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1990

## Crop tolerance to herbicides.

D. Bowran

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Experimental Summary

1990

David Bowran  
Research Officer

Neil Thomson  
Technical Assistant

Weed Science

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Notes on Analysis: All experiments except 90NA100 are laid out as strip plots. Analysis is by SAFE (Spatial Analysis of Field Experiments). Significant reductions in yield at the 95% level of confidence is shown by one asterisk.

**TRIAL TITLE: BARLEY TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90AL41**

OFFICERS: D. Bowran, B. Roberts, N. Thomson.

CO-OPERATOR: Albany Office Dept. of Ag. LOCATION: J Hurst. Property  
Jerramungup

CROP(S): Barley

DATE SOWN: 1/6/90

SOIL TYPE: Sandy Loam

FERTILIZER: 100kg/ha Agras Nol.

GROUND PREPARATION: -

EXPERIMENTAL DESIGN: Strip Plot.

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE: 1.3m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	1/6/90	26/6/90	11/7/90	15/8/90
CROP STAGE:	IBS/IAS	Z12.5	Z14	Z16
NOZZLE TYPE:	80015LP	80015LP	8001LP	8001LP
VOLUME (L/Ha):	71	71	37	49
PRESSURE (KPa):	150	150	130	200

**TEMPERATURES (°C)**

(a) wet/dry	10°C/13°C	10°C/14°C	12°C/15°C	12°C/13°C
(b) previous 24hrs (min/max)	-	-	-	-
(c) next 24hrs (min/max)	-	-	-	-

**RAINFALL (mm):**

(a) previous 24hrs	-	-	-	-
(b) next 24hrs	-	-	-	-

**TOTALS:**

MAY - JUNE - JULY - AUG - SEPT - OCT -

**WEEDS:** nil

**COMMENTS:** With the exception of Glean on Onslow, all varieties tolerated the herbicides applied in 1990 at this site. The herbicide treatments containing diuron were well tolerated, even in mixture with other grass herbicides. The potential for broad-spectrum mixtures of herbicides for use in barley on the South Coast is supported by these results.

Trial no. 90AL41

		Timing	Ulanda	Stirling	Windich	Moondyne	Onslow
Control	Yield t/ha		3.40	2.85	3.15	3.18	3.82
Stomp	1.5 L	IBS	108	105	111	106	105
Diuron	1.5 L	IBS	103	103	101	117	100
Stomp + Diuron	1.0 L + 1.0 L	IBS	118	101	104	115	95
Lexone + Diuron	133 g + 1.0 L	IBS	102	103	107	111	99
Dual + Diuron	1.0 L + 1.0 L	PPPE	108	100	108	120	100
Stomp + Diuron	1.0 L + 1.0 L	PPPE	109	104	112	109	103
Lexone + Diuron	133 g + 1.0 L	PPPE	112	108	104	107	94
Lontrel	600 mL	Z13	108	100	105	114	103
Glean + wa	20 g	Z13	107	98	101	98	80
Diuron + 2,4-D amine	600 mL + 300 mL	Z15-21	104	98	103	105	98
Hoegrass + wa	1.5 L	Z13	108	93	101	113	98
Hoe + Brom + Brod + wa	1.0 L + 1.0 L + 75 mL	Z13	106	105	103	107	105
Barrel	1.0 L	Z13	101	91	91	98	93
Ally + wa	10 g	Z13	109	92	107	103	91
Grasp + wa	1.5 L	Z14-21	106	98	102	104	103
Diuron + MCPA	350 mL + 400 mL	Z14	105	106	97	109	101
Igran	850 mL	Z14	105	100	97	107	103
Tigrex	2.0 L	Z14	98	97	97	115	112
2,4-D amine + wa	1.0 L	Z15-17	112	98	94	102	99

**TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90EC36**

OFFICERS: D. Bowran N. Thomson                      LOCATION: East Chapman Res. annex  
CO-OPERATOR:    SEEDING RATE: 50kg/ha  
CROP(S): Wheat, barley, triticale, oats.      DATE SOWN: 12/6/90  
SOIL TYPE: Eradu yellow sand.                      FERTILIZER: Agras Nol 50kgs/ha

GROUND PREPARATION:      Glyphosate 1.0L/ha with 2 applications one 3 weeks prior to seeding and another 2 days prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot  
PLOT SIZE: 3.0m x 10.0m  
HARVESTING SIZE: 1.6m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	29/5/90	12/6/90	18/7/90	7/8/90	6/9/90
CROP STAGE:	2WEEKS.BS	IBS	Z13	Z17/24	Z40+
NOZZLE TYPE:	110015LP	110015LP	110015LP	110015LP	8003LP
VOLUME (L/Ha):	65	63	62	67	108
PRESSURE (KPa):	-	160	160	170	160

**TEMPERATURES (°C)**

(a) wet/dry	15°C/18°C	13°C/15°C	12°C/14°C	12°C/15°C	16°C/25°C
(b) previous 24h					
(min/max)	12°C/18°C	10°C/18°C	9°C/16°C	8°C/15°C	7°C//29°C
(c) next 24hrs					
(min/max)	10°C/17°C	10°C/18°C	9°C/17°C	6°C/17°C	13°C/30°C

**RAINFALL (mm) :**

(a) previous 24h	3.2	0.2	0.6	0.8	0.0
(b) next 24h	0.2	0.0	0.0	0.2	0.2

**TOTALS:**

MAY 32.0      JUNE 50.4      JULY 56.4      AUG 43.0      SEPT 16.6      OCT 32.2

**WEEDS:** minor: Brome grass

**COMMENTS:**

Most varieties tolerated the rates of herbicide used, with only 911 showing significant reductions in yield with Glean (20 and 40 g), Treflan and diuron + MCPA (at double rates). Yagan and I0/348 were very susceptible to pre-emergent Logran, and their tolerance to Glean at all rates was low. Ally applied 10 days before seeding was safe on all wheat varieties.

Trial no. 90EC36

		Timing	Reeves	Blade	781	793	Kulin	911	Yagan	I0348
Control	Yield t/ha		1.62	1.29	1.48	1.77	1.53	1.45	1.45	0.74
Glean	12.5 g	IBS/Z13	100	98	108	96	103	93	90	86
Glean	20 g	IBS/Z13	93	104	99	85	84	87*	87	58*
Glean	40 g	IBS/Z13	82	83	90	84	87	85*	81*	60*
Logran	35 g	IBS	96	102	105	95	104	103	64*	70*
Logran	70 g	IBS	104	108	109	98	99	100	62*	57*
Stomp Plus	1.0 L	IBS	92	108	109	101	101	91	94	86
Treflan	1.0 L	IBS	93	97	101	88	83	81*	100	42*
Ally	5 g	10 days BS	98	103	101	98	95	90	89	82
Hoegrass + wa	1.0 L	Z12-13	93	93	111	106	104	93	98	52*
Hoegrass + wa	2.0 L	Z12-13	92	99	96	100	112	92	99	18*
Hoegrass + Glean + Oil	750 g + 5 g + 1%	Z12-13	100	111	126	101	100	99	106	101
Ally + wa	5 g	Z13-14	89	97	98	85	87	91	90	59*
Tigrex	500 mL	Z13-14	103	95	110	104	102	93	90	69*
Brominil M	1.0 L	Z13-14	97	104	109	98	102	100	96	90
Diuron + MCPA	350 mL + 400 mL	Z13-14	94	107	102	88	88	89	101	93
Diuron + MCPA	700 mL + 800 mL	Z13-14	86	98	95	88	88	80*	78*	95
Puma	1.5 L	Z13-14	95	103	101	97	99	100	100	27*
2,4-D ester	650 mL	Z15-17	90	108	99	83	90	97	96	61*
2,4-D ester	650 mL	Z30	92	91	100	96	80	87	98	73

**TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90EB45**

OFFICERS: D. Bowran, N. Thomson. LOCATION: East Beverly Res. annex  
CO-OPERATOR: SEEDING RATE: 40kg/ha  
CROP(S):Wheat, barley, oats (various) DATE SOWN:1/6/89  
SOIL TYPE:Sandy Loam FERTILIZER: 100kg/ha Agras Nol.  
GROUND PREPARATION: 1.0L Glyphosate 2 weeks prior to seeding and 1.0L Glyphosate  
just prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot.  
PLOT SIZE: 3.0m x 10.0m  
HARVESTING SIZE: 1.6m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	1/6	2/7	4/7	27/7	13/8	30/8
CROP STAGE:	IBS/IAS	Z12.5	Z13	Z14.5	Z16	Z32
NOZZLE TYPE:	8001LP	110015LP	110015LP	110015LP	8002LP	110015LP
VOLUME (L/Ha):	45	60	65	62	90	60
PRESSURE (KPa):	160	160	165	160	150	160

**TEMPERATURES (°C)**

(a) wet/dry	13C/20C	12°C/14°C	11°C/15°C	9°C/12°C	10°C/13°C	13°C/14°C
(b) previous 24hr (min/max)	3°C/17°C	0°C/12°C	1°C/14°C	-	-	6°C/16°C
(c) next 24hrs (min/max)	2°C/20°C	1°C/16°C	3°C/16°C	-	8°C/14°C	6°C/16°C

**RAINFALL (mm):**

(a) previous 24h	0.0	0.0	0.0	0.0	0.5	1.0
(b) next 24hrs	0.0	0.0	0.0	0.0	0.0	0.0

**TOTALS:**

MAY 65.9 JUNE 36.7 JULY 67.0 AUG 32.7 SEPT 18.6 OCT 27.0

**WEEDS:** Wild Oats  
Annual Ryegrass  
Wild radish

**COMMENTS:**

This site was infested with quite high populations of weeds and is more realistically an efficacy site. Annual rye-grass and wild radish were the most common, with a few small patches of wild oats. Weeds were least in Reeves and Corrigin, and greatest in Kulin. While Glean at all rates gave adequate control of all weeds, yields in all varieties were well below those of Logran, which were below those obtained with a Hoegrass + Bromoxynil + Brodal mixture in most cases. Comparison of tolerance levels between treatments is not possible given the presence of weeds.



Trial no. 90EB45

		Timing	Reeves	Corrigin	Dagger	781	793	Kulin	IO 349	Windich	Mortlock	336
Control	Yield t/ha		2.47	2.43	1.87	1.94	2.24	1.67	0.77	2.38	1.95	2.55
Glean	12.5 g	IBS-Z13	102	100	128	121	110	132	123	90	89	99
Glean	20 g	IBS-Z13	88	81*	108	97	87	84	83	91	84	91
Glean	40 g	IBS-Z13	88*	80*	110	92	89	87	82	70	76*	86
Logran	35 g	IBS	115	113	138	124	108	136	92	82	97	97
Logran	70 g	IBS	108	114	130	127	115	138	123	100	91	94
Stomp	1.8 L	IBS	108	98	112	108	95	120	134	90	99	97
Avadex	2.0 L	IBS	116	112	133	125	123	147	112	96	100	92
Ally	5 g	10 days BS	94	99	128	118	125	151	160	110	100	107
Hoegrass	1.5 L	Z13	113	113	127	121	112	144	69	97	76*	91
Hoegrass	3.0 L	Z13	109	103	126	123	121	148	26*	97	31*	48*
Hoegrass + Glean	750 mL + 5 g	Z13	109	103	125	122	108	116	107	98	97	110
Ally + wa	5 g	Z13	100	97	128	125	108	103	72	115	87	103
Hoe + Brom + Brod + wa	750 mL + 1.0 L + 50 mL	Z13	122	113	140	134	129	163	95	104	82	81
Buctril MA	1.0 L	Z13	97	99	124	107	99	116	75	108	99	108
Diuron + MCPA	350 mL + 400 mL	Z13	105	102	130	129	116	140	26*	100	94	86
Tigrex	500 mL	Z13	103	100	119	123	114	130	149	95	99	97
Grasp + wa	1.5 L	Z14-21	107	103	115	123	111	135	41	108	81	69*
2,4-D amine + wa	1.0 L	Z16-18	101	104	137	134	127	143	4*	115	70*	71
2,4-D amine + wa	1.0 L	Z31-32	103	108	127	113	103	94	38	106	67*	73

**TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES****TRIAL NUMBER: 90KA130**

OFFICERS: D Bowran, N Thomson  
CO-OPERATOR:  
CROP(S): Wheat, Barley, & Oats  
SOIL TYPE: Sandy Gravel over clay  
GROUND PREPARATION: Cultivated, 1.0L Roundup pre seeding  
EXPERIMENTAL DESIGN: Strip Plot  
PLOT SIZE: 3.0m x 9.0m  
HARVESTING SIZE: 1.6m x 9.0m

LOCATION: Gt.Southern Res.Ins.  
SEEDING RATE: 50kg/ha  
DATE SOWN: 25/6/90  
FERTILIZER: 100kg/ha Agras Nol.

**SPRAYING DETAILS:**

SPRAYING DATE:	25/6/90	31/7/90	14/8/90	12/9/90	20/9/90
CROP STAGE:	IBS/IAS	Z12-13	Z13-14	Z17	Z32
NOZZLE TYPE:	110015LP	110015LP	8002LP	8001LP	110015LP
VOLUME (L/Ha):	60	60	96	45	70
PRESSURE (KPa):	160	160	150	170	165

**TEMPERATURES (°C)**

(a) wet/dry	9°C/11°C	11°C/15°C	12°C/14°C	11°C/15°C
(b) previous 24h (min/max)	-	-	-	-
(c) next 24hrs (min/max)	-	-	-	-

**RAINFALL (mm):**

(a) previous 24h	0.0	0.0	0.5	0.0	2.5
(b) next 24hrs	0.0	0.0	0.0	0.0	0.0

**TOTALS:**

MAY-30.0    JUNE-28.0    JULY-92.0    AUG-36.0    SEPT-39.0    OCT-27.5

**WEEDS:** Minor: Ryegrass**COMMENTS:**

Yield reductions were generally greater at this site, with Reeves, 884 and 895 having the highest tendency for reduced yield. Reeves appeared more sensitive to Glean, Logran, Ally, Barrel and 2,4-D, while 884 was most sensitive to phenoxy herbicides. In contrast to other sites 781 appeared more Glean sensitive, while 793 was more Glean tolerant. Both oat varieties were generally tolerant to the herbicides which are recommended for this crop. The phenoxy sensitivity of 884 requires investigation given its parentage of phenoxy sensitive lines.

Trial no. 90KA130

		Timing	Reeves	Corrigin	781	793	884	895	911	336	348
Control	Yield t/ha		2.10	1.84	2.05	1.71	1.95	2.08	1.89	1.97	1.66
Glean	12.5 g	IBS/Z13	93	99	95	95	91	86	95	106	110
Glean	20 g	IBS/Z13	93	98	87	107	86	82	101	111	106
Glean	40 g	IBS/Z13	87*	88*	84	88	78*	80	91	108	120
Logran	35 g	IBS	93	105	102	106	85	78	99	82*	70*
Logran	70 g	IBS	85*	103	96	100	93	84	106	70*	61*
Stomp Plus	1.0 L	IBS	80*	87*	99	103	97	94	100	97	104
Treflan	1.0 L	IBS	89	97	86	107	81	90	111	105	86
Hoe + Buct + Brod + wa	1.0 L + 1.0 L + 75 mL	Z12-13	82*	98	94	112	90	87	112	88	64*
Hoegrass + wa	1.0 L	Z12-13	95	107	89	97	109	95	101	95	77*
Hoegrass + wa	2.0 L	Z12-13	93	107	103	112	89	93	111	77*	34*
Hoegrass + Glean + Oil	750 g + 5 g + 1%	Z12-13	106	107	98	113	95	95	98	105	80*
Ally + wa	5 g	Z13-14	82*	96	90	98	82	87	105	85	71*
Tigrex	500 mL	Z13-14	91	93	92	89	77*	90	96	102	108
Barrel	1.0 L	Z13-14	85*	96	96	102	68*	89	100	95	104
Diuron + MCPA	350 mL + 400 mL	Z13-14	91	94	85	94	70*	86	94	101	118
Diuron + MCPA	700 mL + 800 mL	Z13-14	98	88	89	90	84	94	95	117	91
Puma	1.5 L	Z13-14	90	92	95	111	88	94	100	52*	7*
2,4-D amine	1.0 L	Z15-17	87*	97	92	95	62*	83	98	88	50*
2,4-D amine	1.0 L	Z30	83*	99	88	99	82	94	97	91	89

**TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90M85**

OFFICERS: D. Bowran, N. Thomson.

