

Legume and oilseed herbicide tolerance

Key findings

- Good soil moisture conditions allowed clear separation of relatively safe and more damaging treatments.
- Many results from 2010 were replicated in 2011.
- Spinnaker at all application timings and Raptor at 4 node appeared to be more damaging to beans than in previous years.

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 MAP @ 90 kg/ha +
2% Zinc

Seeding date 28th May 2011

12 strips of canola, pasture, vetch, chickpea, faba bean, field pea and lentils were sown. 54 herbicide treatments were applied across these crops at 4 different timings.

The timings were

| | |
|----------------------------------|-------------------------|
| Post seeding pre-emergent (PSPE) | 31 st May |
| Early post emergent (4 node) | 12 th July |
| Post emergent (7 node) | 26 th July |
| Late post emergent (10 node) | 19 th August |

Treatments were visually assessed and scored for herbicide effects 4-5 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.

Of the PSPE treatments Balance (registered only in Chickpeas) was the most effective, with results ranging from high levels of damage to beans, peas and Rasina vetch to complete control of all canola, pasture and lentils. No damage symptoms were present in the Genesis 090 Chickpeas.

With the exception of chickpeas and beans at the PSPE timing, metribuzin was damaging to all varieties to varying degrees at the PSPE and 4 node timings. It appeared to be particularly damaging at the early post emergent application timing, especially in lentils.

Spinnaker had moderate damage effects on beans when applied PSPE on its own at 70g/ha or when applied at 40g/ha with 850 g/ha simazine. Spinnaker and Raptor both produced high levels of damage when applied to beans at the 4 node stage.

The pre-emergent herbicides Boxer Gold and Sakura were applied early post emergent in 2011. Sakura produced slight effects on 2 of the 3 canola varieties. Whilst Boxer Gold applied at early post emergent timing had no effect on canola but had a slight effect on Capello vetch and Scimitar medic. Propyzamide (500g/kg) more commonly known as Kerb or Edge was included in the trial for the first time in 2011. It was applied at the early post emergent stage and no damage symptoms were scored in any of the canola or legume varieties. It should be pointed out that for these pre-emergent herbicides many are not currently registered for many of the varieties in the trial.

Clearfield canola as expected was not affected by Intervix. Intervix only had moderate damage levels on peas, Rasina vetch and Scimitar medic. This result reinforces label recommendations on Intervix to the addition of clopyralid (Lontrel) for improved control of legumes.

There was little differentiation between knockdown herbicides in 2011, with majority providing good levels of control on legumes and canola. Genesis 090 chickpeas and Rasina vetch were the most difficult varieties to get total control with knockdown herbicides. Sprayseed alone was only rated as moderate effect on vetch and lentils. The 50ml spike of Hammer (400g/L) added to glyphosate has resulted in reduced damage in Rasina vetch in the last two seasons results.

Wilpena (*Sulla hedysarum*) was included in the trial in 2010. Over the past two seasons it has shown similar tolerance to the post sowing pre-emergent treatments compared to the other pasture entries. Wilpena has also shown little damage to the early post emergent treatments of simazine and Broadstrike. It has also shown improved tolerance to metribuzin, but was affected more by Brodal Options or Sniper.

MCPA Sodium at 700 ml/ha produced a slight effect on peas in 2011.

