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## Radish control in lupins - brodal.

D J. Gilbey

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# RADISH CONTROL IN LUPINS - BRODAL

TRIAL NUMBER: 87GE84/3965 EX

CO-OPERATOR: MAY & BAKER RURAL

LOCATION: P. SMART, NARALING

OFFICERS: GILBEY, RALPH, NELSON

OBJECTIVE: To study the effect of Brodal on lupins and radish

TRIAL DESIGN: Field trial with a randomised complete block design and three replications

PLOT SIZE: Sprayed - 5 m x 20 m  
Harvested - 1.5 m x 21 m

CROP VARIETY: Illyarrie

SEEDING: 20.5.87 at 100 kg/ha with 150 kg/ha Super Cu, Zn, Mo  
50 kg/ha Potash

SITE PREPARATION: Basal spray of Sprayseed 200 at 3 L/ha on 19.5.87 and 3.6.87. Radish was thick and no lupins had emerged by 3.6.87

SITE DESCRIPTION: Yellow loamy sand

SPRAYING DETAILS: 19.5.87 Treatments 2-14 were sprayed IBS  
3.6.87 Treatments 2-4 were sprayed PE  
No germination  
24.6.87 Treatments 5-7 and 13, 14 were sprayed PE  
Lupins 2 leaf, radish cotyledon - 2 leaf  
doublegee cotyledon - 2 leaf, brome Z13.5  
9.7.87 Treatments 8-10 were sprayed PE  
Lupins 4-6 leaf, radish 2-6 leaf, doublegee  
2 leaf, brome grass Z13.5 - Z13.5/22

## HERBICIDE APPLICATION RECORD:

Spraying Date	19.5.87	3.6.87	24.6.87	9.7.87
Time	4:30pm-6:15pm	12.30pm-1:00pm	11:15am-11:55am	2:30pm-2:50pm
Nozzle Type	8001LP	8002LP (45 deg)	8001LP	8001LP
Pressure	180 KPA	165 KPA	150 KPA	150 KPA
Volume	45 L/ha	84 L/ha	45 L/ha	45 L/ha
Wind speed	12 KPH	12 KPH	0 KPH	5 KPH
Wind direction	S-SW	E-NE	-	SE
Cloud cover	0	9	3	3
Temp Dry bulb	17.5	17	22	18
Wet bulb	12.5	14.5	17	12.5
Soil moisture				
Surface	Dry	Dry	Moist	Dry
Sub-surface	Moist	Moist	Wet	Moist

ASSESSMENTS:            Visual rating    18.8.87 & 21.10.87  
                         Plant counts    11.8.87 - 6 x 1 m<sup>2</sup> quadrats  
                         Harvest            18.11.88

RATING SCALE (WEEDS):    0 = no effect  
                             1 =    0 -    25% control  
                             2 =    25 -    50% control  
                             3 =    50 -    75% control  
                             4 =    75 -    98% control  
                             5 =    98 - 100% control  
                             6 = 100% control

RATING SCALE (LUPINS):   0 = no effect  
                             1 = slight effect  
                             2 = moderate effect  
                             3 = severe effect

WEEDS PRESENT IN CROP:   Radish, doublegee, capeweed and brome grass

IBS = Immediately before seeding  
PE   = Post-emergence

Figures in tables followed by the same letter do not differ significantly  
(P = 0.05) using Duncans Multiple Range Test.

Table 1. The effect of Brodal on weeds

Treatment/ha	Visual ratings		Est. radish	Plants/m <sup>2</sup>		
	18.8.87	21.10.87		Cot. radish	Double gee	Cape weed
1. Nil	000	000	181 a	3	8	14
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2 weeks - Radish no germination	221	110	46 bc	3	1	0
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2 weeks - Radish no germination	332	213	30 cd	2	1	0
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2 weeks - Radish no germination	333	121	28 cd	1	1	0
5. Simazine 1½ L IBS + Brodal 100 mls PE - 5 weeks - Radish cot/2 leaf/5 cm diam	323	313	14 d	3	1	0
6. Simazine 1½ L IBS Brodal 150 mls PE - 5 weeks - Radish cot/2 leaf/5 cm diam	445	135	10 d	2	0	1
7. Simazine 1½ L IBS + Brodal 200 mls PE - 5 weeks - Radish cot/2 leaf/5 cm diam	444	634	3 d	1	2	0
8. Simazine 1½ L IBS + Brodal 100 mls PE - 7 weeks - Radish 2/6 leaf/9 cm diam	332	222	23 cd	2	1	0
9. Simazine 1½ L IBS + Brodal 150 mls PE - 7 weeks - Radish 2/6 leaf/9 cm diam	323	323	21 cd	0	1	0
10. Simazine 1½ L IBS + Brodal 200 mls PE - 7 weeks - Radish 2/6 leaf/9 cm diam	444	333	9 d	1	1	0
11. Simazine 1½ L IBS	211	002	69 b	3	0	0
12. Gesatop A 1½ L IBS	122	112	43 c	5	0	0

Table 1 continued ...

