Legume and oilseed herbicide tolerance

Key findings

- New post emergent broadleaf herbicides Torpedo, Conclude, Precept and Velocity generally gave good control of pulses or canola.
- Pre-emergent grass herbicides had no effect on the growth of pulses or canola.

Why do the trial?

To compare the tolerance of legumes and canola varieties to a range of herbicides and timings.

How was it done?

Plot size 2m x 3m **Fertiliser** MAP @ 60kg/ha

Seeding date 30th May 2008

14 strips of canola, pastures, vetch, chickpeas, faba beans, field peas and lentils were sown. 61 herbicide treatments were applied across these crops at one of 5 timings.

The timings were

Pre sowing (IBS)	30th May
Post seeding pre-emergent	6th June
Early post emergent (3 – 4 node)	4th July
Post emergent (5 node)	18th July
Late post emergent (8 node)	7th August

Treatments were visually assessed and scored for herbicide effects 4 weeks after application.

Crop damage ratings were:

1 = no effect
2 = slight effect
3 = moderate effect
4 = severe effect
5 = death

Results

Many of the herbicides are not registered for the crops that have been sprayed. It is important to check the herbicide label before following strategies used in this demonstration. Herbicide effects can vary depending on conditions.

All pre-emergent herbicides incorporated by sowing had little effect on any of the crops treated. A reminder that registrations for these herbicides are limited or not recommended for many of these crop types.

Broadstrike applied early post emergent to Nugget and Nipper lentils had a moderate to severe effect on both varieties.

Sniper applied early post emergent gave poor control of beans and chick peas. In previous years this has not been the case.

Raptor applied early post emergent at 45g/ha caused only a slight effect in Farah beans but moderate effects were recorded in the Nura beans. There had not been any difference between bean varieties in the recent past when treated with Raptor. This product is only registered for use in field peas and lucerne based pastures(clovers, lucerne, medics, saradellas) when applied post-emergent in South Australia. There is a permit in South Australia for faba beans.

At 0.5L/ha Precept had no effect on Morava vetch and chickpeas, and only a moderate effect on both bean varieties. In 2007 Precept was applied at 1.0L/ha and killed all pulses and canola.

Velocity is a new introduction for 2008 and it did a good job at killing all crops except for Morava vetch where effects were only moderate.

There was no effect of Affinity or atrazine on the 2 vetch varieties. In the previous 3 years there has been at least moderate effects and in 2007 both chemicals caused death in Capello and atrazine killed the Morava.

Most of the knockdown chemicals did a good job on all crops other than the vetch. When glyphosate and Sprayseed were applied alone they both struggled to kill some crops.
Of the 2 double knock treatments glyphosate // Sprayseed 3DAS gave the best result across all crops. The only knockdown treatments that killed the vetch were glufosinate or glyphosate + Cadence. Glufosinate did a good job on all other crops except for the beans and canola.