| Legume & Canola Herbicide Tolerance | | | Canola | | | Bean | Pea | Cipea | Vetch | | Lentil | Pasture | | |
|--|-----------|-----------------------------|-------------|-----------|--------|-------|-------|-------------|---------|--------|--------|--------------------|--------|------|
| | | | 44278 | Cobble TT | Garnet | Perch | Gunya | Genesle 080 | Capelle | Rosina | Fleish | Frontier Belona | Belmer | Sule |
| Sown: 23/05/2011 | | | | | | | | | | | | | | |
| | Treatment | Rate L/ha | 10 | 10 | 10 | 45 | 45 | 45 | 80 | 100 | 40 | 5 | 5 | 5 |
| 4 node 01/05/2011 | 1 | NIL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | Dimn | 350g | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| | 3 | Simazine | 350g | 5 | 1 | 3 | 1 | 2 | 1 | 2 | 1 | 5 | 4 | 4 |
| | 4 | Dimn + Simazine | 410g/410g | 5 | 2 | 3 | 1 | 2 | 1 | 2 | 1 | 5 | 3 | 3 |
| | 5 | Methiazol | 280g | 5 | 3 | 5 | 1 | 2 | 1 | 2 | 2 | 5 | 4 | 3 |
| | 6 | Terbufos | 100g | 5 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 5 | 4 | 4 |
| | 7 | Splunkster | 70g | 1 | 5 | 5 | 3 | 1 | 2 | 3 | 3 | 3 | 2 | 3 |
| | 8 | Splunkster + Simazine | 40g/350g | 5 | 5 | 5 | 3 | 1 | 1 | 3 | 3 | 3 | 5 | 4 |
| | 9 | Balance | 100g | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 4 | 5 | 5 | 5 |
| | 10 | Balance + Simazine | 100g/350g | 5 | 5 | 5 | 4 | 4 | 1 | 5 | 5 | 5 | 5 | 5 |
| 4 node 12/07/2011 | 1 | NIL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | Simazine | 350g | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 3 | Methiazol | 280g | 4 | 2 | 4 | 4 | 2 | 4 | 3 | 3 | 4 | 4 | 2 |
| | 4 | Bromobitric | 25g | 1 | 4 | 4 | 4 | 2 | 1 | 3 | 3 | 1 | 1 | 1 |
| | 5 | BroadOptima | 50ml | 4 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 1 | 2 | 3 |
| | 6 | BroadOptima + MCPA Amine | 50ml/50ml | 4 | 4 | 3 | 3 | 1 | 3 | 3 | 3 | 2 | 3 | 3 |
| | 7 | Supper 750WEG | 50g | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 8 | Splunkster sweeter | 70g/0.2% | 2 | 3 | 4 | 4 | 1 | 3 | 2 | 2 | 3 | 2 | 2 |
| | 9 | Raplan sweeter | 45g/0.2% | 1 | 3 | 4 | 4 | 1 | 4 | 3 | 3 | 4 | 2 | 2 |
| | 10 | BauerGold | 2.5L | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| | 11 | Sakura | 10g | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 12 | Proprazine | 15kg | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7 node 23/07/2011 | 1 | NIL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | Lapsometer | 10g/0.1% | 1 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 3 |
| | 3 | Ally sweeter | 7g/0.1% | 1 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 4 |
| | 4 | Endure SC + Update | 50ml/0.5% | 1 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 3 | 3 |
| | 5 | Empar + MCPA Amine | 400ml/50ml | 2 | 5 | 5 | 5 | 2 | 3 | 2 | 2 | 2 | 2 | 2 |
| | 6 | Affinity Force + MCPA Amine | 300ml/50ml | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 3 |
| | 7 | Canolaite + Update | 700ml/0.5% | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 |
| | 8 | Precept + Hantz | 750ml/0% | 5 | 5 | 5 | 5 | 3 | 3 | 5 | 3 | 5 | 4 | 4 |
| | 9 | Venody + Hantz | 670ml/0% | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 |
| | 10 | Flight EC | 720ml | 5 | 5 | 5 | 5 | 2 | 3 | 2 | 2 | 2 | 3 | 3 |
| | 11 | Bauer M | 1 | 4 | 4 | 4 | 4 | 3 | 4 | 5 | 5 | 4 | 3 | 4 |
| | 12 | Interk + Hantz | 600ml/0% | 1 | 5 | 5 | 5 | 3 | 4 | 4 | 3 | 4 | 5 | 3 |
| | 13 | Hammer OD sweeter | 100ml/0.25% | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| | 14 | Crosser sweeter | 500ml/0.25% | 1 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 2 |
| | 15 | Atlanth OD + Hantz | 330ml/0.5% | 1 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 |
| | 16 | Atrazine + Hantz | 333g/0% | 4 | 1 | 3 | 3 | 2 | 3 | 1 | 1 | 1 | 5 | 4 |
| | 17 | Lantrol 600 | 50ml | 1 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 5 | 5 |
| 18 | Stance | 300ml | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | |
| 10 node 10/08/2011 | 1 | NIL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | MCPA Sulfon | 700ml | 4 | 4 | 4 | 4 | 2 | 3 | 4 | 4 | 4 | 1 | 2 |
| | 3 | MCPA Amine | 350ml | 4 | 4 | 4 | 4 | 1 | 3 | 4 | 4 | 4 | 1 | 2 |
| | 4 | Amitic Advance 700 | 12L | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 4 |
| | 5 | 2A-D Ester | 70ml | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 2 |
| 4 node 12/07/2011 | 1 | NIL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | Spraynet | 2L | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 |
| | 3 | Glyphosate | 1 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | |
| | 4 | Glyphosate + LVE 680 | 1.5/50ml | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | |
| | 5 | Glyphosate + Amitic Advance | 1.5/50ml | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | |
| | 6 | Glyphosate + Hammer | 1.5/50ml | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 5 | |
| | 7 | Glyphosate + Cadence | 1/15g | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | |
| | 8 | Glyphosate + Pyrus | 1/400ml | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | |
| | 9 | Glyphosate + Sharpen | 1/10g | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | |
| | 10 | Glyphosate + Valor | 1/30g | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | |
| | 11 | Glyphosate // Spraynet 3DAS | 12L/12L | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | |
| | 12 | Banta | 2.5L | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | |
| 13 | Balance | 2L | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | | |
| 14 | NIL | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |