

3.5.2 Evaluation of rates of Sakura® 850 WG, for the pre-emergent control of ryegrass (*Lolium* sp.) in wheat - Inverleigh & Lake Bolac, Vic

Location:

Inverleigh & Lake Bolac Research Sites.

Researcher: SFS

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Background/Aim:

Sakura® is a new pre-emergent herbicide to be launched by Bayer CropScience in 2012. Sakura is a different mode of action to trifluralin and is planned to be registered for annual ryegrass, barley grass, toadrush, silver grass and annual phalaris control in wheat (not durum), barley and triticale.

The aim of this trial is to:

- To demonstrate the efficacy of Sakura against ryegrass in wheat at two locations.
- To compare Sakura 850 WG with Triflur Xcel, Stomp, Boxer Gold and SAKURA 850WG with tank mix partners.

Summary of findings:
Weed Effects

- The nil herbicide treatment had significantly higher numbers of ryegrass plants than other treatments. The treatments with the least ryegrass plants were Sakura, Sakura + Avadex Xtra, and Sakura & TriflurX.

Yield & Quality

- The mean yield for the Lake Bolac Trial was 6.34T/Ha and 8.2T/ha at the Inverleigh site for 2010.
- The herbicide treated plots averaged 6.4T/ha at Lake Bolac and 8.3T/ha at Inverleigh, which is significantly higher than the no herbicide treatment.
- There is an inverse relationship between the number of ryegrass plants present in the plot and the yield.

Treatments:

Inverleigh & Lake Bolac

Treatment #	Treatment	Dosage	
1	Untreated		
2	Triflur X	2L/ha	IBS
3	Triflur X + Avadex Xtra	1.5 L/ha + 1.6 L/ha	IBS
4	Boxer Gold	2.5 L/ha	IBS
5	Boxer Gold	5 L/ha	IBS
6	Sakura 850WG	118 g/ha	IBS
7	Sakura 850WG	118 g/ha	PSPE
8	Sakura 850WG	238g/ha	IBS
9	Sakura 850 WG + Avadex Xtra	118g/ha & 1L/ha	IBS
10	Sakura 850WG + Triflur X	118g/ha & 1.0L/ha	IBS
11	Boxer Gold	2.5L/ha	PSPE
12	Boxer Gold	2.5L/ha	GS14
13	Stomp 330	1.8L/ha	IBS
14	Boxer Gold & Stomp	2.5L/ha & 1.8L/ha	IBS

Trial Site Details:
Soil Description

	Inverleigh	Lake Bolac
Texture:	Clay Loam 0-10 cm, Heavier clay below	Clay Loam 0-10 cm, Heavier clay below

Rotation

	Inverleigh	Lake Bolac
Previous Crops	Year	
Canola	2009	2009
Peas	2008	Wheat 2008

Crop Information

	Inverleigh	Lake Bolac
Crop:	Cultivar:	Cultivar
Wheat (<i>Triticum</i>)		
Ryegrass was hand applied prior to sowing	Beaufort	Beaufort

Experimental Design - Both Lake Bolac and Inverleigh:

Study Design:	Randomised Complete Block
Replications:	4
Plot Width:	1.45 m
Plot Length:	12 m

Sowing and Maintenance:***Sowing Details***

	Inverleigh	Lake Bolac
Sowing Date:	7 th June	23 rd June
Harvest Date:		24 th January
Tillage Type:	No till sown knife points	No till sown knife points
Seed Bed:	Raised Beds	Flat
Soil Moisture:	Moist at sowing	Moist at sowing
Sowing Rate:	69 kg/ha	69kg/ha
Sowing Depth:	25 mm	25 mm
Row Spacing:	18.125 cm	18.125cm

Crop Nutrition

Date-Inverleigh	Product	Rate	Lake Bolac	Product	Rate
7 th June	MAP	100 kg/ha	23 rd June	MAP	100kg/ha
27 th August	Nitrogen (Easy N)	70kg/ha	24 th September	Nitrohen (Urea)	70kg N/ha

Crop Protection: Inverleigh

Date:	Product	Rate
7 th June	IBS Herbicides (see treatment list)	As per protocol
9 th July	Post Emergent Herbicides (see trt list)	As per protocol
7 th September	Precept Hasten	1.0L/ha 1% v/v
7 th September & 1 st October	Prosaro Hasten	0.2L/ha 1%

Crop Protection: Lake Bolac

Date:	Product	Rate	Notes
23 rd June	IBS Herbicides (see treatment list)	As per protocol	
7 th September	Post Emergent Herbicides (see trt list)	As per protocol	Applied at GS 24
29 th September	Prosaro Adigor	0.15L/ha 0.5% v/v	

Assessment Technique

Crop Effects	Assess crop growth after sowing and at two weekly intervals thereafter if necessary and until effects are negligible.
Crop Biomass Rating	Crop Biomass was rated either + or – from the site average. i.e Untreated = 110% of site mean
Weed Effects	Visually assess weed control as a percentage of untreated Weed count
Yield and Grain Quality	Harvest whole plot

Results & Discussion-Inverleigh

Crop Effects:

All plots were assessed for biomass rating after herbicide application and sowing. Plots were scored at + or – 100% compared to the site average. Plots treated with Triflur X at 2.0L/ha (trt 2) and Boxer Gold (2.5L/ha) with Stomp (1.8L/ha) (trt 14) demonstrated significantly poorer biomass at 42 days after sowing. All other treatments demonstrated a biomass rating above 90%. No visual difference in biomass was observed at 80 days after sowing.

Weed Effects

Weed emergence was assessed for each treatment, assessing the number of weeds per square meter. Figure 2 illustrates that the no herbicide treatment (trt 1) had a significantly greater number of weeds present compared to the treated plots. High weed pressure was observed in the Boxer Gold (2.5L/ha - PSPE) and Stomp (1.8L/ha - IBS) treatments. All Sakura treatments, irrespective of rate or timing, demonstrated excellent weed control.

Results and discussion-Lake Bolac:

Crop Effects

All plots were assessed for biomass rating after herbicide application and sowing. Plots were scored at + or – 100% compared to the site average. No statistical difference was observed between treatments, however it can be said that the PSPE application of Boxer Gold (trt 11), Boxer Gold at 5 L/ha (trt 5) and Triflur X at 2 L/ha (trt 2) showed the greatest reduction in crop biomass (Figure 3).

Weed Effects

Weed emergence was assessed for each treatment, rating the treatment from 0-100 where weeds were present. Figure 2 illustrates that the no herbicide treatment (trt 1) and the PSPE treatment of Boxer Gold (11) had significantly reduce weed control compared to the other herbicide treatments. All Sakura treatments, irrespective of rate or timing, demonstrated weed control greater than 90%.

Figure 1: Biomass rating of crop canopy.

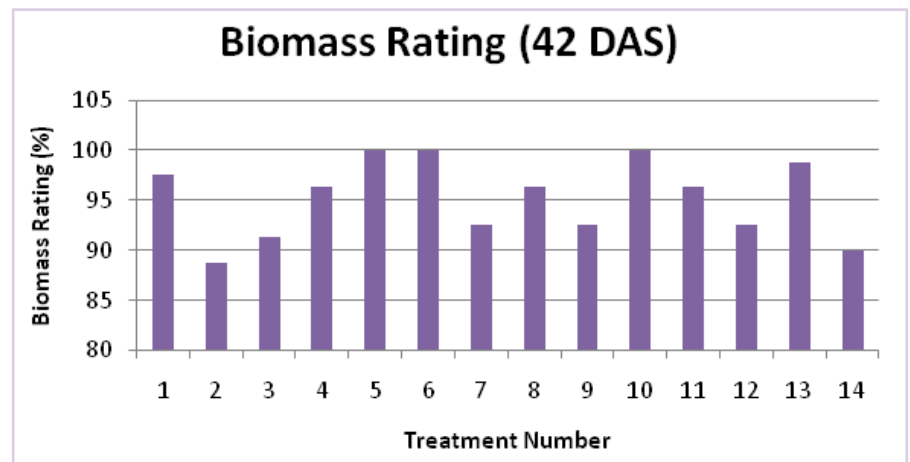


Figure 2: Weed assessment of each herbicide treatment.