LOCATION: Merriden Res. Stn.

CO-OPERATOR:

SEEDING RATE: 50kg/ha

CROP(S): Wheat, Barley & Oats

DATE SOWN: 20/6/90

SOIL TYPE: Clay Loam

FERTILIZER: Agras 100kg/ha

GROUND PREPARATION: Sprayed 1.0L/ha Glyphosate prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot

PLOT SIZE: 7.0m x 3.0m

HARVESTING SIZE: 7.0m x 1.5m

**SPRAYING DETAILS:**

SPRAYING DATE:	27/7/90	30/8/90
CROP STAGE:	Z12-3	Z15+
NOZZLE TYPE:	110015LP	110015LP
VOLUME (L/Ha):	60	62
PRESSURE (KPa):	150	160

**TEMPERATURES (°C)**

(a) wet/dry	10°C/13°C	12°C/17°C
(b) previous 24h		
(min/max)	1°C/13°C	8°C/15°C
(c) next 24hrs		
(min/max)	0°C/14°C	3°C/18°C

**RAINFALL (mm):**

(a) previous 24h	0.2	0.0
(b) next 24hrs	0.0	0.0

**TOTALS: (mm)**

MAY 7.0      JUNE 35.4      JULY 47.8      AUG 22.7      SEPT 26.6      OCT 26.3

**WEEDS:**      Major: Wild Oats  
             Minor: Ryegrass.

**COMMENTS:**

Although some weeds were present at this site, no yield increases could be attributed to herbicide use. While most varieties were tolerant to the herbicides tested, Dagger appeared to be sensitive to both Glean and Ally, Hoegrass, Avadex and to Logran at the highest rate.

Trial no. 90M85

		Timing	Reeves	Corrigin	Wilgoyne	Dagger	781	793
Control	Yield t/ha		1.26	1.44	1.35	1.38	1.51	1.59
Glean	12.5 g	IBS	101	108	104	84*	105	104
Glean	20 g	IBS	95	93	75	74*	88	79
Logran	35 g	IBS	108	100	96	92	104	98
Logran	70 g	IBS	102	92	95	73*	103	93
Avadex	2.0 L	IBS	100	98	80	70*	90	101
Stomp	1.8 L	IBS	104	108	101	94	106	97
Hoegrass + wa	2.0 L	Z12-13	103	101	95	74*	94	109
Hoe + Glean + Oil	750 mL + 5 g	Z12-13	104	104	101	88	96	89
Ally + wa	5 g	Z13	101	114	96	57*	84	95
Tigrex	500 mL	Z13	100	103	103	92	98	101
Buctril MA	1.0 L	Z13	109	108	101	90	92	86
Diuron + MCPA lve	350 mL + 400 mL	Z13	85	97	93	73*	83	91
Grasp + wa	1.0 L	Z13	108	115	98	91	99	102
2,4-D ester	650 mL	Z15-17	96	104	86	88	92	76

**TRIAL TITLE: TOLERANCE OF CORRIGIN AND TINCURRIN WHEAT TO POST  
EMERGENT HERBICIDES FOR GRASS WEED CONTROL.**

**TRIAL NUMBER: 90NA100**

OFFICERS: D. Bowran, N. Thomson  
CO-OPERATOR: R. Parsons  
CROP(S): Wheat  
SOIL TYPE: Sandy loam over clay  
GROUND PREPARATION:  
EXPERIMENTAL DESIGN: Strip Plot  
PLOT SIZE: 3.0mx10.0m  
HARVESTING SIZE: 1.5mx10.0m

LOCATION: Pingelly  
DATE SOWN: early June  
FERTILIZER: unknown

**SPRAYING DETAILS:**

SPRAYING DATE:  
CROP STAGE: Z12-13  
NOZZLE TYPE: 8001LP  
VOLUME (L/Ha): 48  
PRESSURE (KPa): 150

**TEMPERATURES (°C)**

- (a) wet/dry
- (b) previous 24h  
(min/max)
- (c) next 24hrs  
(min/max)

**RAINFALL (mm):**

- (a) previous 24h
- (b) next 24hrs

**TOTALS:**

MAY	JUNE	JULY	AUG	SEPT	OCT
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**WEEDS:** Some Annual Ryegrass

**COMMENTS**

When selected, this site appeared to have very few annual rye-grass. However, based on the results, these plants were quite competitive. Most herbicide treatments increased yield in both varieties, but these increases were generally not significant.

Trial no. 90NA100

		Timing	Corrigin	Tincurrin
Control	Yield t/ha		1.40	2.20
Glean	25 g	Z13	113	112
Logran	35 g	Z13	120	112
Ally	5 g	Z13	97	120
Hoegrass	1.5 L	Z13	117	116
Grasp	1.0 L	Z13	119	121
Puma	1.5 L	Z13	119	114
Hoegrass + Glean + Oil	750 ml + 5 g	Z13	134	117

**TRIAL TITLE: TOLERANCE OF CURRENT VARIETIES TO NEW HERBICIDES OR HERBICIDE MIXTURES**

**TRIAL NUMBER: 90M86**

OFFICERS: D. Bowran, N. Thomson	LOCATION: Merriden Research Stn.
CO-OPERATOR:	SEEDING RATE: 50kg/ha
CROP(S): Cereals (various)	DATE SOWN: 20/6/90
SOIL TYPE: Clay Loam	FERTILIZER: 100 kg/ha Agras Nol.
GROUND PREPARATION: Sprayed 1.0L/ha Glyphosate prior to seeding.	
EXPERIMENTAL DESIGN: Strip Plot	
PLOT SIZE: 3.0m x 7.0m	
HARVESTING SIZE: 1.6m x	

**SPRAYING DETAILS:**

SPRAYING DATE:	19/6/90	20/6/90	27/7/90	13/8/90	21/8/90	11/9/90
CROP STAGE:	IBS	IPP	Z12-13	Z14/21	Z15/21	Z32
NOZZLE TYPE:	110015LP	110015LP	110015LP	8002LP	110015LP	8001LP
VOLUME (L/ha):	60	60	60	82	64	50
PRESSURE (KPa):	150	150	150	150	175	180

**TEMPERATURES (°C)**

(a) wet/dry	-	-	10°C/13°C	10°C/11°C	-	12°C/17°C
(b) previous 24h						
(min/max)	4°C/15°C	6°C/18°C	1°C/13°C	7°C/16°C	5°C/17°C	0°C/14°C
(c) next 24hrs						
(min/max)	6°C/18°C	5°C/17°C	0°C/14°C	8°C/14°C	4°C/15°C	3°C/17°C

**RAINFALL (mm):**

(a) previous 24h	0.0	0.0	1.4	0.0	0.0
(b) next 24hrs	0.0	0.2	0.2	0.0	0.0

**TOTALS:**

MAY-7.0      JUNE-35.4      JULY-47.8      AUG-22.7      SEPT-26.6      OCT-26.3

**WEEDS:** Minor: Wild Oats, Ryegrass

**COMMENTS:**

Ryegrass and wild oats were present at higher density in this trial, and some yield increases were obtained with the Hoegrass treatments. All Hoegrass mixtures were generally equal in yield although effects on varieties were variable. Ally mixtures were safest with MCPA and least with Brodal and 2,4-D ester. Early timings of 2,4-D amine were more damaging than later timings, and this was rate dependent with 400ml/ha generally safer. Mortlock oats and Kulin wheat were most sensitive to 2,4-D amine at both timings.