Treatment/ha	Visual ratings		Est. radish	Plants/m <sup>2</sup>		
	18.8.87	21.10.87		Cot. radish	Double gee	Cape weed
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 5 weeks	535	335	4 d	1	0	0
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 5 weeks	555	666	3 d	3	0	0
				NS	NS	NS

Table 2. The effect of Brodal on lupins

Treatment/ha	Visual rating		Lupins/m <sup>2</sup>	Grain yield kg/ha	% Radish contamination
	18.8.87	21.10.87			
1. Nil	000		33	316 e	39.1 a
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2 weeks - lupins no germination	000		37	751 cd	22.9 b
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2 weeks - Lupins no germination	000		37	853 bc	14.3 bcd
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2 weeks - Lupins no germination	000	No	38	931 abc	12.7 bcd
5. Simazine 1½ L IBS + Brodal 100 mls PE - 5 weeks - Lupins cot/2 leaf/5 cm diam	000	Damage	36	853 bc	14.0 bcd
6. Simazine 1½ L IBS Brodal 150 mls PE - 5 weeks - Lupins cot/2 leaf/5 cm diam	000	Detected	40	918 abc	5.7 cd
7. Simazine 1½ L IBS + Brodal 200 mls PE - 5 weeks - Lupins cot/2 leaf/5 cm diam	000		38	1108 a	2.4 d
8. Simazine 1½ L IBS + Brodal 100 mls PE - 7 weeks - Lupins 4/8 leaf/9 cm diam	000		39	825 bc	14.4 bcd
9. Simazine 1½ L IBS + Brodal 150 mls PE - 7 weeks - Lupins 4/8 leaf/9 cm diam	000		36	888 bc	13.4 bcd
10. Simazine 1½ L IBS + Brodal 200 mls PE - 7 weeks - Lupins 4/8 leaf/9 cm diam	000		35	957 abc	7.4 cd
11. Simazine 1½ L IBS	000		37	574 d	26.0 b
12. Gesatop A 1½ L IBS	000		36	798 c	17.7 bc

Table 2 continued ...

Treatment/ha	Visual rating		Lupins/m <sup>2</sup>	Grain yield kg/ha	% Radish contamination
	18.8.87	21.10.87			
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 5 weeks	010		37	965 abc	2.5 d
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 5 weeks	110		37	1023 ab	0.2 d
			NS		

## COMMENTS:

This site was extremely heavily infested with radish. The best radish control and highest grain yields were achieved with Brodal applied five weeks after seeding when radish had up to 2 leaves and was up to 5 cm in diameter.

200 mls Brodal/ha following Simazine applied before seeding was required. The formulated Brodal/Simazine mixture also controlled the radish well and resulted in high grain yields.

Although Gesatop was better than Simazine when applied before seeding, neither was satisfactory.

# RADISH CONTROL IN LUPINS - BRODAL

TRIAL NUMBER: 87TS35/3965 EX

CO-OPERATOR: MAY & BAKER RURAL

LOCATION: E. GOOCH, THREE SPRINGS

OFFICERS: GILBEY, POL

OBJECTIVE: To study the effect of Brodal on lupins and radish

TRIAL DESIGN: Field trial with a randomised complete block design and three replications

PLOT SIZE: Sprayed - 5 m x 20 m  
Harvested - 1.25 x 20 m

CROP VARIETY: Illyarrie

SEEDING: 3rd week of May at 90 kg/ha with Plain Super at 90 kg/ha

SITE PREPARATION: Basal spray of Sprayseed 200 at 3 L/ha on 15.5.87

SITE DESCRIPTION: Red loamy sand associated with talc

SPRAYING DETAILS:

16.5.87	Treatments 2-14 were sprayed IBS
2.6.87	Treatments 2-4 were sprayed PE No germination
25.6.87	Treatments 5-7 and 13, 14 were sprayed PE Lupins 2-4 leaf, radish cotyledon - 2 leaf rye grass Z11-Z12
10.7.87	Treatments 8-10 were sprayed PE Lupins 4-6 leaf, radish 2-6 leaf, turnip 2-6 leaf, brome grass Z14/23, rye grass Z12.5-Z13

