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AGRONOMY + RESEARCH



RESIDUAL WEED CONTROL IN FIELD PEAS

Terbyne® Pre-emergent Herbicide Trial
Yenda 2013

RESIDUAL WEED CONTROL IN FIELD PEAS

KEY POINTS

- * Summer weeds, such as fleabane and sowthistle, can be in large numbers following field peas and require summer spraying after harvest, which can be costly.
- * The use of residual herbicides at sowing, such as Terbyne®, may save time, effort and money on summer spraying after harvest.
- * All of the chemicals used in this trial showed increased efficacy when they were tank mixed with other chemistry. Terbyne® alone gave some control, but was more effective when tank mixed with either diuron or metribuzin.
- * The efficacy of various pre-emergent chemistry is dependent on soil moisture at various stages of the season. Mixing different herbicides with different water solubility and half life characteristics in this season maximised weed control.

BACKGROUND

Field peas are not a competitive crop, and after harvest it is not uncommon for field pea stubbles to host large numbers of summer weeds, such as fleabane and sowthistle.

Applying a residual herbicide at sowing, such as Terbyne®, may be a viable option that could save on summer spraying after harvesting field peas.

It is important to evaluate if the extra expense at sowing, of applying Terbyne®, is warranted by saving time, effort and money on summer spraying post harvest.

TRIAL DETAILS

A trial was established on 31st May 2013 at Nick Eckermann's, Yenda, in conjunction with Sipcam. The paddock chosen had a history of fleabane and sowthistle, and a 0-10c, soil pH of 5.5 CaCl₂.

The aim of the trial was to compare the residual weed control benefits of the herbicide Terbyne® with other industry standards, when applied as a pre emergent, Incorporated by sowing (IBS), in field peas. Particular emphasis of the trial was on the control of the weeds fleabane and sow thistle.





The trial consisted of ten treatments including:

- 1) Terbyne® (1kg)
- 2) Terbyne® (1kg) + Triflur X® (1.6L)
- 3) Terbyne® (1kg) + Metribuzin 750 (0.18kg)
- 4) Terbyne® (1kg) + Metribuzin 750 (0.18kg) + Triflur X (1.6L)
- 5) Terbyne® (1kg) + Diurion 900 (0.6kg)
- 6) Metribuzin 750 (0.18kg)
- 7) Diuron 900 (0.8kg)
- 8) Spinnaker® (70g)
- 9) Terbyne® (1kg) + Spinnaker® (70g)

10) Triflur X® (1.6L)

The pre-emergent herbicides were boomsprayed on 31st May at 10am with 80 L/ha water rate and with 11002 flat fan nozzles. Environmental conditions at spraying were 18°C temperature, 65% humidity, 9 km/hr winds and 30% cloud cover.

Plots were not replicated, and were 12m x 200m.

Sturt field peas were sown after spraying on 1st June at 100kg/ha with 50kg MAP.

Observations and assessments were carried out throughout the trial. These included crop establishment counts, weed counts, crop phytotoxicity score and a final weed control score.

A summary of these measurements are shown in table 2 in the results section. A visual representation of each treatment is also shown from figures 2 to 11.

Figure 1: The effect of Terbyne® on fleabane (left) vs no broadleaf chemistry (right) on 26th Nov (179 days after spraying).





Weed control scores were used instead of weed counts, as weeds were variable across the plots.

RESULTS AND DISCUSSION

The season was characterised by excellent soil moisture at sowing with a dry middle and end to the season. The paddock yielded well considering the warm dry finish, yielding 1.7t/ha.

Table 1 shows the rainfall received at the trial site in 2013. Rainfall in 2013 was variable during the year. There was average fallow rainfall providing approximately 60cm of subsoil moisture. Soil conditions were moist prior to sowing, and remained moist during early crop growth. Conditions then dried into Spring. Growing season rainfall was 180mm.

Table 1: 2013 Rainfall Figures from “Hillview”, Yenda

Month	Rainfall (mm)
January	0
February	47
March	39
April	1
May	24
June	71
July	34
August	24
September	42
October	9
November	10
*December	11

* up to 20th December

Field Pea Emergence and Crop Phytotoxicity

Field pea establishment counts were taken on 3rd July. These counts are summarised in table 2.

At the early establishment stage of the field peas, there were no visible crop phytotoxicity or plant health differences between all of the treatments, as seen in figures 2 to 11.

The only weed to grow on the site was fleabane, with the plots clean from all other grass and broadleaf weed species. There were no grass weeds as 500mL Status + Uptake was applied in July.

Weed Control

A final weed control score was taken on 3rd December. A summary of these scores is shown in table 2.

Metribuzin had a big effect on fleabane, with any plants surviving being severely stunted and having very little vigour

Terbyne® alone gave some control, but was by far more effective when tank mixed with either diuron or metribuzin.

All of the herbicides used in this trial showed increased efficacy when they were tank mixed with other chemistry. This is shown in table 2.

An explanation for this could be the water solubility of different chemistry. Due to the dry end of growing season the top 10cm of soil was dry during the period when fleabane was emerging, so any of the herbicides that had low water solubility or lessor half life had a very small window to control weeds.

Weed control for early germinating winter weeds was generally very good but the big differences were seen in fleabane control, which mostly germinated in early spring. This may be related to the longevity of the different types of chemistry in the soil as well as the different water solubilities.

Table 2: Average Field pea plant population, taken 3rd July, and weed control scores, taken 3rd December.

TREATMENT	Average Fieldpea population (plants /m2)	Weed control score (0 to 10, 10 = full weed control)
1. Terbyne® (1kg)	40	7
2. Terbyne® (1kg) + Triflur X® (1.6L)	45	6
3. Terbyne® (1kg) + Metribuzin 750 (0.18kg)	37	9
4. Terbyne® (1kg) + Metribuzin 750 (0.18kg) + Triflur X® (1.6L)	40	9
5. Terbyne® (1kg) + Diuron 900 (0.6kg)	44	8
6. Metribuzin 750 (0.18kg)	41	8
7. Diuron 900 (0.8kg)	43	6
8. Spinnaker® (70g)	35	5
9. Terbyne® (1kg) + Spinnaker® (70g)	43	9
10. Triflur X® (1.6L)	38	5

A visual representation of the average plant population, taken 3rd July, and weed control scores, taken 3rd December, for each treatment is shown from figures 2 to 11.

Figure 2: Field pea plant population and weed control scores for Terbyne®.



Figure 3: Field pea plant population and weed control scores for Terbyne® and Triflur X®.



Figure 4: Field pea plant population and weed control scores for Terbyne®. and Metribuzin.



Figure 5: Field pea plant population and weed control scores for Terbyne®, Metribuzin & Triflur X®.



Figure 6: Field pea plant population and weed control scores for Terbyne® and Diuron.



Figure 7: Field pea plant population and weed control scores for Metribuzin.



Figure 8: Field pea plant population and weed control scores for Diuron.



Figure 9: Field pea plant population and weed control scores for Spinnaker®.



Figure 10: Field pea plant population and weed control scores for Terbyne® and Spinnaker®.



Figure 11: Field pea plant population and weed control scores for Triflur X®.





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