Trial no. 90M86

		Timing	Kulin	Spear	Aroona	Eradu	Stirling	Mortlock
Control	Yield t/ha		1.19	1.07	1.04	1.07	1.50	0.88
Diuron + Logran	1.0 L + 30 g	IAS	96	132	142	94	93	71*
Hoe + Glean + Oil	1.0 L + 5 g	Z12-13	108	103	135	116	120	83
Hoe + Brodal + Oil	1.0 L + 50 mL	Z12-13	88	102	128	129	114	46*
Hoe + Buct + Brod	1.0 L + 1.0 L + 75 mL	Z12-13	112	119	138	100	100	47*
Ally + MCPA amine	5 g + 1.5 L	Z21	103	128	135	107	116	54*
Ally + Brodal	5 g + 100 mL	Z21	102	94	102	86	105	36*
Ally + MCPA amine	5 g + 1.5 L	Z30	113	124	120	89	105	66*
Ally + 2,4-D ester	5 g + 0.5 L	Z31	61*	92	79	48*	54*	28*
2,4-D amine	400 mL	Z12-13	102	100	103	87	92	66*
2,4-D amine	800 mL	Z12-13	73	82	84	73*	83*	59*
2,4-D amine	1.6 L	Z12-13	79	71*	66*	69*	66*	41*
2,4-D amine	400 mL	Z15	69	109	121	109	113	70*
2,4-D amine	800 mL	Z15	82	113	104	88	89	55*
2,4-D amine	1.6 L	Z15	77	104	91	105	116	32*

TRIAL TITLE: TOLERANCE OF CURRENT VARIETIES TO NEW HERBICIDES

TRIAL NUMBER: 90EC35

OFFICERS: D. Bowran, N. Thomson LOCATION: East Chapman Res. annex  
CO-OPERATOR: SEEDING RATE: 50kg/ha  
CROP(S): Wheat, barley, oats (various). DATE SOWN: 13/6/90  
SOIL TYPE: Eradu yellow sand FERTILIZER: 100kg/ha Agras No1  
GROUND PREPARATION: Glyphosate 3 weeks prior to seeding @ 1.0L/ha  
Glyphosate 2 days prior to seeding @ 1.0L/ha  
EXPERIMENTAL DESIGN: Strip Plot  
PLOT SIZE: 9.0m x 3.0m  
HARVESTING SIZE: 8.0m x 1.5m

**SPRAYING DETAILS:**

SPRAYING DATE:	13/6/90	18/7/90	7/8/90
CROP STAGE:	IBS/IAS	Z13	Z15
NOZZLE TYPE:	110015LP	110015LP	110015LP
VOLUME (L/Ha):	69	65	67
PRESSURE (KPa):	160	160	160

TEMPERATURES (°C)

(a) wet/dry	13°C/15°C	11°C/12°C	12°C/15°C
(b) previous 24h (min/max)	8°C/17°C	9°C/16°C	6°C/14°C
(c) next 24hrs (min/max)	14°C/18°C	9°C/17°C	6°C/16°C

## RAINFALL (mm) :

(a) previous 24h	0.0	0.6	0.8
(b) next 24hrs	11.4	0.2	0.2

**TOTALS :** (mm)

MAY 32.0      JUNE 50.4      JULY 56.4      AUG 43.0      SEPT 16.6      OCT 32.2

**WEEDS:** Minor: Brome grass

COMMENTS:

Of the herbicide treatments tested diuron + Tigrex at both timings caused severe yield loss on all varieties. Nearly all diuron treatments at 1.0L/ha caused yield loss when applied immediately after seeding (IAS). Tycor was least tolerated at the IAS timing while Lexone and Tycor were tolerated by some varieties at the Z13 timing. Blade and Reeves were most tolerant to metribuzin (Lexone, Sencor 480, Stomp Plus) and etiozin (Tycor). As metribuzin rates increased in Stomp Plus, Stomp Plus MKII and Avadex + Sencor 480, crop tolerance decreased. Spear remained the most sensitive variety to metribuzin. Hoegrass in mixtures with Glean, Brodal and Brominil + Brodal was generally well tolerated by all varieties except the oats.

Trial no. 90EC35

		Timing	Blade	Spear	Gutha	Kulin	Eradu	Reeves	Stirling	Yagan	Echidna	Wingjardie	Coorong
Control	Yield t/ha		1.27	1.50	1.62	1.20	1.28	1.43	1.36	2.00	1.35	1.45	1.52
Stomp Plus	1.0 L	IBS	87	85	92	105	95	103	94	93	76*	85*	102
Stomp Plus	2.0 L	IBS	88	59*	74*	82*	90	91	80*	80*	80*	70*	81*
Stomp Plus Mk2	1.0 L	IBS	96	89	90	98	95	96	92	85*	98	95	105
Stomp Plus Mk2	2.0 L	IBS	87	63*	81*	91	92	92	88	82*	82*	85*	88
Lexone	200 g	Z13	97	72*	80*	80*	89	93	92	88	70*	71*	79*
Tycor	2 kg	IAS	92	4*	78*	75*	68*	71*	62*	62*	9*	37*	89
Tycor	2 kg	Z13	110	72*	90	100	87	98	96	85*	64*	59*	99
Avadex + Sencor 480	1.0 L + 208 mL	IBS	103	75*	86*	89	94	104	89	83*	68*	84*	97
Avadex + Sencor 480	2.0 L + 417 mL	IBS	88	54*	83*	88	83*	83*	85*	81*	66*	74*	85*
Diuron + Logran	1.0 L + 30 grm	IAS	88	79*	71*	84*	78*	100	83*	64*	52*	72*	77*
Diuron + Dual	1.0 L + 1.0 L	IAS	79*	83	78*	89	79*	73*	79*	82*	88	93	77*
Diuron + Sencor 480	1.0 L + 208 mL	IAS	87	59*	64*	74*	66*	80*	73*	75*	65*	57*	65*
Diuron + Stomp + Brod	1.0 L + 1.0 L + 75 mL	IAS	83*	84	73*	70*	76*	93	86*	79*	74*	86*	75*
Hoe + Glean + Oil	1.0 L + 5 g	Z13	100	96	87*	96	97	99	98	88	47*	57*	92
Hoe + Brodal + Oil	1.0 L + 50 mL	Z13	100	96	90	96	93	93	101	93	36*	47*	86
Hoe + Buct + Brod + Oil	1.0 L + 1.0 L + 75 mL	Z13	96	104	98	103	109	102	94	94	41*	51*	92
Diuron + Tigrex	300 mL + 250 mL	Z13	80*	79*	72*	78*	84*	84*	84*	76*	75*	76*	75*
Diuron + Tigrex	300 mL + 250 mL	Z15	80*	79*	66*	74*	75	74*	78*	72*	97	88	75*

**TRIAL TITLE: TOLERANCE OF CEREAL VARIETIES TO NEW HERBICIDES OR  
HERBICIDE MIXTURES.**

**TRIAL NUMBER: 90N74**

OFFICERS: D.Bowran N.Thomson	LOCATION: Newdegate Research Stn.
CO-OPERATOR:	SEEDING RATE: 50kg/ha.
CROP(S): Wheat, Barley & Oats	DATE SOWN: 29/6/90
SOIL TYPE: Sandy Loam over clay.	FERTILIZER: 100kg/ha Agras Nol.
GROUND PREPARATION: Scarified, 1.0L Glyphosate pre seeding	
EXPERIMENTAL DESIGN: Strip Plot	
PLOT SIZE: 3.0m x 9.0m	
HARVESTING SIZE: 1.6m x 9.0m	

**SPRAYING DETAILS:**

SPRAYING DATE:	29/6/90	9/8/90	11/9/90	21/9/90	4/10/90
CROP STAGE:	IBS/IAS	Z13	Z14/21	Z31	Z40+
NOZZLE TYPE:	110015LP	8002LP	110015LP	8001LP	110015LP
VOLUME (L/Ha):	64	85	64	50	64
PRESSURE (KPa):	160	160	175	180	160

**TEMPERATURES (°C)**

(a) wet/dry	-	9°C/11°C	12°C/14°C	-	13°C/16°C
(b) previous 24h					
(min/max)	9°C/13°C	-2°C/13°C	1°C/16°C	-1°C/15°C	9°C/19°C
(c) next 24hrs					
(min/max)	2°C/13°C	4°C/14°C	5°C/15°C	3°C/20°C	9°C/16°C

**RAINFALL (mm) :**

(a) previous 24h	0.0	0.0	0.4	0.0	0.0
(b) next 24hrs	4.0	0.4	0.0	0.0	0.0

**TOTALS:**

MAY 36.8	JUNE 42.4	JULY 12.0	AUG 59.6	SEPT 20.4	OCT 15.6
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**WEEDS:** Major: Annual Ryegrass,  
Minor: Wild Radish.