## HERBICIDE APPLICATION RECORD:

Spraying Date	16.5.87	2.6.87	25.6.87	10.7.87
Time	9:30am-11:15am	5.00pm-5:30pm	11:30am-12:15pm	12:05pm-12:25pm
Nozzle Type	8001LP	8002LP (45 deg)	8001LP	8001LP
Pressure	180 KPA	165 KPA	150 KPA	150 KPA
Volume	45 L/ha	84 L/ha	45 L/ha	45 L/ha
Wind speed	14 KPH	12 KPH	0 KPH	5 KPH
Wind direction	NE	E-NE	-	SE
Cloud cover	1	9	3	3
Temp Dry bulb	22	17	19.5	not recorded
Wet bulb	17	13.5	14.5	not recorded
Soil moisture				
Surface	Dry	Moist	Moist	Dry
Sub-surface	Moist	Moist	Moist	Moist

ASSESSMENTS:

Visual Rating	17.8.87 & 20.10.87
Plant counts	12.8.87
Harvest	30.10.87



RATING SCALE (WEEDS):    0 = no effect  
                             1 =    0 -    25% control  
                             2 =   25 -    50% control  
                             3 =   50 -    75% control  
                             4 =   75 -    98% control  
                             5 =   98 - 100% control  
                             6 = 100% control

RATING SCALE (LUPINS):   0 = no effect  
                             1 = slight effect  
                             2 = moderate effect  
                             3 = severe effect

WEEDS PRESENT IN CROP:   Radish, mustard, capeweed, rye grass and brome grass

IBS = Immediately before seeding

PE  = Post-emergence

Figures in tables followed by the same letter do not differ significantly  
(P = 0.05) using Duncans Multiple Range Test.

Table 1. The effect of Brodal on weeds

Treatment/ha	Visual ratings		Plants/m <sup>2</sup>				
	17.8.87	20.10.87	Radish	Turnip	Cape weed	Brome grass	ARG
1. Nil	000	000	14 a	5 a	1 a	1	3
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Radish no germination	555	664	0 bc	0 b	0 b	0	0
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Radish no germination	555	666	0 c	0 b	0 b	0	2
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Radish no germination	566	556	1 bc	0 b	0 b	0	0
5. Simazine 1½ L IBS + Brodal 100 mls PE - 6 weeks - Radish cot/2 leaf/5 cm diam	656	666	0 bc	0 b	0 b	0	0
6. Simazine 1½ L IBS Brodal 150 mls PE - 6 weeks - Radish cot/2 leaf/5 cm diam	656	566	0 c	0 b	0 b	0	0
7. Simazine 1½ L IBS + Brodal 200 mls PE - 6 weeks - Radish cot/2 leaf/5 cm diam	656	666	1 bc	0 b	0 b	0	0
8. Simazine 1½ L IBS + Brodal 100 mls PE - 8 weeks - Radish 2/6 leaf/7 cm diam	666	566	0 bc	0 b	0 b	0	1
9. Simazine 1½ L IBS + Brodal 150 mls PE - 8 weeks - Radish 2/6 leaf/7 cm diam	666	666	0 c	0 b	0 b	0	1
10. Simazine 1½ L IBS + Brodal 200 mls PE - 8 weeks - Radish 2/6 leaf/7 cm diam	656	666	0 c	0 b	0 b	0	0
11. Simazine 1½ L IBS	444	344	1 bc	1 b	0 b	0	1
12. Gesatop A 1½ L IBS	454	454	2 b	0 b	0 b	0	1

Table 1 continued ...

Treatment/ha	Visual ratings		Plants/m <sup>2</sup>				
	17.8.87	20.10.87	Radish	Turnip	Cape weed	Brome grass	ARG
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 6 weeks	566	666	0 bc	0 b	0 b	0	0
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 6 weeks	656	666	0 bc	0 b	0 b	0	0
						NS	NS

Table 2. The effect of Brodal on lupins

Treatment/ha	Visual rating		Plants /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	17.8.87	20.10.87				
1. Nil	000		33	732 d	40.8 a	41.0
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Lupins no germination	000		32	1004 abc	0.2 b	0.9
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Lupins no germination	000	no damage detected	35	957 bc	0 b	0.9
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Lupins no germination	000		33	1007 abc	0 b	0.6
5. Simazine 1½ L IBS + Brodal 100 mls PE - 6 weeks - Lupins 2/4 leaf/5 cm diam	000		33	981 abc	0.3 b	1.6
6. Simazine 1½ L IBS Brodal 150 mls PE - 6 weeks - Lupins 2/4 leaf/5 cm diam	000		34	1010 abc	1.7 b	2.4
7. Simazine 1½ L IBS + Brodal 200 mls PE - 6 weeks - Lupins 2/4 leaf/5 cm diam	101		33	1052 abc	0.1 b	0.6
8. Simazine 1½ L IBS + Brodal 100 mls PE - 8 weeks - Lupins 4/6 leaf/7 cm diam	000		34	1113 ab	0.8 b	1.2
9. Simazine 1½ L IBS + Brodal 150 mls PE - 8 weeks - Lupins 4/6 leaf/7 cm diam	000		33	882 cd	0 b	0.6
10. Simazine 1½ L IBS + Brodal 200 mls PE - 8 weeks - Lupins 4/6 leaf/7 cm diam	000		35	1151 ab	0 b	0.5
11. Simazine 1½ L IBS	000		36	1104 ab	1.8 b	2.0
12. Gesatop A 1½ L IBS	010		35	1191 a	1.0 b	1.4

Table 2 continued ...

