

Legume and oilseed herbicide tolerance

Key findings

- A wet June meant that many of the PSPE treatments like simazine at 850g/ha, diuron 410g/ha with simazine 410g/ha or Terbyne 1kg/ha produced more damage compared to normal
- Group B tolerant Angel medic does not tolerate Logran, Ally or Eclipse post emergent

Why do the trial?

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

How was it done?

Plot size 2m x 3m **Fertiliser** DAP @ 50 kg/ha + 2% Zinc

Seeding date 12th June 2012

13 strips of canola, pasture, vetch, chickpea, faba bean, field pea and lentils were sown. 58 herbicide treatments were applied across these crops at 4 different timings.

The timings were:

| | |
|----------------------------------|-------------------------|
| Incorporated by sowing (IBS) | 12 th June |
| Post seeding pre-emergent (PSPE) | 18 th June |
| Early post emergent (3-4 node) | 18 th July |
| Post emergent (5-6 node) | 3 rd August |
| Late post emergent (9 node) | 20 th August |

Treatments were visually assessed and scored for herbicide effects 4 and 6 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 between seasons and depend on soil and weather conditions at time of application.

The pre-emergent herbicides Boxer Gold, Sakura and propyzamide were incorporated by sowing in 2012. It should be pointed out that for these pre-emergent herbicides, many are not currently registered for many of the crop types in the trial.

Sakura produced moderate to severe effects on all 3 canola and pasture varieties and slight effects on the pea, bean and lentil varieties. Boxer Gold also produced a slight effect on the lentil and pasture varieties.

Propyzamide (500g/kg) more commonly known as Kerb or Edge was included in the trial for the first time in 2011 as an early post emergent application. This year it was applied IBS and no damage symptoms were scored in any of the canola or legume varieties, similar to last year.

The Sakura, propyzamide and simazine treatments all gave very good control of the volunteer oats across the site in 2012.

Of the PSPE treatments simazine at 850g/ha, diuron 410g/ha with simazine 410g/ha or Terbyne 1kg/ha produced more damage to both lentil varieties, compared to normal. This might be partly due to a wet June. All of the PSPE treatments were particularly damaging to the pasture varieties.

In the early post emergent (3 to 4 node) treatments Brodal Options 150ml/ha or Brodal Options 150ml/ha with MCPA amine 150ml/ha produced moderate damage to both lentil varieties. These treatments also produced slight damage on the Gonyah peas. Gonyah peas were also damaged by early post emergent metribuzin 280g/ha and also MCPA Sodium 700ml at the 9 node stage, which also occurred in 2011.

In the post emergent treatments a range of herbicides produced very good control of all the non-herbicide tolerant legume species. These included Eclipse, Affinity, Conclude, Precept, Velocity, Flight, Banvel M, Hussar, Crusader, Atlantis and Lontrel. Ecopar tended to give slightly poorer control compared to Affinity on canola and legumes. However, it was much safer on the pasture legumes and gave no damage to the balansa clover.

The group B herbicide tolerant Angel medic was included again in 2012. It showed very good tolerance to PSPE or post Spinnaker and Raptor. However, as shown in previous trials it does not tolerate Logran, Ally or Eclipse. Intervix only damaged it slightly.

There was little differentiation between knockdown herbicides in 2012, with all treatments providing good levels of control on legumes and canola. Glyphosate applied alone at 1.0L/ha gave the slowest rate of control, even though the final result was similar to the other knock down treatments.

4 weeks after application of the paraquat treatments the chickpeas had started to re-shoot. After 7 weeks the beans, vetch and lentils were also re-shooting through this treatment.

The glyphosate treatments with the addition of either Amicide Advance or Cadence maintained complete control for the entire season.

