

Trifluralin Rates and Water Rates Demonstration

The aim of this demonstration was to investigate optimum safe trifluralin rates and water rates in wheat on canola stubble.

Summary

A thorough understanding of trifluralin application techniques can be the difference between poor and excellent ryegrass control. It can also help achieve target plant establishment. This demonstration showed an increase in ryegrass control when up to 3L/ha trifluralin was applied. Rates above 3L/ha trifluralin did not result in additional ryegrass control. The influence of water rates was minimal due to the lack of stubble residue which shows that water rates of 50L/ha are acceptable in situations where there is very little residue from the previous crop.

Background

Reports of trifluralin damaged seedlings are common in most seasons; the cause of this is often put down to poor seeding depth or too much product for a particular crop type.

It is now common to apply trifluralin directly in front of the seeder and incorporate the herbicide via the soil throw from this operation. The level of soil throw from the seeder can have a big influence on crop damage. If there is too much soil throw the chemical can be thrown onto the adjacent row causing trifluralin to be in direct contact with the seed resulting in crop damage.

Method and Results

Two trials were conducted looking at: different rates of trifluralin incorporated by sowing and different water rates to carry 1.6L/ha trifluralin

Location:	St Arnaud
Replications:	1
Variety:	Annuello
Sowing Date:	24 June 2005
Seeding Density:	170 plants/m ²
Seeding operation:	No Till into a standing canola stubble (50% ground cover)
Seeding depth:	5cm

Table 1: The influence of Trifluralin rates and water rates on wheat yield and ryegrass density.

Trifluralin	Water rate	Timing	Yield	Ryegrass heads /m2 at flowering
1L/ha	80L/ha	IBS	2.77	50
2L/ha	80L/ha	IBS	2.89	30
3L/ha	80L/ha	IBS	2.80	3
4L/ha	80L/ha	IBS	2.87	3
control			2.89	30
1.6L/ha	49L/ha	IBS	2.82	30
1.6L/ha	78L/ha	IBS	2.67	30
1.6L/ha	111L/ha	IBS	2.58	53
1.6L/ha	156L/ha	IBS	2.53	56
control			2.48	116

NOTE: The use of trifluralin at more than 2L/ha is not registered in wheat and was used in this trial only to demonstrate the effect on ryegrass control. When using any trifluralin herbicides always follow the instruction on the registration label.

Interpretation

This demonstration showed a large reduction in ryegrass numbers between 1L/ha and 2L/ha and even further reduction when rates were increased from 2L/ha and 3L/ha. There was no reduction in ryegrass numbers when trifluralin rates were lifted from 3L/ha to 4L/ha. This indicates that by increasing trifluralin rates above 3L/ha does not effectively increase ryegrass control. There is data from Western Australian trials indicating a similar result with trifluralin efficacy being capped at 3L/ha and rates above this were not worthwhile (Burgess pers.comm 2004).

The work carried out investigating the influence of water rates showed little effect on ryegrass numbers. This is probably because the trial was carried out on canola stubble with much less residue than cereal stubble. In a cereal situation the effect of increasing water rates is much more likely to result in better ryegrass control.

Because this demonstration was not replicated, statistical analysis could not be carried out.

Commercial Practice

Using trifluralin rates above 2L/ha in wheat is off label and not recommended as it can potentially cause significant yield loss, the aim of this demonstration was to show how these high rates influence ryegrass density. When using trifluralin in situations where stubble residues are low such as canola stubble it is unlikely that high water rates would be worthwhile.

Trifluralin is a very volatile herbicide and losses before it hits the ground can be significant, therefore water rates must be kept up where there is a high Delta T.

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