Treatment/ha	Visual rating		Plants /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	17.8.87	20.10.87				
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 6 weeks	100		34	1105 ab	0 b	0.9
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 6 weeks	111		33	1102 abc	0 b	0.5

## COMMENTS:

This site was moderately infested with radish which was successfully controlled by the Simazine applied before seeding and grain contamination was reduced to an acceptable level.

While the radish data does not show significant differences, visual observations during the season clearly showed that post emergence applications of Brodal to the lupins successfully controlled the few radish plants that survived the pre emergence herbicide.

# RADISH CONTROL IN LUPINS - BRODAL

TRIAL NUMBER: 87MO52/3965 EX

CO-OPERATOR: MAY & BAKER RURAL

LOCATION: M. HARRINGTON, BALLIDU

OFFICERS: GILBEY, FIEVEZ

OBJECTIVE: To study the effect of Brodal on lupins and radish

TRIAL DESIGN: Field trial with a randomised complete block design and three replications

PLOT SIZE: Sprayed - 5 m x 20 m  
Harvested - 1.4 m x 27.0 m

CROP VARIETY: Illyarrie

SEEDING: 12.5.87 at 100 kg/ha with 150 kg/ha Plain Super

SITE PREPARATION: Basal spray of Sprayseed 200 at 1.5 L/ha on 12.5.87  
Site was worked by farmer some time prior to seeding

SITE DESCRIPTION: Yellow loamy sand

SPRAYING DETAILS: 12.5.87 Treatments 2-14 were sprayed IBS  
29.5.87 Treatments 2-4 were sprayed PE  
lupins cotyledon - 2 leaf, radish  
cotyledon - 2 leaf  
22.6.87 Treatments 5-7 and 13, 14 were sprayed PE  
Lupins 2-4 leaf, radish cotyledon - 6 leaf  
doublegee cotyledon - 2 leaf  
6.7.87 Treatments 8-10 were sprayed PE  
Lupins 4-12 leaf, radish cotyledon - 8 leaf

## HERBICIDE APPLICATION RECORD:

Spraying Date	12.5.87	29.5.87	22.6.87	6.7.87
Time	12:30pm-1:00pm	12.40pm-1:00pm	4:15pm-4:40pm	2:50pm-3:10pm
Nozzle Type	8002LP (45 deg)	8001LP	8002LP (45 deg)	8001LP
Pressure	180 KPA	170 KPA	150 KPA	150 KPA
Volume	79 L/ha	42 L/ha	78 L/ha	44 L/ha
Wind speed	12-15 KPH	0-8 KPH	12-15 KPH	12 KPH
Wind direction	SW	NE	W-SW	N-NE
Cloud cover	3	0	9	0
Temp Dry bulb	16	21.5	16	23
Wet bulb	12	12	13.5	14.5
Soil moisture				
Surface	Moist	Dry	Wet	Dry
Sub-surface	Wet	Moist	Wet	Moist

ASSESSMENTS: Visual rating 3.8.87 & 14.10.87  
Plant counts 14.8.87  
Harvest 10.11.87

RATING SCALE (WEEDS):    0 = no effect  
                             1 =    0 -    25% control  
                             2 =    25 -    50% control  
                             3 =    50 -    75% control  
                             4 =    75 -    98% control  
                             5 =    98 - 100% control  
                             6 = 100% control

RATING SCALE (LUPINS):   0 = no effect  
                             1 = slight effect  
                             2 = moderate effect  
                             3 = severe effect

WEEDS PRESENT IN CROP:   Radish, doublegee and capeweed, cereal re-growth

IBS = Immediately before seeding

PE   = Post-emergence

Figures in tables followed by the same letter do not differ significantly  
(P = 0.05) using Duncans Multiple Range Test.

