3)
Stirling	1999-2003	ABC	-	✓(3)	-	✓(1)	✓(1)	✓(3)	✓(3)
Unicorn	2000-01	B	-	-	-	✓(1)	-	-	-
Vlamingh	03(2), 06-07, 10	AB	✓(2)	✓(2)	✓(2)	-	-	✓(4)	✓(4)
Rates (product/ha)			5 g + 0.5 L	12.5 g	20 g	g + 3 g + 0.3	1 L	1.5 L	200 g + 200 g
Crop stage at spraying			Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z15	Z13-Z14

Herbicides			Jaguar®	Paragon®	Tigrex®	Tigrex®	Topik®	Tristar®	Tristar® + Tigrex®
			Bromoxynil + Diflufenican	Picolinafen + MCPA	Diflufenican + MCPA	Diflufenican + MCPA	Clodinafop	Diclofop + Fenoxaprop	Diclofop + Fenoxaprop + Diflufenican + MCPA
Variety	Years Tested	Site	99,02-03(2), 06-08	2001-03(2)	2003(2)	1999-02, 06-08	1999	1999	1999
			ABC	AB	AB	BC	C	C	C
Baudin	01-03(2), 08-10	AB	✓(4)	13 (1/4)	✓(2)	16 (1/3)	-	-	-
Buloke	2008-10	B	✓(1)	-	-	✓(2)	-	-	-
Commander	2009	B	-	-	-	✓(1)	-	-	-
Fitzgerald	2000	B	-	-	-	21 (1/1)	-	-	-
Gairdner	1999-2000,10	BC	✓(1)	-	-	✓(1)	✓(1)	✓(1)	✓(1)
Hamelin	01-03(2), 06-07	AB	✓(5)	✓(4)	✓(2)	6 (1/4)	-	-	-
Hannan	2006-2008	B	✓(3)	-	-	14 (1/3)	-	-	-
Harrington	2000	B	-	-	-	✓(1)	-	-	-
Hindmarsh	2008-2010	B	✓(1)	-	-	✓(2)	-	-	-
Lockyer	2006-2008	B	✓(3)	-	-	✓(3)	-	-	-
Molloy	1999	C	✓(1)	-	-	✓(1)	✓(1)	✓(1)	✓(1)
Mundah	1999	C	✓(1)	-	-	✓(1)	✓(1)	✓(1)	✓(1)
Oxford	2009	B	-	-	-	✓(1)	-	-	-
Roe	2006-2008	B	✓(3)	-	-	✓(3)	-	-	-
Stirling	1999-2003	ABC	✓(4)	✓(4)	✓(2)	✓(4)	✓(1)	✓(1)	✓(1)
Unicorn	2000-01	B	-	✓(1)	-	23 (1/2)	-	-	-
Vlamingh	03(2), 06-07, 10	AB	✓(4)	✓(2)	✓(2)	✓(2)	-	-	-
Rates (product/ha)			1 L	0.375 L	0.750 L	1L	0.140 L	1.5 L	1.5 L + 0.8 L
Crop stage at spraying			Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z13-Z14	Z12-Z14	Z13-Z14

