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Lupin variety tolerance to herbicides

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Trial title: Lupin variety tolerance to herbicides
Trial number: 88EC31
Officers: D. Bowran, R. Watson
Co-operator: Location: E.C.R.S.
Crop(s): Lupins Date sown: 8/6/88
Fertilizer: 100 kg/ha super-phosphate

Soil type: Eradu yellow sand
Ground preparation: Sprayseed prior to seeding
Experiment design: Split plot Seeding rate: 100 kg/ha
Plot size: 2 m x 10 m
Harvesting: 1.4 m x 8.5 m
Spraying details:
Spraying date: 8/6/88 8/7/88
Crop stage: IBS
Nozzle type: 80015ZP 110015LP
Volume (L/ha): 55.5 59.5
Pressure (Kpa): 200 -
Temperatures (°C):

(a) wet/dry 15/17 16/20
 (b) previous 24 h
 (min/max) 12.0 to 19.5 9.0°-17.0°
 (c) next 24 h
 (min/max) 12.5 to 20.5 4.5-16.5°

Rainfall (mm):

(a) previous 24 h 3 10 mm
 (b) next 24 h 3 0 mm

May -	June -	July -	Aug -	Sept -	Oct -
138.6	72.4	121.6	68.4	23.0	10.4

Weeds: Nil.

(i) Trial No. 88EC31

Treatment	Rate (/ha)	Timing	75A/260	Gungurru	CE2/435	75A/259	Illyarrie	Danja
Yield of Simazine 1.5 L	(t/ha)		0.91	0.49	1.14	1.11	0.78	1.03
Simazine	1.5 L	IBS	100	100	100	100	100	100
Simazine	3.0 L	IBS	93	125	95	96	87	84
Simazine	4.5 L	IBS	100	106	86	70**	68*	50**
Simazine	6.0 L	IBS	66**	81	53**	50**	46**	45**
Simazine	1.5 L +	IBS +						
top up	0.75 L	3 leaf	54**	88	72**	59**	65**	39**
Brodal	100 mL	3 leaf	85	98	74**	83	73	67**
Brodal	150 mL	3 leaf	89	98	94	86	79	58**
Brodal	200 mL	3 leaf	84	86	96	106	91	96
Brodal	400 mL	3 leaf	74*	112	70**	77*	608*	58**
SN106664	125 mL	3 leaf	98	143	125	97	110	85
Simazine +	500 mL +							
Brodal	50 mL	3 leaf	74*	96	91	89	87	67**
Simazine +	1.0 L +							
Brodal	100 mL	3 leaf	79*	102	82	77*	83	73*
Brodal +	150 mL +							
Sertin	500 mL (+							
	2 L oil)	3 leaf	84	112	77*	95	97	72**
Brodal +	300 mL +							
Sertin	1.0 L (+							
	2 L oil)	3 leaf	78*	112	62**	77*	78	67**
Brodal +	150 mL +							
Fusilade	250 mL	3 leaf	73**	92	89	89	88	81
Brodal +	300 mL +							
Fusilade	500 mL	3 leaf	93	134	89	102	96	95
Brodal +	50 mL +							
Diuron	500 mL	3 leaf	70*	86	102	76*	94	77*
Brodal +	100 mL +							
Diuron	1.0 L	3 leaf	43**	96	58**	41**	64**	47**
Brodal +	150 mL +							
synthetic	10 g							
pyrethriod		3 leaf	98	124	104	119	117	102

Comments

This site received a basal treatment of 1.5 L of simazine/ha prior to seeding. Due to a heavy stubble load lupin seed was dropped onto the surface and lightly incorporated. The yield of Gungurru was uniformly low across this site. This is unlikely to be due to simazine toxicity as previous trials have shown Gungurru to be the most tolerant lupin variety to simazine. This site was affected by cucumber mosaic virus and this may have affected the Gungurru yields. Crop density did not appear to be any different between Gungurru and other varieties.

High rates of Simazine were better tolerated by Gungurru 75A/260 and CE2/435. The highest rate of Brodal reduced yields in all varieties except Gungurru. Combinations of Brodal with other herbicides appeared to reduce yields most with Danja and least with Gungurru and Illyarrie. Brodal + Fusilade + wetting agent was better tolerated than Brodal + Sertin + Oil by all varieties. Simazine 'top-up' at the three leaf stage caused large yield reductions compared to simazine applied at seeding.