**COMMENTS:**

A very large germination of annual rye-grass emerged at this site after seeding. Consequently tolerance comparisons are difficult due to the variable control exerted by many herbicides. Excellent rye-grass control was obtained with all Hoegrass mixtures and treatments. Hoegrass + Grasp mixtures were at least equal to Hoegrass in yield, while Grasp alone showed no crop damage at the rate and timing used. Hoegrass + Buctril + Brodal treatments were the highest yielding plots in most cases, even though phytotoxicity was present immediately after application. Diuron + Lexone, Stomp plus and Igran + diuron all gave acceptable rye-grass control but did cause some crop damage.

Trial no. 90N74

		Timing	Corrigin	Tincurrin	Kulin	Spear	Aroona	Currency	Stirling	Windich	Mortlock	Echidna
Control	Yield t/ha		0.90	1.00	0.72	0.62	0.80	0.77	0.88	1.04	1.05	1.34
Glean	20 g	Z14	100	110	128	132	124	120	113	119	112	104
Diuron + Lexone	1.0 L + 133 g	IPP	116	116	136	131	130	126	118	142	109	92
Stomp Plus	1.5 L	IBS	101	113	139	130	133	128	131	116	107	61*
Igran + Diuron	0.5 L + 1.0 L	IPP	120	133	139	158	138	139	128	133	130	108
Ally + Brodal	5 g + 150 mL	Z13	102	117	110	127	93	105	125	115	111	109
Hoe + Buct + Brod + wa	1.5 L + 2.0 L + 100 mL	Z13	119	129	160	195	160	158	147	124	55*	19*
Hoe + Brod + wa	1.5 L + 150 mL	Z13	115	124	160	163	146	141	135	130	94	51*
Hoe + Glean + oil	750 mL + 5 g	Z13	190	116	138	147	142	128	132	121	100	67
Hoegrass	1.5 L	Z13	111	109	145	166	146	143	141	115	98	55*
Grasp	1.5 L	Z14	91	105	118	129	125	123	120	106	53*	38*
Hoegrass + Grasp	1.0 L + 0.5 L	Z13	108	112	162	195	142	150	147	123	71*	26*
Hoegrass + Grasp	0.5 L + 1.0 L	Z13	84	123	155	168	152	127	140	137	38*	6*
Diuron + Tigrex	300 mL + 250 mL	Z13	92	118	112	112	112	113	105	111	101	95
Ally	5 g	Z41	82	100	98	105	109	118	133	116	101	69
MCPA LV ester	1.0 L	Z13	100	105	117	126	119	120	126	97	92	76
Igran + Lontrel	800 mL + 200 mL	Z13	107	105	121	120	94	102	112	103	108	101
Igran + Logran	800 mL + 20 g	Z13	108	112	110	131	119	117	130	117	105	94
2,4-D ester	500 mL	Z41	75*	96	87	112	114	112	113	97	100	75
Ally + 2,4-D ester	5 g + 400 mL	Z31	75*	96	92	103	115	107	97	91	84*	79

**TRIAL TITLE: TOLERANCE OF CEREAL VARIETIES TO METRIBUZIN AND ETHIOZIN.**

**TRIAL NUMBER: 90EC37**

OFFICERS: D. Bowran, N. Thomson. LOCATION: East Chapman Res. annex  
CO-OPERATOR: SEEDING RATE: 50kg/ha  
CROP(S):Wheat, barley, oats various. DATE SOWN: 13/6/90  
SOIL TYPE:Eradu yellow sand. FERTILIZER: Agras No1 100kgs/ha  
GROUND PREPARATION: Glyphosate 3 weeks prior to seeding @ 1.0L/ha  
Glyphosate 2 days prior to seeding @ 1.0L/ha  
EXPERIMENTAL DESIGN: Strip Plot.  
PLOT SIZE: 3.0m x 10.0m  
HARVESTING SIZE: 1.6m x 9.0m  
SEEDING RATE: 50kg/ha

**SPRAYING DETAILS:**

SPRAYING DATE: 12/6/90  
CROP STAGE: IBS  
NOZZLE TYPE: 110015LP  
VOLUME (L/Ha): 85  
PRESSURE (KPa): -

**TEMPERATURES (°C)**

(a) wet/dry 13°C/15°C  
(b) previous 24hrs  
(min/max) 10°C/18°C  
(c) next 24hrs  
(min/max) 10°C/18°C

**RAINFALL (mm):**

(a) previous 24hrs 0.2  
(b) next 24hrs 0.0

**TOTALS:**

MAY 32.2 JUNE 50.4 JULY 56.4 AUG 43.0 SEPT 16.6 OCT 32.2

**WEEDS:** Minor: Brome grass

**COMMENTS:**

Blade wheat showed the highest tolerance to metribuzin and Tycor, while Spear wheat showed the least tolerance. Tolerance of most varieties to metribuzin was acceptable up to 150g/ha(200g Lexone). The addition of lignin to Lexone failed to increase wheat safety to metribuzin. Wheat was more tolerant to Tycor at the double rate (2.0kg) than metribuzin at the double rate (400g). All cultivars showed adequate tolerance to Stomp Plus and Stomp, though Spear and Mortlock were lower yielding.

Trial no. 90EC37

		Timing	Blade	Gutha	Eradu	Reeves	Spear	Stirling	Yagan	Mortlock	Winjardie
Control	Yield t/ha		1.32	1.34	1.19	1.45	1.46	1.30	1.70	1.05	1.29
Lexone	133 g	IBS	93	104	100	91	96	102	101	89	96
Lexone	200 g	IBS	97	100	103	97	66*	88	97	88	81*
Lexone	400 g	IBS	83	70*	67*	78*	12*	80*	74*	65*	29*
Lexone + Lignin	133 g + 1 kg	IBS	96	95	104	92	99	99	100	85	83*
Lexone + Lignin	200 g + 1 kg	IBS	107	96	101	105	73*	105	105	90	88
Lexone + Lignin	400 g + 1 kg	IBS	83	66*	59*	53*	17*	70*	67*	54*	30*
Tycor	1.0 kg	IBS	100	98	101	89	61*	87	104	85	80*
Tycor	1.6 kg	IBS	93	100	94	95	25*	88	90	61*	54*
Tycor	2.0 kg	IBS	105	99	93	98	0*	88	94	69*	45*
Stomp Plus	1.0 L	IBS	98	100	97	104	89	96	97	86	96
Stomp	1.8 L	IBS	99	105	104	100	106	105	107	104	105

**TRIAL TITLE: LUPIN TOLERANCE TO HERBICIDES**

**TRIAL NUMBER: 90EC34**

OFFICERS: D. Bowran, N.Thomson  
CO-OPERATOR:  
CROP(S): Lupins (various)  
SOIL TYPE: Eradu yellow sand.

