

Brome Grass Management



Government of South Australia
Northern and Yorke Natural
Resources Management Board

AIM: To assess both pre-emergent and post-emergent herbicides in controlling Brome Grass

CROP: Imi-tolerant Wheat and Barley

OUTCOMES DESIRED: To find the pre-emergent that gives the best control of Brome Grass

Table 1. Summary of Barley weed control assessments.

Trt. No.	Treatment /ha.	*ARG plants /m ² 7 th June	*Brome plants /m ² 7 th June	ARG final control 1-10 7 th Oct	Brome final control 1-10 7 th Oct
1	UTC	50 d	22 b	4.8 c	6.8 c
2	Boxer Gold @ 2500ml	6 ab	10 ab	1.5 a	1.8 ab
3	Sakura @ 118gms	10 ab	4 a	1.3 a	1.5 ab
4	Sakura + Triflur @ 118gms + 1000ml	13 abc	12 ab	1.5 a	2.3 ab
5	Sakura + Avadex @ 118gms + 1600ml	13 abc	13 ab	1.8 a	2.8 b
6	Triflur + Avadex @ 2000 + 2000ml	12 abc	16 ab	3.3 b	5.5 c
7	Triflur + Metribuzin @ 1500 + 200gms f.b. Metribuzin @180gms (Z21)	8 ab	13 a b	1.0 a	1.5 ab
8	Triflur @ 1500ml f.b Intervix @ 750ml	25 bc	19 ab	1.0 a	1.0 a
9	Triflur @ 1500ml f.b Metrib'zn @ 360gms	29 c	16 a	1.3 a	1.0 a
Co-efficient of variation		85%	95%	58%	52%
LSD 5%		18	15	1.3	1.5

Table 2. Summary of Barley yield assessments.

Trt. No.	Treatment /ha.	Yield T/ha	Yield % of T6
1	UTC	1.74 c	108
2	Boxer Gold @ 2500ml	1.80 c	111
3	Sakura @ 118gms	1.77 c	109
4	Sakura + Triflur @ 118gms + 1000ml	2.05 ab	127
5	Sakura + Avadex @ 118gms + 1600ml	2.04 ab	126
6	Triflur + Avadex @ 2000 + 2000ml	1.61 c	100
7	Triflur + Metribuzin @ 1500 + 200gms f.b. Metribuzin @180gms (Z21)	1.83 bc	114
8	Triflur @ 1500ml f.b Intervix @ 750ml	2.11 a	131
9	Triflur @ 1500ml f.b Metrib'zn @ 360gms	2.11 a	131
Co-efficient of variation		11%	
LSD 5%		0.23	

- Greyed boxed indicated treatments not registered and included for trial purposes only
- Means followed by the same letter do not differ significantly.
- *Post emergent treatments were applied on the same day as the brome grass counts were taken, thus no effect was registered at this point in time.
- f.b. = followed by.

Barley. The growing season conditions were reasonably tough for this trial with average winter rainfall and a dry spring. The levels of Brome Grass at the site were less than expected and thus there is a fair bit of variation across the trial with the weed control assessments. Stubble cover on the soil at the site at time of pre-plant herbicide application was low following a lentil crop in 2011. Generally, the yield results were in line with the best treatments for weed control giving the best yield results.

In this season, Sakura performed well for controlling both Brome Grass and Annual Ryegrass. As has been observed at other sites, Sakura may not necessarily be the best treatment in the first 4 weeks after planting, but the residual nature of the product allows it to kill and suppress weeds long after other products have degraded. This trial highlights the benefits of mixing Sakura with a product like Avadex to increase efficacy.

Sakura (and all other pre-plant herbicides) can often struggle to control Brome Grass when it emerges from various depths in the soil profile as the weeds can grow through the concentrated layer of herbicide closer to the surface. However, in this trial, it would appear that most Brome Grass that germinated was in close proximity to the herbicide as weed control numbers were very good.

The standout treatments in this trial were the use of Metribuzin and Intervix as foliar treatments. Metribuzin (Group C) caused minimal damage to the barley seedlings with only slight tipping on the newest leaves present following application. In the final assessments done on the 7th of October, the Metribuzin applied at 360gms at early tillering had equal best Brome Grass control which transpired in the equal best yield.