Table 1. The effect of Brodal on weeds

Treatment/ha	Visual rating		Plants/m <sup>2</sup>	
	3.8.87	14.10.87	Radish	Capeweed
1. Nil	000	000	11 a	2 a
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Radish cot/2 leaf/2 cm diam	445	335	3 c	0 b
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Radish cot/2 leaf/2cm diam	656	536	2 c	0 b
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Radish cot/2 leaf/2cm diam	556	646	1 c	0 b
5. Simazine 1½ L IBS + Brodal 100 mls PE - 6 weeks - Radish cot/6 leaf/14 cm diam	446	633	1 c	0 b
6. Simazine 1½ L IBS Brodal 150 mls PE - 6 weeks - Radish cot/6 leaf/14 cm diam	456	645	1 c	0 b
7. Simazine 1½ L IBS + Brodal 200 mls PE - 6 weeks - Radish cot/6 leaf/14 cm diam	665	656	2 c	0 b
8. Simazine 1½ L IBS + Brodal 100 mls PE - 8 weeks - Radish cot/8 leaf/28 cm diam	444	333	1 c	0 b
9. Simazine 1½ L IBS + Brodal 150 mls PE - 8 weeks - Radish cot/8 leaf/28 cm diam	433	234	1 c	0 b
10. Simazine 1½ L IBS + Brodal 200 mls PE - 8 weeks - Radish cot/8 leaf/28 cm diam	644	536	1 c	0 b
11. Simazine 1½ L IBS	323	100	7 b	0 b
12. Gesatop A 1½ L IBS	323	202	10 ab	0 b



Table 1 continued ...

Treatment/ha	Visual rating		Plants/m <sup>2</sup>	
	3.8.87	14.10.87	Radish	Capeweed
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 6 weeks	456	454	0 c	0 b
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 6 weeks	666	566	0 c	0 b

Table 2. The effect of Brodal on lupins

Treatment/ha	Visual rating		Lupins /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	3.8.87	14.10.87				
1. Nil	000	000	29	213	62.7 a	66.9
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Lupins cot/2 leaf	000	010	40	364	8.6 c	11.9
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Lupins cot/2 leaf	000	010	33	299	1.7 c	10.4
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Lupins cot/2 leaf	010	000	39	293	3.2 c	8.0
5. Simazine 1½ L IBS + Brodal 100 mls PE - 6 weeks - Lupins 2/4 leaf	000	120	37	206	11.7 c	27.8
6. Simazine 1½ L IBS Brodal 150 mls PE - 6 weeks - Lupins 2/4 leaf	000	111	38	162	3.0 c	9.9
7. Simazine 1½ L IBS + Brodal 200 mls PE - 6 weeks - Lupins 2/4 leaf	000	110	36	118	1.4 c	9.9
8. Simazine 1½ L IBS + Brodal 100 mls PE - 8 weeks - Lupins 4/12 leaf	000	100	36	293	8.9 c	12.9
9. Simazine 1½ L IBS + Brodal 150 mls PE - 8 weeks - Lupins 4/12 leaf	000	010	36	285	7.4 c	9.1
10. Simazine 1½ L IBS + Brodal 200 mls PE - 8 weeks - Lupins 4/12 leaf	100	010	36	320	4.8 c	7.1
11. Simazine 1½ L IBS	000	201	33	141	55.0 ab	59.4
12. Gesatop A 1½ L IBS	000	221	37	127	39.2 b	42.9

Table 2 continued ...

Treatment/ha	Visual rating		Lupins /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	3.8.87	14.10.87				
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 5 weeks	000	001	37	446	3.7 c	8.7
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 5 weeks	000	010	37	242	0.3 c	8.0
			NS	NS		

## COMMENTS:

This site had a moderate radish infestation and very dry seasonal conditions resulted in poor crop growth.

Good radish control was achieved in all lupins sprayed with Brodal.

Simazine and Gesatop failed to control radish adequately and grain was badly contaminated.

No response in lupin grain yield was detected in spite of the good radish control achieved with Brodal. However Brodal very successfully reduced grain contamination to an acceptable level when 150 mls Brodal/ha was sprayed 2½ weeks after seeding or 200 mls Brodal/ha was sprayed 6 weeks after seeding.

The formulated Brodal/Simazine mixture controlled radish and reduced grain contamination to an acceptable level.

# RADISH CONTROL IN LUPINS - BRODAL

TRIAL NUMBER: 87NO91/3965 EX

CO-OPERATOR: MAY & BAKER RURAL

LOCATION: HASTINGS, MAWSON

OFFICERS: GILBEY, SWEENEY

OBJECTIVE: To study the effect of Brodal on lupins and radish

TRIAL DESIGN: Field trial with a randomised complete block design and three replications

PLOT SIZE: Sprayed - 5 m x 20 m  
Harvested - 1.5 m x 20 m

CROP VARIETY: Yandee

SEEDING: 27.5.87 at 90 kg/ha with 100 kg/ha Plain super in April and 100 kg/ha Super Mn at seeding.

