U2. Lupin Herbicide Tolerance, Wanilla (Lower Eyre Peninsula), Tooligie (Upper Eyre Peninsula, South Australia

Aim

To determine the crop safety of applying metribuzin herbicide to commercial lupin varieties.

Wild Radish (*Raphanus raphanistrum*) is increasingly becoming a significant weed in the lupin growing areas of eastern Australia. Metribuzin (in combination with diflufenican) is registered for post-emergent control of Wild Radish in WA. These trials aim to build a case towards obtaining a permit its use in the eastern states.

Treatments

Sites:	Wanilla (high rainfall Lower Eyre Peninsula)
	Tooligie (low-medium rainfall Upper Eyre Peninsula)
Varieties:	Coromup, Jenabillup, Jindalee, Mandelup, Wonga,
Sowing Date:	Wanilla = 18 May 2010
	Tooligie = 25 May 2010
Treatments:	Control: Nil herbicides
	Treat 1: Low Metribuzin (100g/ha)
	Treat 2: High Metribuzin (200g/ha)
	Treat 3: Low Metribuzin (100g/ha) plus Diflufenican (100ml/ha)
	Treat 4: High Metribuzin (200g/ha) plus Diflufenican (100ml/ha)
Treatment dates	Wanilla = 28 August 2010
	Tooligie = 28 August 2010
Fertiliser:	Map + Zn @ 100kg/ha at sowing

Results and Interpretation

Table U2.1. Effect of various herbicide treatment combinations on grain yield (% of control) of lupin varieties at Wanilla, Lower Eyre Peninsula 2010.

Wanilla	Mandelup	Wonga	Jenablliup	Jindalee	Corromup
Treat 1 (% Control)	101%	93%	98%	90%	91%
Treat 2 (% Control)	101%	89%	98%	92%	100%
Treat 3 (% Control)	94%	88%	84%	87%	80%
Treat 4 (% Control)	93%	92%	94%	86%	85%
Contol (t/ha)	1.00	1.00	1.00	1.00	1.00
lsd 0.05%	ns	ns	ns	ns	ns
CV = 12.87					

Table U2.2: Effect of various herbicide treatment combinations on grain yield (% of control) of lupin varieties at Tooligie, Lower Eyre Peninsula 2010.

Tooligie	Mandelup	Wonga	Jenablliup	Jindalee	Corromup
Treat 1 (% Control)	91%	87%	91%	102%	94%
Treat 2 (% Control)	91%	91%	87%	106%	93%
Treat 3 (% Control)	88%	82%	79%	105%	90%
Treat 4 (% Control)	94%	85%	87%	100%	96%
Contol (t/ha)	3.96	3.65	3.94	3.20	3.60
lsd 0.05%	9%	9%	9%	ns	9%
CV = 6.13					

Herbicide treatments were applied later than originally planned due to a string of wet and windy days throughout August.

All varieties were noticeably affected from the various herbicide applications, but there was no visual difference between varieties.

A cool, wet finish to the year is thought to have reduced the effect of the herbicide damage, producing non significant results at Wanilla. The varieties Wonga and Jenabillup both showed the most yield loss due to the application of metribuzin at Toolige (Table U2.2). West Australian data shows that Jenabillup is not resistant to metribuzin and is not recommended for treatment with this herbicide. Mandelup, Coromup and Jindalee showed no significant yield loss at either site. Treatments spiked with diflufenican yielded similarly to metribuzin alone.

Key Findings and Comments

Metribuzin did demonstrate good crop safety on several varieties in 2010, which indicates it may be relatively safe for the late control of wild radish in some lupin varieties. However, 2010 was an incredibilly 'soft' finish which allowed plants to make unchecked compensatetory growth after the herbicide was applied.

These trials will be repeated in 2011.