Legume & Canola
Herbicide Tolerance

Sown: 12/06/12

| | | | Canola | | | Bean | Pea | C/pea | Vetch | | Lentil | | Pasture | | |
|---------------------|------------------------------------|-------------|--------|---------|--------|-------|-------|-------------|---------|--------|---------------|-------|---------------|------------------|-------|
| | | | 43C80 | Cobbler | Garnet | Farah | Gunya | Genesis 090 | Capello | Rasina | PBA Herald XT | Flash | Wilpena Sulla | Frontier Balansa | Angel |
| | Treatment | Rate kg/ha | 5 | 5 | 5 | 140 | 100 | 80 | 45 | 45 | 45 | 55 | 15 | 15 | 10 |
| IBS (12/06/12) | 1 Nil | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 Boxer gold | 2500mL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 |
| | 3 Sakura | 118g | 3 | 3 | 4 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 3 | 5 | 2 |
| | 4 Propyzimide | 1000mL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| PSPE (18/06/12) | 1 Diuron | 850g | 2 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 4 | 5 | 3 |
| | 2 Simazine | 850g | 5 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 5 | 5 | 5 |
| | 3 Diuron + Simazine | 410g/410g | 4 | 2 | 4 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 5 | 5 | 5 |
| | 4 Metribuzin | 280g | 5 | 3 | 4 | 2 | 1 | 1 | 5 | 2 | 4 | 4 | 4 | 5 | 5 |
| | 5 Terbyne | 1000g | 5 | 2 | 5 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 5 | 5 | 5 |
| | 6 Spinnaker | 70g | 1 | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 |
| | 7 Spinnaker + Simazine | 40g/850g | 5 | 4 | 5 | 1 | 1 | 2 | 1 | 1 | 3 | 3 | 5 | 5 | 5 |
| | 8 Balance | 100g | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 9 Balance + Simazine | 100g/830g | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| 3-4 node (18/07/12) | 1 NIL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 Simazine | 850g | 2 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 |
| | 3 Metribuzin | 280g | 5 | 1 | 5 | 1 | 3 | 3 | 4 | 2 | 2 | 2 | 2 | 5 | 5 |
| | 4 Broadstrike | 25g | 1 | 4 | 4 | 3 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 2 | 1 |
| | 5 Brodal Options | 150ml | 3 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 3 | 3 | 5 | 3 | 3 |
| | 6 Brodal Options + MCPA Amine | 150ml/150ml | 4 | 5 | 3 | 4 | 2 | 4 | 4 | 4 | 3 | 3 | 5 | 3 | 3 |
| | 7 Sniper 750WG | 50g | 3 | 3 | 2 | 4 | 2 | 4 | 4 | 3 | 2 | 2 | 5 | 3 | 3 |
| | 8 Spinnaker + wetter | 70g/0.2% | 1 | 5 | 5 | 1 | 1 | 3 | 2 | 3 | 1 | 4 | 2 | 4 | 1 |
| | 9 Raptor + wetter | 45g/0.2% | 1 | 5 | 5 | 1 | 2 | 4 | 2 | 3 | 2 | 4 | 1 | 4 | 1 |
| 5-6 node (03/08/12) | 1 NIL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 Logran+wetter | 10g/0.1% | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 3 |
| | 3 Ally + wetter | 7g/0.1% | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 |
| | 4 Eclipse SC + Uptake | 50ml/0.5% | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 5 | 4 |
| | 5 Ecopar + MCPA Amine | 400ml/500ml | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 2 | 1 | 2 |
| | 6 Affinity Force + MCPA Amine | 100ml/500ml | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 |
| | 7 Conclude + Uptake | 700ml/0.5% | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 |
| | 8 Precept + Hasten | 750ml/1% | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 |
| | 9 Velocity + Hasten | 670ml/1% | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 10 Flight EC | 720ml | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 4 |
| | 11 Banvel M | 1L | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 |
| | 12 Intervix + Hasten | 600ml/1% | 1 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 5 | 2 |
| | 13 Hussar OD + wetter | 100ml/0.25% | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| | 14 Crusader + wetter | 500ml/0.25% | 2 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 4 |
| | 15 Atlantis OD + Hasten | 330ml/0.5% | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 |
| | 16 Atrazine + Hasten | 833g/1% | 5 | 2 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 |
| | 17 Lontrel 600 | 150ml | 1 | 1 | 1 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 |
| | 18 Starane | 300ml | 2 | 2 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 2 | 2 |
| 9 node (20/08/12) | 1 MCPA Sodium | 700ml | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 |
| | 2 MCPA Amine | 350ml | 3 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 2 | 2 | 2 |
| | 3 Amicide Advance 700 | 1.2L | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 |
| | 4 2,4-D Ester | 70ml | 3 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 1 | 2 | 2 |
| 3-4 node (03/08/12) | 1 NIL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 Sprayseed | 2L | 5 | 5 | 5 | 4 | 5 | 3 | 4 | 5 | 5 | 5 | 4 | 5 | 5 |
| | 3 Gramoxone | 1L | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| | 4 Glyphosate | 1L | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 5 Glyphosate + LVE 680 | 1L/500ml | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 6 Glyphosate + Amicide Advance 700 | 1L/650ml | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 7 Glyphosate + Ecopar | 1L/150ml | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 8 Glyphosate + Hammer | 1L/50ml | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 9 Glyphosate + Cadence | 1L/115g | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 10 Glyphosate + Pyresta | 1L/400ml | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 11 Glyphosate + Sharpen | 1L/18g | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 |
| | 12 Glyphosate + Valor | 1L/30g | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 13 Glyphosate + Goal | 1L/75mL | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 14 Glyphosate // Sprayseed 3DAS | 1.2L/1.2L | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| | 15 NIL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