SITE PREPARATION: Basal spray of Sprayseed 200 at 3 L/ha

SITE DESCRIPTION: Light yellow gravelly loamy sand - variable

SPRAYING DETAILS: 26.5.87 Treatments 2-14 were sprayed IBS  
12.6.87 Treatments 2-4 were sprayed PE lupins and radish emerging  
1.7.87 Treatments 5-7 and 13, 14 were sprayed PE Lupins 5 leaf, radish cotyledon - 2 leaf capeweed 4 leaf, rye grass Z11.5 - Z15/21  
15.7.87 Treatments 8-10 were sprayed PE Lupins 6-12 leaf, radish 2-5 leaf, rye grass Z13.5 - 14.5/22, brome grass Z13.5/22, capeweed 6-8 leaf

## HERBICIDE APPLICATION RECORD:

Spraying Date	26.5.87	12.6.87	1.7.87	15.7.87
Time	10:00am-5:00pm	12.45pm-1:15pm	2:00pm-3:00pm	10:00am-10:30am
Nozzle Type	8001LP	8001LP	8001LP	8001LP
Pressure	180 KPA	165 KPA	150 KPA	150 KPA
Volume	50 L/ha	45 L/ha	45 L/ha	45 L/ha
Wind speed	10 KPH	12 KPH	8 KPH	5 KPH
Wind direction	SW	SW	NE	SW
Cloud cover	8	8	6	8
Temp Dry bulb	16	17.5	17	15
Wet bulb	12	14.5	13.5	13.5
Soil moisture				
Surface	Dry	Dry	Dry	Dry
Sub-surface	Moist	Moist	Moist	Moist

ASSESSMENTS: Visual rating 4.8.87 & 7.10.87  
Plant counts 19.8.87  
Harvest 23.11.87

RATING SCALE (WEEDS):    0 = no effect  
                             1 =    0 -    25% control  
                             2 =    25 -    50% control  
                             3 =    50 -    75% control  
                             4 =    75 -    98% control  
                             5 =    98 - 100% control  
                             6 = 100% control

RATING SCALE (LUPINS):   0 = no effect  
                             1 = slight effect  
                             2 = moderate effect  
                             3 = severe effect

WEEDS PRESENT IN CROP:   Radish, capeweed, rye grass and brome grass

IBS = Immediately before seeding

PE  = Post-emergence

Figures in tables followed by the same letter do not differ significantly  
(P = 0.05) using Duncans Multiple Range Test.

Table 1. The effect of Brodal on radish

Treatment/ha	Visual rating		Plants/m <sup>2</sup>	
	4.8.87	7.10.87	Radish	Capeweed
1. Nil	000	000	24 a	9 a
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Radish cot	565	364	1 b	0 b
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Radish cot	-66	566	0 b	0 b
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Radish cot	656	666	0 b	0 b
5. Simazine 1½ L IBS + Brodal 100 mls PE - 5 weeks - Radish cot/2 leaf/4 cm diam	666	566	0 b	0 b
6. Simazine 1½ L IBS Brodal 150 mls PE - 5 weeks - Radish cot/2 leaf/4 cm diam	666	566	0 b	0 b
7. Simazine 1½ L IBS + Brodal 200 mls PE - 5 weeks - Radish cot/2 leaf/4 cm diam	666	666	0 b	0 b
8. Simazine 1½ L IBS + Brodal 100 mls PE - 7 weeks - Radish 2/5 leaf/10 cm diam	655	665	0 b	0 b
9. Simazine 1½ L IBS + Brodal 150 mls PE - 7 weeks - Radish 2/5 leaf/10 cm diam	654	664	1 b	0 b
10. Simazine 1½ L IBS + Brodal 200 mls PE - 7 weeks - Radish 2/5 leaf/10 cm diam	665	666	0 b	0 b
11. Simazine 1½ L IBS	464	342	2 b	0 b
12. Gesatop A 1½ L IBS	653	441	2 b	0 b

Table 1 continued ...

Treatment/ha	Visual rating		Plants/m <sup>2</sup>	
	4.8.87	7.10.87	Radish	Capeweed
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 5 weeks	565	255	1 b	0 b
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 5 weeks	666	56-	0 b	0 b

- = Plot not rated.

