

Wild radish control in wheat

The aim of this trial was to investigate some existing and new products for the control of wild radish in wheat.

Summary

In many areas wild radish control requires two applications of herbicide. The first is early in the season to reduce the competition of the radish and the second is late in the season to reduce seed set. The choice of product required to reduce competition should be based on cost and potential for crop damage. For the late application to reduce seed set, 2,4D Amine is the preferred product.

Background

Wild radish is spreading from southern areas to more northern areas in the Mallee. Radish can have serious implications on farm management by limiting crop choice (it is difficult to control radish in crops such as fababeans) and through the cost involved in controlling radish in crop.

Methods

Prior to sowing, the site was sprayed with RoundUpMax at 1.5L/ha. On July 3, Silverstar wheat was sown at 80kg/ha, with banded Mallee Mix 1 at 90kg/ha and Urea at 80/kg/ha. Only one treatment was applied Post Sow Pre-emergent (Diuron 1L/ha), all other treatments were applied on August 28, when the crop was at the 4 to 5 leaf stage. At the time of spraying the wild radish was between 8 and 25cm in diameter. Conditions at spraying were excellent with a moist topsoil, a slight southerly breeze and a temperature of 16°C.

Treatments were replicated four times. The level of radish in the plots was assessed immediately prior to spraying and 24 days post application. Radish was assessed in four 0.1m² quadrats per plot. Damage scores to radish and wheat were attributed according to a scale of 1 to 9 (1 = no effect, 9 = dead).

Results

All products resulted in a severe damage to the radish. Some damage was observed on the wheat after the products were applied but all crops grew out of the symptoms within 6 weeks of application. *Comment on yield*

Treatment	Status#	Cost (\$/ha)	Damage score radish*	Damage score wheat*	Yield (t/ha)
control			1.0	1.0	
Diuron 0.4L+ MCPA500 0.3L	R	5.40	5.4	1.4	
Tigrex 0.75L	R	14.20	8.4	2.8	
Paragon 0.37L	R		8.4	2.3	
Hussar 150g + w	R		6.3	1.4	
Diuron 1L PSPE then Glean 25g+ oil	R	13.60	8.6	1.2	
Affinity 60g + MCPA500 0.5L	R		9.0	1.2	
Eclipse 7g + MCPA LVE 0.5L + w	R	12.70	8.1	1.2	
Jaguar 0.3L + MCPA LVE 0.3L	R	9.30	8.7	2.6	
Significant difference LSD=0.05			0.6	0.7	

R = Registered; NR = Not Registered

* Damage score 1 = no affect, 5 = affect visible reduced growth, 9 = dead

Interpretation

Radish is highly competitive and good early control is required to minimise the potential for loss in yield potential. Changes in the population of different radish types has resulted in some types germinating early and others later in the season – this makes effective control for competition and seed set more difficult.

Products used in the trial which achieved a radish damage score of 8 or more were highly affective in reducing the competitive affect of the radish. Only two treatments did not achieve the required damage score of 8: Diuron plus MCPA500 and Hussar. The rate of Hussar applied was below the recommended rate of 200g/ha for radish. However both of these treatments still had a significant effect in reducing the growth of the radish. All the products were relatively 'soft' on the wheat with only two treatments causing some crop effect: Tigrex and Jaguar plus MCPA LVE. Within 6 weeks of treatment application the crop had grown out of the effect of the herbicide.

Comment on yield

None of the treatments had sufficient residual effect and the whole site was sprayed with 2,4D Amine at 1.5L/ha just pre-flowering of the wheat to ensure no late germinating radish would set seed.

Commercial Practice

In many areas, wild radish has become a very common weed with a large impact on crop yields through competition and a reduction in crop choice. In the past a single application of a herbicide was required to control radish to low levels. However, now that the radish populations have changed to include early, mid and late season germinating types it is essential to reduce early competition and reduce seed set late in the season.

The choice of product to use early in the season to reduce the competition from radish is a matter of efficacy, cost and risk. The products used in this trial all had good to excellent control of radish early in the season. There is a wide variation in cost between the different treatments (\$ to \$ /ha). Some of the products can cause more crop damage than was experienced in these trials – for example: Diuron can cause crop damage especially when used on crops grown in light soils (although at these low rates this is only a low risk); and Hussar Glean have a residual effect on pulses and canola the following year. To reduce seed set late in the season the product of choice is 2,4D Amine.

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