Trial title: Lupin variety tolerance to herbicides
Trial number: 88EB27
Officers: D. Bowran, R. Watson
Co-operator: Location: East Beverley R.S.
Crop(s): Lupins Date sown: 8/6/88
Soil type: Sandy loam over clay Fertilizer: 100 kg/ha
superphosphate
Ground preparation:
Experiment design: Seeding rate: 100 kg/ha
Plot size: 2 m x 10 m
Harvesting: 1.4 x 8.5 m
Spraying details:
Spraying date: 26/5/88 16/6/88 22/6/88
Crop stage: IBS Z13-14
Nozzle type: 110015B/80015LP 80015LP 110015LP
Volume (L/ha): 428/550 570 525
Pressure (Kpa): 200/190 190 160
Temperatures (°C):
(a) wet/dry ?/ ? 16/17 15.5/21.5
(b) previous 24 h
(min/max)
(c) next 24 h
(min/max)
Rainfall (mm): 1.8 mm 2.4 mm nil
(a) previous 24 h nil 7.0 mm nil
(b) next 24 h nil 8.5 mm nil
May - June - July - Aug - Sept - Oct -
46.0 103.3 71.9 52.1 41.4 16.2

Weeds: Nil.

(ii) Trial No. 88EB27

Treatment	Rate (/ha)	Timing	75A/260	Gungurru	CE2/435	75A/259	Illyarrie	Danja
Yield of Simazine 1.5 L	(t/ha)		1.71	1.67	2.19	1.59	1.18	1.44
Simazine	1.5 L	IBS	100	100	100	100	100	100
Simazine	3.0 L	IBS	111	109	95	98	104	100
Simazine	4.5 L	IBS	100	85**	89	92	77*	74**
Simazine	6.0 L	IBS	87	76**	76**	92	98	92
Simazine	1.5 L +	IBS +						
top up	0.75 L	3 leaf	104	91	96	92	89	85
Brodal	100 mL	3 leaf	104	92	80*	108	92	118
Brodal	150 mL	3 leaf	110	107	113	113	115	125
Brodal	200 mL	3 leaf	99	83**	70**	92	78*	90
Brodal	400 mL	3 leaf	110	100	97	109	96	105
SN106664	125 mL	3 leaf	87	72**	86	91	74*	90
Simazine +	500 mL +							
Brodal	50 mL	3 leaf	107	92	92	93	85	85
Simazine +	1.0 L +							
Brodal	100 mL	3 leaf	102	93	79*	96	88	101
Brodal +	150 mL +							
Sertin	500 mL (+							
	2 L oil)	3 leaf	848	89	73**	73**	63**	88
Brodal +	300 mL +							
Sertin	1.0 L (+							
	2 L oil)	3 leaf	84*	83**	65**	87	67**	79*
Brodal +	150 mL +							
Fusilade	250 mL	3 leaf	102	97	94	106	91	106
Brodal +	300 mL +							
Fusilade	500 mL	3 leaf	96	89*	59**	89	69**	94
Brodal +	50 mL +							
Diuron	500 mL	3 leaf	85	89	79*	101	95	83
Brodal +	100 mL +							
Diuron	1.0 L	3 leaf	94	93	79*	106	96	96
Rogor +	200 mL +							
Brodal	150 mL	3 leaf	109	111	104	119	111	118

Comments

This site was very severely infested with aphids and bean mosaic virus such that the varieties Illyarrie and Danja had up to 60% plant death by anthesis. Other varieties were affected but to a lesser extent. Consequently many of the results may be attributed more to the variation in viral caused death than herbicide effects. No conclusions should be drawn from the results without considering the effects of the bean mosaic virus. The Brodal + Sertin + Oil treatments and to a lesser extent Brodal + diuron treatments severely affected plant density and appeared more prone to virus death. Other treatments had dead plants distributed more or less at random within plots, but could still show wide variation between replicates.

Trial title: Pea variety tolerance to herbicides
Trial number: 88ME118
Officers: D. Bowran
Co-operator: Location: Merredin R.S.
Crop(s): Field pea Date sown:
Fertilizer: 100 kg/ha
superphosphate
Soil type: Red loam
Ground preparation: Sprayseed prior to seeding
Experiment design: Split plot Seeding rate: 100 kg/ha
Plot size: 2 m x 10 m
Harvesting: 1.4 x 8.5 m
Spraying details:
Spraying date: 25/5/88 30/6/88
Crop stage: IBS, IAS 3-4 mode
Nozzle type: 11015VB
Volume (L/ha): 47
Pressure (Kpa): 240
Temperatures (°C):

(a) wet/dry 12.5/17
(b) previous 24 h
(min/max)
(c) next 24 h
(min/max)

Rainfall (mm):
(a) previous 24 h nil nil
(b) next 24 h nil nil

May - June - July - Aug - Sept - Oct -

Weeds: Wild oat, medic, cotula.