Table 2. The effect of Brodal on lupins

Treatment/ha	Visual rating		Lupins /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	4.8.87*	7.10.87				
1. Nil	000	000	37	773	9.9 a	10.2
2. Simazine 1½ L IBS + Brodal 100 mls PE - 2½ weeks - Lupins cot	010	000	44	1117	0 b	0.8
3. Simazine 1½ L IBS + Brodal 150 mls PE - 2½ weeks - Lupins cot	-02	001	48	1641	0 b	0.7
4. Simazine 1½ L IBS + Brodal 200 mls PE - 2½ weeks - Lupins cot	000	000	37	1336	0 b	1.4
5. Simazine 1½ L IBS + Brodal 100 mls PE - 5 weeks - Lupins 5 leaf	020	000	47	1390	0 b	0.9
6. Simazine 1½ L IBS Brodal 150 mls PE - 5 weeks - Lupins 5 leaf	000	000	40	1302	0 b	1.2
7. Simazine 1½ L IBS + Brodal 200 mls PE - 5 weeks - Lupins 5 leaf	102	000	32	1557	0 b	1.1
8. Simazine 1½ L IBS + Brodal 100 mls PE - 7 weeks - Lupins 6/12 leaf/28 cm diam	000	000	39	1158	0 b	0.9
9. Simazine 1½ L IBS + Brodal 150 mls PE - 7 weeks - Lupins 6/12 leaf/28 cm diam	200	000	38	1313	0 b	1.0
10. Simazine 1½ L IBS + Brodal 200 mls PE - 7 weeks - Lupins 6/12 leaf/28 cm diam	100	010	46	1488	0 b	0.7
11. Simazine 1½ L IBS	020	000	34	1465	2.4 b	3.1
12. Gesatop A 1½ L IBS	200	100	48	1164	1.7 b	2.4



Table 2 continued ...

Treatment/ha	Visual rating		Lupins /m <sup>2</sup>	Grain yield kg/ha	% Radish contamination	% Total foreign matter
	4.8.87*	7.10.87				
13. Simazine 1½ L IBS + Simazine 500 mls + Brodal 150 mls (FR1547 ¾ L) PE - 5 weeks	000	000	36	1311	0 b	1.2
14. Simazine 1½ L IBS + Simazine 667 mls + Brodal 200 mls (FR1547 1 L) PE - 5 weeks	200	000	41	1376	0.2 b	1.3
			NS	NS		

\* Trial was affected by Brown leaf spot and root rot. Plots were rated on vigor, thus damage that was detected is most likely due to disease.

- = Plot not rated.

#### COMMENTS:

This site had a moderate to heavy radish infestation which was well controlled by the pre-emergence herbicides, simazine or Gesatop.

The lack of significant differences in the grain yield data is most likely due to the extreme variability due to disease and uneven seeding.

Radish contamination in the grain was reduced by all herbicide treatments but Brodal was particularly effective by reducing the radish contamination to zero.

# RADISH CONTROL IN LUPINS - BRODAL

TRIAL NUMBER: 86MO33/3965 EX

CO-OPERATOR: MAY & BAKER ACL

LOCATION: T. REYNOLDS, MILING

OFFICERS: GILBEY, FIEVEZ, BROWN

OBJECTIVE: To study the effect of Brodal on radish, lupins and wheat following the lupins

TRIAL DESIGN: Field trial with a randomised complete block design and three replications

PLOT SIZE: Sprayed - 5 m x 25 m  
Harvested - 1.35 m x 24 m

CROP VARIETY: Illyarrie 1986, Canna 1987

SITE DESCRIPTION: Yellow loamy sand

DATE SOWN: 1.5.86 - lupins  
15.6.87 - wheat

DATE SPRAYED: 1.5.86 Simazine and Atrazine applied IBS  
10.6.86 Brodal  
Growth stage of weeds were, radish - average 12 cm diameter with 6 leaves

## PLANTING AND SEASONAL CONDITIONS:

:1986

Lupins were sown into moist weed free soil 2-3 days after heavy germinating rains. Growing conditions were good for the rest of the season with no significant disease or moist problems.

## HERBICIDE APPLICATION RECORD:

Spraying Date	1.5.86	10.6.86
Time	12:40pm-1:40pm	12:15pm-1:30pm
Nozzle Type	8002LP	Hardie 14110
Pressure	160 KPA	190 KPA
Volume	72 L/ha	60 L/ha
Wind speed	10 KPH	8 KPH
Wind direction	NE	SW
Cloud cover	0	9
Temp Dry bulb	26	17
Wet bulb	-	15
Soil moisture		
Surface	Dry	Moist
Sub-surface	Slightly Moist	Moist

:1987

Wheat was sown with a combine into dry soil with sub.surface moisture following 8 mm rain on 10.6.87. Area was ploughed before seeding and sprayed with 750 ml Sprayseed plus 13 gm Glean. 750 ml 24-D amine/ha was sprayed late August for radish and turnip control which was not enough to kill all weeds.

ASSESSMENTS:	Visual rating	23.6.86, 28.7.86, 25.8.86
	Plant counts	14.8.86, 11.8.87
	Grass head counts	2.10.86
	Harvest	21.11.86, 13.11.87

RATING SCALE (WEEDS):	0 = no effect
	1 = 0 - 25% control
	2 = 25 - 50% control
	3 = 50 - 75% control
	4 = 75 - 98% control
	5 = 98 - 100% control
	6 = 100% control

RATING SCALE (LUPINS):	0 = no effect
	1 = slight effect
	2 = moderate effect
	3 = severe effect

WEEDS PRESENT IN CROP	Radish, turnip, annual rye grass, cereal re-growth,
1986:	capeweed

IBS = Immediately before seeding  
PE = Post-emergence

Figures in tables followed by the same letter do not differ significantly (P = 0.05) using Duncans Multiple Range Test.