LOCATION: East Chapman Res. annex  
SEEDING RATE: 50kg/ha  
DATE SOWN:15/6/90  
FERTILIZER: 100kg superphosphate

GROUND PREPARATION: Sprayed 2.0L Glyphosate 3 days prior to seeding  
Also cultitrashed 1 day prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot.

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE:1.5m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	14/6/90	7/8/90
CROP STAGE:	IBS/IAS	Z13
NOZZLE TYPE:	110015LP	110015LP
VOLUME (L/Ha):	64	67
PRESSURE (KPa):	150	160

**TEMPERATURES (°C)**

(a) wet/dry	13°C/14°C	13°C/15°C
(b) previous 24hrs (min/max)	13°C/18°C	6°C/14°C
(c) next 24hrs (min/max)	10°C/16°C	8°C/15°C

**RAINFALL (mm):**

(a) previous 24hrs	11.4	0.2
(b) next 24hrs	1.8	0.0

**TOTALS:**

MAY 32.0    JUNE 50.4    JULY 56.4    AUG 43.0    SEPT 16.6    OCT 32.2

**WEEDS:** nil

**COMMENTS:**

Gungurru and 330 showed high tolerance to simazine and atrazine, while Danja, Yorrel and 430 were all reduced in yield even at low rates. Simazine top-up was well tolerated by all varieties. Yorrel was sensitive to all Brodal treatments, as was the Brodal sensitive line 435. In the case of Yorrel an increase in root rots was observed in all plots receiving Brodal. The simazine tolerant line 330 was more tolerant to Brodal in the presence of simazine than was Gungurru, which suggests the possibility of an interaction between simazine and Brodal. This is further supported by the treatment containing Assure + Brodal which received no simazine pretreatment as this was higher yielding than Assure + Brodal with simazine. Gungurru, 435 and 330 were the most tolerant to Lexone, while Danja and 430 were the most sensitive.



Trial no. 90EC34

			Timing	Gungurru	Danja	Yorrel	430	435	330
Control	Yield t/ha			0.708	0.600	0.456	0.550	0.655	0.544
Simazine	1.0 L	IBS		98	90	87	86	96	105
Simazine	1.5 L	IBS		99	89	81*	88	99	104
Simazine	2.0 L	IBS		93	90	79*	71*	90	95
Simazine	3.0 L	IBS		98	85*	73*	88	89	107
Simazine	4.0 L	IBS		98	87	71*	67*	86	103
Simazine	8.0 L	IBS		86*	62*	48*	71*	74*	90
Atrazine	2.0 L	IBS		97	90	80*	87	93	98
Atrazine	2.0 L	3 leaf		83*	65*	52*	46*	72*	86
Simazine + Topup	2.0 L + 1.0 L	IBS + 3 leaf		93	102	94	94	103	103
Simazine + Diuron	1.5 L + 1.5 L	IAS		89	83*	88	72*	97	108
Simazine	2.0 L	IBS		96	86*	77*	75*	97	101
<sup>a</sup> Lexone	300 g	3 leaf		77*	57*	73*	66*	83*	89
<sup>a</sup> Brodal	150 mL	3 leaf		90	87*	74*	85	83*	110
<sup>a</sup> Brodal	300 mL	3 leaf		82*	70*	76*	73*	72*	103
<sup>a</sup> Simazine + Brodal	1.0 L + 100 mL	3 leaf		91	91	77*	85	82*	102
<sup>a</sup> Verdict + Brodal	750 mL + 150 mL	3 leaf		88*	81*	76*	73*	75*	95
<sup>a</sup> Assure + Brodal	750 mL + 150 mL	3 leaf		87*	77*	76*	81*	67*	107
<sup>a</sup> Brodal + Oil	100 mL	3 leaf		94	78*	73*	86	79*	101
Assure + Brodal	750 mL + 200 mL	3 leaf		98	97	89	94	90	92

<sup>a</sup> Simazine @ 2.0 L/ha IBS.

**TRIAL TITLE: LUPIN TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90EB44**

OFFICERS: D. Bowran, N. Thomson. LOCATION: East Beverly Res. annex  
CO-OPERATOR: SEEDING RATE: 50kg/ha  
CROP(S): Lupins (various) DATE SOWN: 6/6/89  
SOIL TYPE: Sandy Loam FERTILIZER: 100kg/ha Superphosphate  
GROUND PREPARATION: 1.0L of Glyphosate 2 weeks prior and 1.0L of  
Glyphosate 4 days prior to seeding.  
EXPERIMENTAL DESIGN: Strip Plot.  
PLOT SIZE: 3.0m x 10.0m  
HARVESTING SIZE: 1.6m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	1/6/90	4/7/90
CROP STAGE:	IBS	3 leaf
NOZZLE TYPE:	80010LP	110015LP
VOLUME (L/ha):	45	65
PRESSURE (KPa):	160	180

**TEMPERATURES (°C)**

(a) wet/dry	13°C/20°C	11°C/15°C
(b) previous 24hrs (min/max)	3°C/17°C	1°C/17°C
(c) next 24hrs (min/max)	2°C/20°C	3°C/16°C

**RAINFALL (mm):**

(a) previous 24hrs	0.0	0.0
(b) next 24hrs	0.0	0.0

**TOTALS: (mm)**

MAY 65.9 JUNE 36.7 JULY 67.0 AUG 32.7 SEPT 18.6 OCT 27.0

**WEEDS:** Minor: Crassula, Toad rush

**COMMENTS:**

While this site was largely weed free, sufficient water weeds were present to produce a yield response. Gungurru was tolerant of all treatments except post-emergence atrazine. Danja and Yorrel appear to be less tolerant to Simazine and Brodal treatments when compared to Gungurru while 430 was intermediate in response. The response of Danja to Lexone was marked with almost total plant death, whereas Gungurru showed only minor leaf burning, while the other varieties showed some leaf loss but no plant death

Trial no. 90EB44

		Timing	Danja	Gungurru	Yorre1	430
Control	Yield t/ha		0.751	0.785	0.991	0.913
Simazine	1.0 L	IBS	121	127	123	131
Simazine	1.5 L	IBS	114	141	122	116
Simazine	2.0 L	IBS	105	110	106	110
Simazine	3.0 L	IBS	98	108	106	101
Simazine	4.0 L	IBS	99	109	98	103
Simazine	8.0 L	IBS	62*	112	79	89
Atrazine	2.0 L	IBS	95	116	103	93
Atrazine	2.0 L	8 leaf	34*	42*	17*	28*
Simazine Topup	2.0 L + 1.0 L	IBS + 3 leaf 10	121	129	97	106
Simazine + Diuron	1.5 L + 1.5 L	IAS	106	117	96	90
Simazine + Devrinol	2.0 L + 1.0 kg	IBS	113	121	96	107
Lexone	300 g	3 leaf	29*	102	80	88
Brodal	150 mL	3 leaf	89	118	99	101
Brodal	300 mL	3 leaf	92	117	96	99
Simazine + Brodal	1.0 L + 100 mL	3 leaf	99	124	104	107
Verdict + Brodal	750 mL + 150 mL	3 leaf	112	116	103	101
Sertin + Brodal	500 mL + 150 mL	3 leaf	81	127	95	106
Pantera + Oil	1.0 L	3 leaf	113	112	88	112
Pantera + Oil	2.0 L	3 leaf	103	122	104	118

**TRIAL TITLE: PEA AND OTHER GRAIN LEGUME TOLERANCE TO  
HERBICIDES.**

**TRIAL NUMBER: 90KA131**

OFFICERS: D. Bowran, N. Thomson. LOCATION: Gt. Southern Res. Ins.  
CO-OPERATOR: SEEDING RATE: 50kg/ha  
CROP(S): Peas DATE SOWN: 28/6/90  
SOIL TYPE: Sandy gravel over rock. FERTILIZER: 100kg/ha superphosphate  
GROUND PREPARATION:  
EXPERIMENTAL DESIGN: Strip Plot  
PLOT SIZE: 3.0m x 10.0m  
HARVESTING SIZE: 1.42m x 9.0m