Herbicides			Wildcat®	Precept®	Velocity®	Paragon	MCPA Amine 500	MCPA Amine 500	2,4-D Amine 500
			Fenoxaprop-P-ethyl	Pyrasulfotole + MCPA Ester	Bromoxynil + Pyrosulfotole	Picolinafen + MCPA	MCPA	MCPA	2,4-D Amine
Variety	Years Tested	Site	1999	2007-2008	2009-10	2007-2008	2003(2)	2006-2008	1999-00, 03(2)
			C	B	B	B	AB	B	BC
Baudin	01-03(2), 08-10	AB	-	✓(1)	✓(2)	✓(1)	✓(2)	✓(1)	✓(2)
Buloke	2008-10	B	-	✓(1)	✓(2)	✓(1)	✓(1)	✓(1)	-
Commander	2009	B	-	-	✓(1)	-	-	-	-
Fitzgerald	2000	B	-	-	-	-	-	-	✓(1)
Gairdner	1999-2000,10	BC	9 (1/1)	-	✓(1)	-	-	-	✓(2)
Hamelin	01-03(2), 06-07	AB	-	✓(1)	-	✓(1)	✓(2)	✓(2)	✓(2)
Hannan	2006-2008	B	-	15 (1/2)	-	✓(2)	-	14 (1/3)	-
Harrington	2000	B	-	-	-	-	-	-	✓(1)
Hindmarsh	2008-2010	B	-	✓(1)	✓(2)	✓(1)	✓(1)	✓(1)	-
Lockyer	2006-2008	B	-	✓(2)	-	✓(2)	-	✓(3)	-
Molloy	1999	C	✓(1)	-	-	-	-	-	✓(1)
Mundah	1999	C	15 (1/1)	-	-	-	-	-	✓(1)
Oxford	2009	B	-	-	✓(1)	-	-	-	-
Roe	2006-2008	B	-	✓(2)	-	✓(2)	-	✓(3)	-
Stirling	1999-2003	ABC	✓(1)	-	-	-	✓(2)	-	✓(4)
Unicorn	2000-01	B	-	-	-	-	-	-	✓(1)
Vlamingh	03(2), 06-07, 10	AB	-	✓(1)	✓(1)	✓(1)	✓(2)	✓(2)	✓(2)
Rates (product/ha)			0.5 L	1L + 1%	0.670 L	0.5 L	1.25 L	2 L	1 L
Crop stage at spraying			Z13-Z14	Z14-Z15	Z14-Z15	Z15-Z16	Z15-Z16	Z15-Z16	Z15-Z16

Herbicides			2,4-D Amine 625	2,4-D Ester 800	2,4-D Ester 800	2, 4-D LV Ester 680 (xtra)	Dicamba 500	Dicamba 500
			2,4-D Amine	2,4-D Ester	2,4-D Ester	2,4-D L V Ester	Dicamba	Dicamba
Variety	Years Tested	Site	2006-2008	1999-2000	2003(2), 2006	2007-2009	2003 (2)	2007-2008
			B	BC	AB	B	AB	B
Baudin	01-03(2), 08-10	AB	✓(2)	-	✓(2)	✓(1)	✓(2)	✓(1)
Buloke	2008-10	B	✓(2)	-	-	✓(1)	-	✓(1)
Commander	2009	B	✓(1)	-	-	-	-	-
Fitzgerald	2000	B	-	✓(1)	-	-	-	-
Gairdner	1999-2000,10	BC	-	✓(2)	-	-	-	-
Hamelin	01-03(2), 06-07	AB	✓(2)	-	15 (1/3)	✓(1)	✓(2)	✓(1)
Hannan	2006-2008	B	✓(3)	-	✓(1)	✓(2)	-	✓(2)
Harrington	2000	B	-	✓(1)	-	-	-	-
Hindmarsh	2008-2010	B	✓(2)	-	-	✓(1)	-	✓(1)
Lockyer	2006-2008	B	14 (1/3)	-	✓(1)	✓(2)	-	✓(2)
Molloy	1999	C	-	✓(1)	-	-	-	-
Mundah	1999	C	-	✓(1)	-	-	-	-
Oxford	2009	B	✓(1)	-	-	-	-	-
Roe	2006-2008	B	✓(3)	-	✓(1)	✓(2)	-	✓(2)
Stirling	1999-2003	ABC	-	✓(2)	✓(2)	-	✓(2)	-
Unicorn	2000-01	B	-	✓(1)	-	-	-	-
Vlamingh	03(2), 06-07, 10	AB	✓(2)	-	✓(3)	✓(1)	✓(2)	✓(1)
Rates (product/ha)			1.3 L	0.5 L	0.7 L	0.8 L	0.280 L	0.4 L
Crop stage at spraying			Z15-Z16	Z15-Z16	Z15-Z16	Z15-Z16	Z21+	Z21+

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Research site location	Avondale(A)	Katanning (B)	Newdegate(C)
Site soil type	Duplex sandy loam	Loamy Sand duplex/Sandy gravel duplex	Duplex sand over clay
Site pH (CaCl <sub>2</sub> )	5	4.5-5.3	4.1
Site annual average rainfall (mm)	420	422	375



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ACAS seeks to avoid putting information regarding unregistered pesticides or unregistered use of pesticides on this website. However it is possible that occasionally ACAS may unintentionally include such information. All pesticide applications must accord with the currently registered label for that particular pesticide, crop, pest and