

# Comparison of pre-emergent herbicides in control of problem weeds in wheat – North-west Coast

Don Site – Botanical Resources Australia, Forth Rd. Don

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## Key Messages

- Utilising a pre-emergent herbicide of any kind significantly reduced broadleaf weed establishment overall
- Terrain and Terrain + Avadex treatments resulted in highest control of fumitory and cleavers
- No significant difference between pre-emergent herbicides on grass and radish control
- There was no significant influence of pre-emergent herbicide on yield
- Untreated and Sakura treated plots had significantly lower protein levels

## Acknowledgements

Thanks must go to Botanical Resources Australia (BRA Ltd) for provision of the trial site and housing of equipment.

## Trial Design

This trial was designed to compare standard and potential pre-emergent herbicides for efficacy on pinkweed, grass, radish and other broadleaf weeds common to the North-west Coast.

7 Treatments, replicated 4 times.

**Table 1.** Treatment list.

Trt No	Name	Rate (per ha)
1	Untreated control	Nil
2	Sakura	118 g
3	Boxer Gold	2.5 L
4	Terrain	120 g
5	Terrain + Avadex Xtend	120 g + 2.7 L
6	Avadex Xtend	2.7 L
7	Boxer Gold	1.75 lb 0.75L

Trial was sown with a cone seeder on 18/06/2015, a little later than the ideal sowing time, but still quite a common timing for the area. Other inputs are listed in Table 2 below.

**Table 2.** Agronomic inputs.

	Type	Rate	Date
Fertiliser	Urea	100	29 Aug 2014
	Urea	100	22 Sep 2014
Herbicide	Precept 150	1.5 L	27 Aug 2014
	Bromicide 200	1 L	27 Aug 2014
	Axial	300 mL	22 Sep 2014
	Adigor	500 mL	22 Sep 2014
Fungicide	Tilt Xtra	500 mL	8 Sep 2014
	Prosaro	300 mL	22 Sep 2014
	cogito	250	17 Oct 2014

## Results

### Weed control

Using a pre-emergent herbicide did significantly reduce weed numbers compared to the untreated control at this site, although there was no significant difference between chemical treatments for radish, grass or Marshmallow control. Using Terrain and Terrain + Avadex resulted in the highest rates of control of Fumitory and cleavers at this site.

**Table 3.** Weed control results.

Treatment	% Fumitory control		Radish pl/m2	Grass pl/m2		Marshmallow p/m2	*Cleavers pl/m2	
Untreated	0	d	2 n	19.75	a	4.25	n	29 a
Sakura	91.25	ab	1.75 n	0.25	b	2.5	n	13.25 ab
Boxer Gold	90	ab	1 n	0.5	b	2.25	n	14.5 ab
Terrain	96.25	a	1.75 n	0.75	b	1.25	n	4.25 bc
Terrain + Avadex	98.5	a	1.75 n	0	b	0	n	1.5 c
Avadex Xtend	41.25	c	0.5 n	0.5	b	0.75	n	20.25 a
Boxer Gold Split	76.25	b	2.5 n	0	b	0	n	8.5 abc

Means followed by same letter do not significantly differ.

LSD P=.05	18.895		2.334	5.192		4.181		*logarithm used
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### Yield

**Table 4.** Yield and grain quality.

Treatment	Yield t/ha		Protein %
Untreated	8.41	n	8.65 b
Sakura	8.42	n	8.55 b
Boxer Gold	8.53	n	9.1 a
Terrain	8.51	n	9.18 a
Terrain + Avadex	8.47	n	9.25 a
Avadex Xtend	8.65	n	9.13 a
Boxer Gold Split	8.43	n	9.28 a
LSD P=0.05			0.419

Means followed by same letter do not significantly differ.

Table 4 displays the yield and grain quality for each treatment. There was no significant difference in yield between treatments, suggesting that although the application of pre-emergent herbicide reduced the numbers of weeds overall, the untreated control plots grew well enough to reach the average yield at this site. However the lower grain protein levels in the untreated and Sakura treatment plots may indicate that broadleaf weeds present at the end of the season successfully competed for nitrogen uptake.

### Conclusion

Although there was no significant yield response to reduced weed burden from a pre-emergent herbicide application, the reduction in numbers of problem weeds such as cleavers (or bedstraw) would make it a useful tool in controlling weed seed burdens for future crops.