**SPRAYING DETAILS:**

SPRAYING DATE:	27/6/90	28/6/90	14/8/90
CROP STAGE:	IBS	IAS	4-5leaf
NOZZLE TYPE:	110015LP	110015LP	8001LP
VOLUME (L/Ha):	64	64	48
PRESSURE (KPa):	160	160	200

**TEMPERATURES (°C)**

(a) wet/dry	10°C/14°C	11°C/15°C	10°C/13°C
(b) previous 24hrs (min/max)	-	-	-
(c) next 24hrs (min/max)	-	-	-

**RAINFALL (mm):**

(a) previous 24hrs	0.0	0.0	0.5
(b) next 24hrs	0.0	0.0	0.0

**TOTALS:**

MAY-30.0 JUNE-28.0 JULY-92.0 AUG-36.0 SEPT-39.0 OCT-27.5

**WEEDS:** Minor: Brome grass

**COMMENTS:**

While yield results indicate that Wirrega and Dundale showed few significant yield reductions, diuron on Dundale and MCPA on both varieties did cause severe crop effects up to 6 weeks after application. Pursuit at the 3 leaf stage caused a complete yellowing of the crop for 2-3 weeks after application. Diuron + Pursuit was the safest overall treatment on the field peas. The SSF fresh pod weight is a more reliable indicator of tolerance as substantial pod shattering occurred before harvest. Only Pursuit at the 3 leaf timing gave a large yield decrease, although the double rate of diuron + Treflan and diuron + Pursuit also decreased yield.

Trial no. 90KA131

		Timing	Wirrega	Dundale	SSF dry	SSF fresh pod (Nov. 1 1990)
Control	Yield t/ha		0.84	0.75	0.03	4.50
Bladex	2.0 L	IBS	88	108	148	119
Bladex	4.0 L	IBS	89	102	158	101
Diuron + Treflan	2.0 L + 1.0 L	IBS	107	80	162	145
Diuron + Treflan	4.0 L + 2.0 L	IAS	89	70*	118	85
Pursuit	200 mL	IAS	105	120	145	140
Pursuit	300 mL	IAS	94	97	113	102
Pursuit	600 mL	IAS	99	104	145	98
Diuron + Pursuit	1.0 L + 200 mL	IAS	115	119	137	88
Pursuit (split)	100 mL + 100 mL	IAS + 3 lf	116	103	118	134
Lexone	200 g	IAS	101	89	125	112
Lexone + Pursuit	200 g + 200 mL	IAS	96	102	134	104
Pursuit + Stomp	200 mL + 1.0 L	IAS	89	94	139	111
<sup>a</sup> Brodal	150 mL	3 leaf	121	105	171	117
<sup>a</sup> Verdict + Brodal	750 mL + 150 mL	3 leaf	96	110	164	122
<sup>a</sup> Bladex + Brodal	1.0 L + 150 mL	3 leaf	117	98	170	133
<sup>a</sup> Pursuit	200 mL	3 leaf	92	114	143	82
<sup>a</sup> MCPA amine	0.7 L	3 leaf	80	88	133	95
<sup>a</sup> Pantera + Oil	1.0 L	3 leaf	102	98	152	139
<sup>a</sup> Pantera + Oil	2.0 L	3 leaf	96	106	149	159

<sup>a</sup> Bladex @ 2.0 L/ha IBS.

TRIAL TITLE: Pea tolerance to herbicides-soil residue analysis in following year

TRIAL NOS: 89KA64

COMMENTS:

This trial site was seeded to oats in 1990 and the effect of any herbicide residues from 1989 evaluated. Significant reductions in dry weight of oats were found with all Pursuit treatments at the first harvest, but by the second harvest the low rate of Pursuit applied after seeding had not decreased herbage yield. In contrast Pursuit applied at the 3 leaf stage or at 500ml/ha or greater after seeding was still reducing yield. Grain yield was reduced significantly only by 1.0 L applied after seeding, though 500 ml/ha applied after seeding was still low.

This trial shows that while early carryover effects are possible when the recommended rate is used (250 ml/ha) these are not likely to carry through to yield.

Trial no. 89KA64

		Timing	DW1	DW2	Grain weight
Control	Yield t/ha		4.54	3.92	1.41
Bladex	2.0 L	IBS	114	124	97
Bladex	4.0 L	IBS	100	120	101
Diuron + Triflu	2.0 L + 1.0 L	IBS	96	96	110
Pursuit	250 mL	IAS	81	98	116
Pursuit	500 mL	IAS	68*	89	85
Pursuit	1.0 L	IAS	28*	55*	52*
Pursuit + wa	500 mL	3 leaf	78*	71	103
Pursuit + wa + Boost	500 mL	3 leaf	63*	71	108
Bladex + Pursuit	500 mL + 250 mL	3 leaf	61*	74	107
Bladex + MCPA	500 mL + 300 mL	3 leaf	82	120	107
Bladex + Brodal	500 mL + 50 mL	3 leaf	92	115	108
Bladex + Sertin + Oil	50 mL + 1.0 L + 1%	3 leaf	92	110	92
Pursuit + Diuron	250 mL + 1.0 L	IAS	77*	97	106

DW Dry weight of herbage cuts September 6, 1990.

DW<sup>2</sup> Dry weight of herbage cuts November 1, 1990.

**TRIAL TITLE: PASTURE LEGUME TOLERANCE TO HERBICIDES.**

**TRIAL NUMBER: 90KA132**

OFFICERS: D. Bowran, N. Thomson. LOCATION: Gt. Southern Res. Ins.  
CO-OPERATOR: SEEDING RATE: 25kg/ha  
CROP(S): Pasture Legumes DATE SOWN: 27th June 1990  
SOIL TYPE: Sandy Gravel over rock FERTILIZER: 100kg super/ha  
GROUND PREPARATION: Sprayed Glyphosate @ 1.0L/ha before seeding.  
Cultivated preseeding  
EXPERIMENTAL DESIGN: Strip Plot.  
PLOT SIZE: 3.0m x 3.0m  
HARVESTING SIZE: 1m<sup>2</sup>

**SPRAYING DETAILS:**

SPRAYING DATE: 31/8/90  
CROP STAGE: 4-10leaf depending on variety  
NOZZLE TYPE: 110015LP  
VOLUME (L/Ha): 63  
PRESSURE (KPa): 160

**TEMPERATURES (°C)**

(a) wet/dry 11.5°C/16.0°C  
(b) previous 24hrs  
(min/max) -  
(c) next 24hrs  
(min/max) -

**RAINFALL (mm):**

(a) previous 24hrs 0.0  
(b) next 24hrs 0.0

**TOTALS:**

MAY-30.0 JUNE-28.0 JULY-92.0 AUG-36.0 SEPT-39.0 OCT-27.5

**WEEDS:** Grass species sprayed with Assure 0.75L/ha postemergent.  
Some capeweed also present.

**COMMENTS:**

While ratings were taken on all varieties, grain yield were obtained only on the medics. The late planting and dry conditions in June and early July resulted in late emergence and poor seed set in the sub-clover. While Trifolamine (2,4-DB) and Pursuit were least damaging herbicides at the first rating, Trifolamine became more damaging with time on the sub-clover. This was most noticeable with Dalkeith which appears to be more sensitive to 2,4-DB. Santiago medic also shows a slower recovery to herbicides than did Circle Valley while Parabinga had the best recovery. All diflufenican based herbicides (Brodal, Tigrex, Exp 30088A), caused yellowing or leaf burning, but recovery was generally good. All the medics were slightly more sensitive to bromoxynil products (EXP30088A), Brominil) than sub-clover. Simazine was generally safe though some plant death was observed in Santiago. Seed Yields on the medics were variable due to the interaction with capeweed control, but it would appear that Santiago is the least tolerant variety of those tested to most herbicides, that Circle Valley shows good tolerance (except to perhaps Exp30088A), that Parabinga is tolerant to most herbicides, while Zodiac has reasonable tolerance to the lower rates of 2,4-DB alone, Brodal and Brominil.