Intervix (Group B) was applied at when growing conditions were still relatively warm and at a crop stage where all target weeds were susceptible. Both Brome and Ryegrass were controlled well with Intervix.

Table 3. Summary of Wheat weed control assessments.

Trt. No.	Treatment /ha.	*ARG plants /m ² 7 th June	*Brome plants /m ² 7 th June	ARG final control 1-10 7 th Oct	Brome final control 1-10 7 th Oct
1	UTC	73 b	65 b	8.3 c	8.3 d
2	Boxer Gold @ 2500ml	17 a	23 a	4.0 a	4.8 b
3	Sakura @ 118gms	16 a	12 a	1.8 a	2.0 a
4	Sakura + Triflur @ 118gms + 1000ml	9 a	14 a	2.0 a	1.3 a
5	Sakura + Avadex @ 118gms + 1600ml	13 a	12 a	2.0 a	1.8 a
6	Triflur + Avadex @ 2000 + 2000ml	19 a	21 a	4.8 b	6.0 c
7	Triflur @ 1500ml f.b Crusader @ 500ml	54 b	12 a	5.0 b	3.0 ab
8	Triflur @ 1500ml f.b Atlantis @ 330ml	59 b	21 a	5.3 b	6.0 c
9	Triflur @ 1500ml f.b Intervix @ 750ml	54 b	23 a	2.8 a	1.5 a
Co-efficient of variation		82%	142%	45%	56%
LSD 5%		27	23	1.8	2.1

Table 4. Summary of wheat yield assessments.

Trt. No.	Treatment /ha.	Yield T/ha	Yield % of T6
1	UTC	1.67 c	95
2	Boxer Gold @ 2500ml	1.95 ab	110
3	Sakura @ 118gms	2.06 a	117
4	Sakura + Triflur @ 118gms + 1000ml	1.98 a	112
5	Sakura + Avadex @ 118gms + 1600ml	2.09 a	119
6	Triflur + Avadex @ 2000 + 2000ml	1.77 bc	100
7	Triflur @ 1500ml f.b Crusader @ 500ml	1.77 bc	100
8	Triflur @ 1500ml f.b Atlantis @ 330ml	1.99 a	113
9	Triflur @ 1500ml f.b Intervix @ 750ml	1.97 ab	112
Co-efficient of variation		9.4%	
LSD 5%		0.2	

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- Means followed by the same letter do not differ significantly.
- *Post emergent treatments were applied on the same day as the brome grass counts were taken, thus no effect was registered at this point in time.
- f.b. = followed by

Wheat. Similar trends were observed in the wheat as they were in the barley; Sakura looks to be the best pre-plant herbicide for suppressing Brome Grass and when used in a mix with Avadex or Trifluralin, results are generally better.

Crusader and Atlantis did not appear to have as much effect on Brome Grass control as seen in other seasons. This is possibly due to cold conditions post application which may have an effect on plant uptake and ultimately weed kill.

Take Home Messages:

- Barley is much better at competing against weeds in this environment compared to wheat.
- Brome Grass had significant impact on crop yield due to soil moisture and nutrition competition.
- Pre-plant herbicides do have some effect on suppressing Brome Grass, however, as it germinates readily from depth, those that rely on root uptake have limited effect.
- Sakura, showed the best results for Brome Grass suppression compared to other pre-plant herbicides due to longer residual.
- Conventional incorporation (work, spray, sow, and harrow) compared to single pass operations will likely result in a better control of Brome Grass due to a broader herbicide band, however this is an inferior planting system for many other reasons.
- In the absence of Group B resistant Brome Grass, Crusader, Intervix & Atlantis worked well for controlling Brome Grass when used in accordance with the label.
- Herbicide group rotation and use of mechanical systems (hay, chaff cart, green manure, and autumn tickle amongst others) will all help in keeping Brome Grass numbers at manageable levels.



Top left Untreated Wheat

Top Right Trifluralin + Avadex Xtra

Bottom Left Sakura