

# Trifluralin is King, Long Live the King

**Aim:** To evaluate the efficacy of some of the common pre-emergent herbicide mixtures for ryegrass control in wheat.

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**Location:** Coorow

**Background:** Many novel herbicide mixtures are currently being used for ryegrass control in wheat (as well as other crops) due to the ryegrass developing resistance to many commonly used herbicides. Some of these mixtures are based on trial data while others have been developed on a more theoretical basis. This trial was designed, with the help of the farmers and agribusiness of Coorow.

## Trial Details:

Plot size and replication	30m x 3 m * 3 replicates
Soil type	Yellow loamy sand
Sowing date	14 <sup>th</sup> May 2003
Seeding rate	60 kg/ha Clearfield Stl wheat
Paddock rotation	2002 = Wheat, 2001 = Lupins
Herbicides	14 <sup>th</sup> May 2003: Knockdown: Spray.Seed 2 L/ha @ 90 L water /ha 14 <sup>th</sup> May 2003: Treatments applied with 90 L water /ha in ideal spraying conditions. Light wind from NE, approx. 22 degrees C. Clear blue skies. Herbicides used: Trifluralin 480 g/L, Yield 250 EC (Oryzalin 125 g/L + trifluralin 125 g/L), Dual Gold® (S-Metolachlor 960 g/L), Logran (Triasulfuron 750 g/Kg), Diuron 900 g/Kg, Avadex Xtra (Triallate 500 g/L)

## Results:

Table 2: Ryegrass density (plants / m<sup>2</sup>), % ryegrass control and wheat yield (kg/ha) for a range of pre-emergent herbicide treatments.

		ryegrass / m <sup>2</sup>	% ryegrass control	Yield Kg/ha
1	Nil	445	0	1441
2	Trifluralin 1.2 L/ha (576 gai)	72	84	2669
3	Trifluralin 1.6 L/ha (768 gai)	98	78	2907
4	Trifluralin 1.6 L/ha + Logran 35 g/ha	66	85	2664
5	<b>Trifluralin 1.6 L/ha + Diuron 250 g/ha</b>	93	79	2505
6	Trifluralin 1.6 L/ha + Diuron 400 g/ha	95	79	2550
7	Logran 35 g/ha	505	0	1347
8	Diuron 250 g/ha	405	9	1286
9	Product X 275 mL/ha	84	82	2179
10	Trifluralin 1.2 L/ha + Avadex Xtra 500 mL/ha + Dual Gold 250 mL/ha	98	78	1917
11	Trifluralin 1.2 L/ha + Avadex Xtra 500 mL/ha	73	84	2679
12	Trifluralin 1.2 L/ha + Avadex Xtra 800 mL/ha	74	84	2569
13	Yield 250 SC 2.3 L/ha (575 gai)	58	87	2780
15	Dual Gold 500 mL + Diuron 250 g/ha	286	36	1279
16	Nil	445	0	1441
	LSD (p < 0.05)	192	43	643

There was no significant difference in wheat emergence between treatments.

There was no significant difference in wheat screenings between treatments.

## Summary:

- Trifluralin appears to be the best pre-emergent ryegrass herbicide for wheat. All herbicide mixtures containing trifluralin gave highest yields along with the best ryegrass control. There may be a temptation for growers to use only trifluralin for ryegrass control. This will undoubtedly lead to its demise as ryegrass develops resistance to this herbicide. As for other herbicides, measures should be taken to maximise the life of this herbicide.

- Many growers have been adding low rates of Diuron to Trifluralin with the aim of improving ryegrass control, particularly in the furrow. This trial demonstrates that Diuron is of little additional benefit.
- The ryegrass at this site was entirely Group B (ie. Logran®) resistant. The addition of Logran® to Trifluralin gave no additional ryegrass control.
- Product X shows some promise as a ryegrass herbicide, however, this trial raises some concerns of crop safety with this product. The yield of Product X treatments was significantly lower than Trifluralin 1.6 L/ha despite achieving similar weed control. Product X plots demonstrated a minor reduction in crop vigour when assessed visually at head emergence of the crop.
- Dual Gold® appears to have reduced wheat yield while achieving poor ryegrass control. The addition of 250g/ha of Dual Gold® to the Trifluralin + Avadex Xtra® mixture appears to have reduced crop yield without improving ryegrass control. Dual Gold® is registered for the suppression of ryegrass in Oats and Barley at the 375 to 500 mL/ha rate applied PSPE to a level sown, moist seed bed.
- Yield 250 EC® shows some promise. This herbicide has not been available for several years but is now back on the market. Yield® gave excellent ryegrass control with excellent crop safety. The use of this product will come down to its cost effectiveness and its effect on other grass weeds.
- A treatment with the herbicide Stomp® was included in this trial. However, this data point has been removed, as there was concern over the quality of the product used to conduct the trial.