Trial no. 90KA132

		Timing	Zodiac	Circle Valley	Parabinga	Santiago
Control	Yield t/ha		0.16	0.56	0.56	0.95
Trifolamine	1.5 L	3-5 leaf	135	95	94	79
Trifolamine	3.0 L	3-5 leaf	167	131	140	67
Trifolamine	4.5 L	3-5 leaf	57	111	110	66
Brodal	200 mL	3-5 leaf	167	135	165	96
Brodal	400 mL	3-5 leaf	126	123	122	81
Tigrex	250 mL	3-5 leaf	84	105	87	63
Tigrex	500 mL	3-5 leaf	68	108	92	63
Exp 30088A	500 mL	3-5 leaf	31	72	88	61*
Exp 30088A	1.0 L	3-5 leaf	92	64	92	34*
Diuron + Pursuit	300 mL + 100 mL	3-5 leaf	78	117	88	49*
Simazine	1.5 L	3-5 leaf	91	102	96	77
Pursuit	100 mL	3-5 leaf	54	123	117	73
Pursuit	150 mL	3-5 leaf	73	109	128	84
Pursuit	300 mL	3-5 leaf	97	113	157	118
Diuron + 2,4-D	200 mL + 400 mL	3-5 leaf	45	78*	44	50*
Diuron + 2,4-D	400 mL + 800 mL	3-5 leaf	82	110	109	72
Tribunal + 2,4-DB	400 g + 400 mL	3-5 leaf	89	111	93	98
Tribunal + 2,4-DB	800 g + 800 mL	3-5 leaf	149	87	98	42*
Brominil	1.5 L	3-5 leaf	106	84	100	41*

Pasture legumes ratings, 20th September 1990 :

Trial No. 90KA132 :

Ratings are on scale of 0-8 where 0 = no damage and 8 = total kill

Y denotes yellowing

\* denotes new leaves appear unaffected

B denotes burning

LC denotes leaf cupping.

PD denotes plant death

S denotes stunting.(smaller plants but no obvious burning or yellowing)

		Dalkeith	Trikkala	Seaton Park	June	Zodiac	Parabinga	Circle Valley	Santiago
Control		0	0	0	0	0	0	0	0
32 Trifolamine	1.5L	0.9	0.2	0.2	1.2Y	0.6S	0.8S	1.0	0.4Y
Trifolamine	3.0L	0.6	0.6	0.3	0.0	0.3	0.6	1.6Y	1.3S
Trifolamine	4.5L	0.4	0.6	0.2	0.6	0.4	1.0	1.0S	2.3S
Brodal	200ml	0.7Y	1.5Y	2.2Y	1.2Y	0.2	1.9Y	0.9Y	0.9Y
Brodal	400ml	1.7Y	3.5Y	3.4Y	1.3Y	1.0Y	3.2Y	2.1Y	2.4Y
Tigrex	250ml	1.7Y	2.2Y	2.4Y	1.9Y	2.9Y	3.9Y	2.9Y	1.9Y
Tigrex	500ml	2.9Y	2.7Y	3.4Y	3.5Y	3.9Y	5.4Y	3.9Y	3.9Y
Exp30088A	500ml	3.7Y	3.5Y	4.9Y	4.2Y	4.4B	4.9B	5.1B	5.3B
Exp30088A	1.0L	4.1Y	4.0Y	3.9Y	4.0Y	5.6B	5.9B	6.2B	5.9B
Diuron+Pursuit	300ml+100ml	3.4Y	2.7B	3.7B	3.2B	3.4B	4.2B	2.9B	3.2B
Simazine	1.5L	0.7Y	0.7Y	1.1B	0.8Y	0.9Y	1.7B	0.6	0.7
Pursuit	100ml	0.2	0.0	0.7Y	0.2	0.2	1.4	0.2	0.0
Pursuit	150ml	0.0	0.4Y	0.7Y	0.2	0.4	1.2	1.2Y	0.0
Pursuit	300ml	0.5	0.7Y	0.7Y	0.7Y	0.3	1.0	1.1Y	0.7
Diuron+24D	200ml+400ml	2.4B	2.2B	2.9B	2.2B	1.9B	7.2B	3.4B	2.6B
Diuron+24D	400ml+800ml	2.4B	2.2B	2.9B	2.7B	1.4B	4.0B	1.6B	2.2B
Tribunal+24DB	400g+400ml	2.9B	2.5B	3.2B	3.0B	3.9B	4.4B	3.1B	4.4B
Tribunal+24DB	800g+800ml	3.4B	2.7B	2.9B	3.2B	4.9B	4.4B	4.6B	5.4B
Brominil	1.5L	2.6B	2.0B	1.9B	2.2B	5.4B	4.2B	4.6B	5.9B
LSD		1.1	1.0	1.1	1.1	1.3	1.7	1.5	1.8

Pasture legumes ratings, 12th October 1990 :

Trial No.: 90KA132

Ratings are on scale of 0-8 where 0 = no damage and 8 = total kill

Y denotes yellowing

\* denotes new leaves appear unaffected

B denotes burning

LC denotes leaf cupping.

PD denotes plant death

S denotes stunting.(smaller plants but no obvious burning or yellowing)

		Dalkeith	Trikkala	Seaton Park	June	Zodiac	Parabinga	Circle Valley	Santiago	Madiera
Control		0	0	0	0	0	0	0	0	0
Trifolamine	1.5L	3.6LC	2.2	1.5LC	1.8	1.5	0.4	1.7LC	2.1	0.9
Trifolamine	3.0L	3.3LC	2.5LC	2.7LC	2.6LC	2.5	0.8	1.8	3.6	1.7
Trifolamine	4.5L	3.0	2.6	1.9LC	1.3LC	2.1	1.3	1.0	3.2	2.8
Brodal	200ml	3.2Y	1.6	2.0Y	1.1Y	0.4	0	0	1.4	2.6
Brodal	400ml	3.2Y	2.3Y	2.5Y	1.6Y	0.8	1.3Y	0.2Y	2.5Y	4.2
Tigrex	250ml	1.9	1.0	1.1Y	1.3Y	1.8	0.5	1.1	2.3	1.2
Tigrex	500ml	1.1LC	1.5	1.0	1.5Y	3.8	1.4	0.3	2.4	2.5
Exp30088A	500ml	2.7	0.2	0.8	0.7	2.4	1.1	1.8	2.8	3.1
Exp30088A	1.0L	2.0	2.4	1.6Y	2.9	2.0	2.4	3.7	4.6PD	3.6
Diuron+Pursuit	300ml+100ml	3.9	1.9	1.4	2.5	0.8	0.9	0	2.7	1.6
Simazine	1.5L	0.7	1.0	0.1B	1.9	1.9B	0	0.3B	1.7BPD	1.7
Pursuit	100ml	1.5	1.2	1.5	0.8	2.1	0.8	0.1	1.8	1.1
Pursuit	150ml	1.2	1.2	0.8	0.9	1.8	0.7	1.0	3.0	0.7
Pursuit	300ml	0.2	1.9	1.1	0.7	1.9S	0	0.8	1.7	0.9
Diuron+24DB	200ml+400ml	3.3	1.5	0.9	1.9	0.9	3.6	1.6	2.7	2.6
Diuron+24DB	400ml+800ml	3.7	2.8	1.3	2.1	0	0.6	0	1.6	0.7
Tribunal+24DB	400g+400ml	4.0	2.6	1.8	1.0	0	1.2	0.5	2.7	1.5
Tribunal+24DB	800g+800ml	3.7	3.6	1.6	2.0	0.7	1.1	1.6	2.6	2.5
Brominil	1.5L	1.6	2.4	1.1	0.7	2.7	0.7	1.6	3.7PD	0.5
LSD		1.8	1.5	1.4	1.6	1.7	1.7	1.7	1.7	1.7