Legume & Canola Herbicide Tolerance

				Pasture			Lentils		Vetch		Chick Peas	Peas	Beans		Canola		
				Angel	Herald	Frontier Balansa	Nugget	Nipper	Morava	Capello	Genesis 090	Kaspa	Nura	Farah	Kimberley	Tornado	44C73
		Treatment	Rate kg/ha	15	15	15	55	45	45	45	80	100	140	140	5	5	5
Pre-Sow 30/05	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Avadex Xtra	1600ml	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3	Dual Gold	500ml	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	4	BAY-191	166g	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	5	Boxer Gold	2500ml	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	6	Propyzamide	1500g	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	7	Trifluralin + Cynmethylin	1900ml/360ml	1	1	1	2	1	1	1	1	1	1	1	1	1	1
PSPE 06/06	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Diuron	850g	2	2	4	1	1	1	1	1	1	1	1	3	4	2
	3	Simazine	850g	2	1	4	1	1	1	1	2	1	1	1	1	1	1
	4	Diuron + Simazine	410g/410g	1	1	4	1	1	1	1	1	1	1	1	1	1	1
	5	Metribuzin	280g	3	3	4	1	1	2	2	1	2	2	1	1	1	1
	6	Spinnaker	70g	1	4	5	3	3	1	1	2	2	3	2	5	5	1
	7	Spinnaker + Simazine	40g/850g	3	4	5	2	2	2	2	1	2	2	2	5	5	1
	8	Balance	100g	5	5	5	5	5	3	3	1	3	3	3	5	5	5
	9	Balance + Simazine	100g/830g	5	5	5	5	4	3	3	1	3	3	3	5	5	5
3-4 node 04/07	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Simazine	850g	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	3	Metribuzin	280g	5	5	5	2	2	2	2	1	1	2	3	5	1	5
	4	Broadstrike	25g	1	1	1	4	3	1	1	1	1	3	2	5	5	1
	5	Brodal Options	150ml	3	3	2	2	1	1	1	1	2	3	3	3	3	1
	6	Brodal Options + MCPA Amine	150ml/150ml	3	3	2	2	1	1	1	1	2	3	3	3	3	3
	7	Sniper 750WG	50g	3	3	1	1	1	1	1	1	1	1	1	1	1	1
	8	Spinnaker + wetter	70g/0.2%	2	4	4	5	4	1	1	5	1	3	3	5	5	1
	9	Raptor + wetter	45g/0.2%	1	4	4	5	5	2	1	5	1	3	2	5	5	1
5 node 18/07	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Logran	10g/0.1%	3	4	5	5	5	5	5	5	5	5	5	5	5	1
	3	Ally + wetter	7g/0.1%	4	5	5	5	5	2	5	5	5	5	5	5	5	2
	4	Eclipse + Uptake	7g/0.5%	3	5	5	5	5	4	4	4	5	5	5	5	5	1
	5	Torpedo + Uptake	100ml/0.5%	4	4	5	5	5	5	5	5	5	5	5	5	5	5
	6	Conclude + Uptake	700ml/0.5%	3	4	5	5	5	5	5	5	5	5	5	5	5	5
	7	Precept + Hasten	500ml/1%	4	4	3	5	5	1	5	1	4	3	3	5	5	5
	8	Velocity + Hasten	670ml/1%	5	5	4	5	5	3	5	4	5	5	5	5	5	5
	9	Banvel M	1L	5	5	4	5	5	4	5	5	4	5	5	5	5	5
	10	Intervix + Hasten	600ml/1%	3	5	5	5	5	3	3	5	4	4	4	5	5	1
	11	Midas + Hasten	900ml/0.5%	1	5	5	5	5	3	5	4	4	4	4	5	5	3
	12	Hussar OD + wetter	100ml/0.25%	5	5	5	5	5	5	5	5	5	5	5	5	5	2
	13	Crusader + Uptake	500ml/0.5%	3	5	5	5	5	5	5	5	5	5	5	5	5	1
	14	Atlantis OD + Hasten	330ml/0.5%	5	5	5	5	5	4	5	4	5	5	5	5	5	1
	15	Affinity Force + MCPA Amine	100ml/500ml	4	4	4	4	4	1	1	5	4	4	5	5	5	5
	16	Atrazine + Hasten	833g/1%	4	3	4	3	3	1	1	3	4	2	2	3	1	3
	17	Lontrel	150ml	5	5	5	5	5	5	5	5	5	5	5	1	1	1
8 node 07/08	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	MCPA Sodium	700ml	3	3	3	3	4	4	4	3	1	4	4	5	5	5
	3	MCPA Amine	350ml	3	3	3	4	4	4	4	3	1	4	4	5	5	5
	4	Amicide 625	1.2L	4	4	4	5	5	5	5	5	5	5	5	5	5	5
	5	2,4-D Ester	70ml	2	2	3	1	1	1	1	4	1	1	1	3	3	3
5 node 18/07	1	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Sprayseed	2L	3	3	3	4	4	2	2	2	4	3	3	5	5	4
	3	Glyphosate	1L	5	5	5	5	5	2	2	4	5	4	4	5	5	5
	4	Glyphosate + LVE 680	1L/500ml	5	5	5	5	5	4	4	5	5	5	5	5	5	5
	5	Glyphosate + Hammer	1L/50ml	5	5	5	5	5	3	3	4	5	4	4	5	5	5
	6	Glyphosate + Goal	1L/100ml	5	5	5	5	5	4	4	5	5	5	5	5	5	5
	7	Glyphosate + Cadence	1L/115g	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	10	Alliance	2L	4	4	4	4	4	3	4	4	5	5	5	5	5	5
	11	Glyphosate // Sprayseed 3DAS	1.2L//1.2L	5	5	5	5	5	2	3	4	5	4	4	5	5	5
	12	Sprayseed // Sprayseed 3DAS	1.2L//1.2L	3	3	3	4	4	4	3	4	5	4	4	5	5	5
	13	Glufosinate	2.5L	5	5	5	5	5	5	5	4	5	4	4	3	5	4
	14	NIL		1	1	1	1	1	1	1	1	1	1	1	1	1	1