Table 1. Effect of Brodal on weeds

Treatment/ha	Visual rating		1986		1987	
	27.7.86	28.10.86	Radish plants /m <sup>2</sup>	% control	Radish plants /m <sup>2</sup>	% control
1. Nil	000	000	15 a	0	71 a	0
2. Brodal 100 ml PE	432	332	2 b	87	24 c	66
3. Brodal 150 ml PE	454	333	1 b	93	13 c	82
4. Brodal 200 ml PE	543	343	1 b	93	10 c	86
5. Brodal 300 ml PE	666	666	0 b	100	11 c	85
6. Brodal 400 ml PE	666	664	0 b	100	18 c	74
7. Brodal 100 ml PE + Simazine 1.5 L IBS	666	646	0 b	100	10 c	86
8. Brodal 150 ml PE + Simazine 1.5 L IBS	666	666	0 b	100	15 c	79
9. Brodal 200 ml PE + Simazine 1.5 L IBS	666	666	0 b	100	14 c	80
10. Brodal 300 ml PE + Simazine 1.5 L IBS	666	666	0 b	100	19 c	74
11. Brodal 400 ml PE + Simazine 1.5 L IBS	666	666	0 b	100	14 c	81
12. Simazine 1.5 L IBS	544	433	1 b	93	22 c	70
13. Simazine 0.75 L + Atrazine 0.75 L IBS	345	434	0 b	100	46 b	36

Table 2. The effect of Brodal on lupins in 1986 and wheat in 1987

Treatment/ha	Plants/m <sup>2</sup>	Yield kg/ha	Lupins	Yield kg/ha	Wheat
			Radish contamination %		Radish contamination %
1. Nil	33	685 d	26.9 a	992 c	2.1
2. Brodal 100 ml PE	39	729 cd	5.8 b	1381 ab	0.4
3. Brodal 150 ml PE	33	836 bcd	1.0 c	1417 ab	0.7
4. Brodal 200 ml PE	35	829 bcd	1.0 c	1226 bc	1.6
5. Brodal 300 ml PE	37	960 abc	0 c	1185 bc	2.5
6. Brodal 400 ml PE	37	1082 a	0 c	1398 ab	2.4
7. Brodal 100 ml PE + Simazine 1.5 L IBS	39	1034 ab	0.1 c	1381 ab	1.4
8. Brodal 150 ml PE + Simazine 1.5 L IBS	36	1048 ab	0 c	1592 a	1.3
9. Brodal 200 ml PE + Simazine 1.5 L IBS	39	1149 a	0 c	1590 a	1.2
10. Brodal 300 ml PE + Simazine 1.5 L IBS	37	1138 a	0 c	1392 ab	0.6
11. Brodal 400 ml PE + Simazine 1.5 L IBS	40	1119 a	0 c	1467 ab	3.1
12. Simazine 1.5 L IBS	41	952 abc	5.1 b	1352 ab	2.2
13. Simazine 0.75 L + Atrazine 0.75 L IBS	37	1126 a	4.0 b	1158 bc	4.6
	NS				NS

## COMMENTS:

## 1986 - Lupins

All herbicides increased grain yield except for Brodal treated plots up to 200 ml/ha without Simazine, which coincides with the highest rate that failed to achieve complete radish control. 300 ml Brodal controlled all radish and capeweed as well as increasing grain yield.

All herbicides reduced radish contamination in the grain and with the exception of 100 ml Brodal, grain from all other plots treated with Brodal had less contamination than those not sprayed with Brodal. There was no difference in grain yield or

contamination between Simazine or Simazine plus Atrazine. Grain from both of these treatments was contaminated with more than 2% radish and would have suffered dockage on delivery.

Brodal caused slight crop damage to seedling lupins.

Overall, the highest yield with no significant grain contamination was achieved where 100 ml Brodal/ha or more was sprayed post-emergence following 1½ L Simazine/ha sprayed immediately before seeding, and where 300 ml Brodal/ha was sprayed post-emergence to lupins that had not previously been sprayed with Simazine.

#### 1987 - Wheat

Wheat yield was increased on all plots that had been sprayed with Brodal plus Simazine in the previous year. The radish infestation in the wheat was lower on all areas previously sprayed with either Simazine or Brodal or both.

This data demonstrates that good radish control in a lupin crop can have a beneficial effect on the following wheat crop.