

Pre-Emergent Herbicide Control of Grasses in Barley

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Aim

To compare the efficacy and crop safety of different herbicide options for control of grasses in barley.

Background

Control of grass weeds in barley is challenging, particularly pre-emergent control of brome grass which due to its staggered germination. In this trial we look to evaluate the best treatments for control of grass weeds. The site contained predominantly ryegrass and brome grass.

In addition to harvesting of this trial, quadrat sampling of each treatment replicate was conducted on 5/11/13. This involved randomly sampling each treatment replicate 5 times using a 33 x 33 cm quadrat and recording the weed plant count in each quadrat.

Treatments

1. Sakura @ 118 g/ha
2. Treflan @ 2.5 L/ha
3. Boxer Gold @ 2.5 L/ha
4. Treflan @ 2 L/ha + Metribuzin @ 120 g/ha
5. Treflan @ 2 L/ha + Avadex @ 2 L/ha

Trial Details

Property	Wongan Hills Research Station
Plot size & replication	25m x 10m x 4 replications
Soil type	Yellow/white sand
Soil pH (CaCl ₂)	0-10cm: 7.2 10-20cm: 4.7
EC (dS/m)	0-10cm: 0.048 10-20cm: 0.03
Sowing date	30/05/13
Seeding rate	75 kg/ha Hindmarsh
Paddock rotation	2010: wheat, 2011: wheat, 2012: wheat
Fertiliser	30/05/13: 80 kg/ha Macropro Plus
Herbicides	30/01/13: 2 L/ha Roundup, 600 mL/ha Ester, 0.5% Li700
	11/04/13: 1.5 L/ha Roundup, 600 mL/ha Ester, 0.5% Li700
	30/05/13: As per treatments below
	28/06/13: 2 L/ha Spray.Seed, 670 mL/ha Velocity, 1% Hasten
Growing Season Rainfall	256mm

Results

Table 1: Yield, grain quality and weed densities for 5 separate herbicide treatments in Hindmarsh barley grown in 2013 at the DAFWA Research Station, Wongan Hills. A probability value >0.05, indicates that means are not significantly different.

Herbicide Mix	Crop Yield (t/ha)	Protein (%)	Hectolitre Weight (kg/hL)	Screenings (%)	Weed Density (Plants/m ²)
Treflan	2.77	10.28	68.81	15.53	7.81
Sakura	2.71	10.83	67.90	16.65	11.48
Treflan + Metribuzin	2.59	10.10	69.03	15.81	4.13
Treflan + Avadex	2.55	10.03	68.26	15.09	1.38
Boxer Gold	2.38	10.05	69.40	12.68	4.13
Probability	0.395				0.190
LSD (p=0.05)	0.44				8.95
CV%	11.10				125.90

Comments

- Seasonal conditions reduced the potential impacts of the pre-emergent herbicides evaluated in this trial with sowing taking place under dry conditions. The top 5 cm was dry with little follow up moisture although there was enough to get the crop out of the ground. The effects of pre-emergent herbicides are generally more pronounced under very moist conditions particularly under intense heavy rain events at seeding or when the top soil is saturated for an extended period at plant establishment.
- In this trial neither yield or weed density were significantly different between the herbicide treatments.
- Weed plant densities were extremely variable within each treatment so caution should be taken when comparing grass weed efficacy in this trial.

Disclaimer: At the time of implementing this trial an application for the registration of Sakura for use in barley had been made. The APVMA recently declined this application. The Liebe Group does not condone the use of non-registered products and this technical document should in no way be interpreted as a herbicide recommendation for grass weed control in barley.

Acknowledgements

Thanks to Bruce and the staff at the Wongan Hills Research Station for sowing and maintain the trial.

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