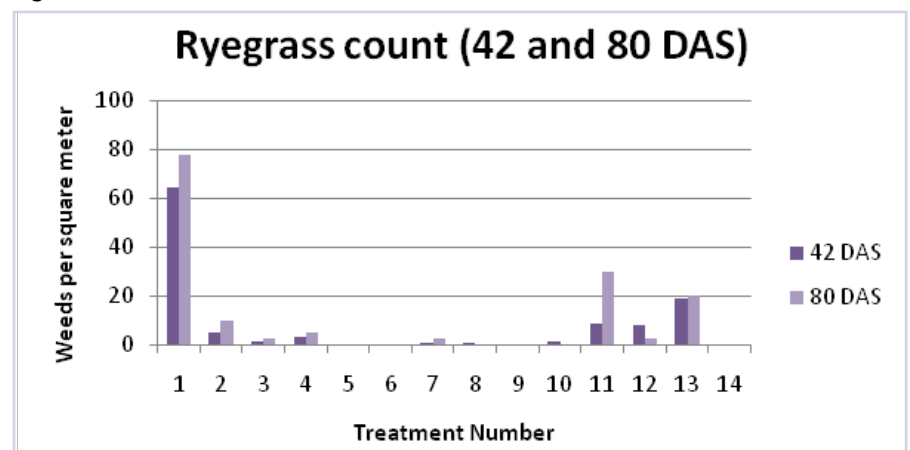


Figure 3: Crop Biomass at 43 DAA

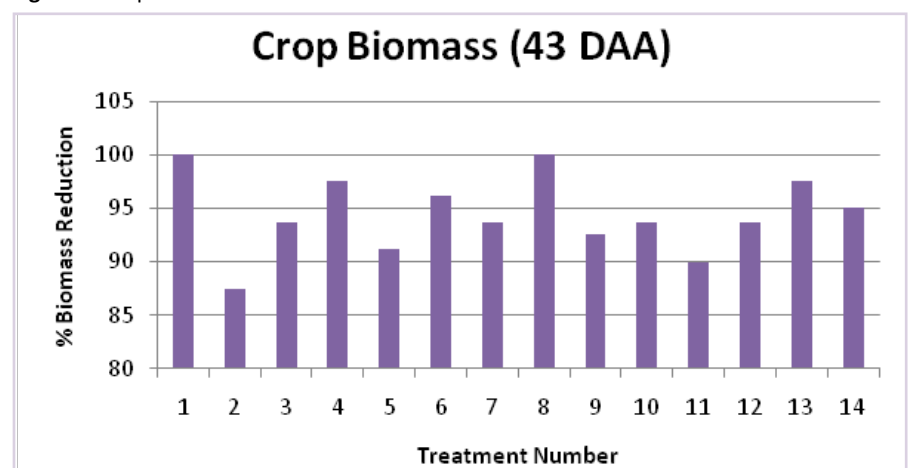
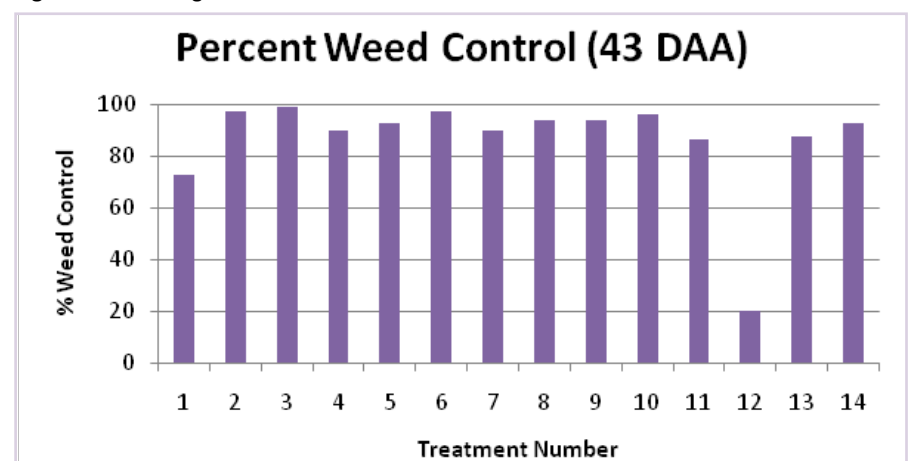


Figure 4: Percentage Weed Control at 43 DAA



Yield Results:

Treatment #	Treatment	Dosage		Inverleigh T/ha	Lake Bolac T/ha
1	Untreated			6.21c	5.51e
2	Triflur X	2L/ha	IBS	7.64b	6.53a-d
3	Triflur X + Avadex Xtra	1.5 L/ha + 1.6 L/ha	IBS	8.11ab	6.66a-d
4	Boxer Gold	2.5 L/ha	IBS	8.50a	6.44bcd
5	Boxer Gold	5 L/ha	IBS	8.79a	6.49a-d
6	Sakura 850WG	118 g/ha	IBS	8.56a	7.13a
7	Sakura 850WG	118 g/ha	PSPE	8.18ab	6.32bcd
8	Sakura 850WG	238g/ha	IBS	8.14ab	6.77abc
9	Saura 850 WG + Avadex Xtra	118g/ha & 1L/ha	IBS	8.48a	7.0ab
10	Sakura 850WG + Triflur X	118g/ha & 1.0L/ha	IBS	8.84a	6.72abc
11	Boxer Gold	2.5L/ha	PSPE	8.04ab	5.46e
12	Boxer Gold	2.5L/ha	GS14	8.33ab	5.48e
13	Stomp 330	1.8L/ha	IBS	8.41ab	5.98de
14	Boxer Gold & Stomp	2.5L/ha & 1.8L/ha	IBS	8.60a	6.25cd
Mean				8.2T/ha	6.34T/ha

Summary:

The mean yield for the trial was 8.2T/ha at Inverleigh and 6.34T/ha for Lake Bolac in 2010

The herbicide treated plots were significantly higher than the no herbicide treatment .

The Sakura 850WG & TriflurX tank mix (Inverleigh 8.84T/ha) and Sakura 850WG at 118 g/ha IBS (Lake Bolac 7.13T/ha) topped the trials at both locations.

There is an inverse relationship between the number of ryegrass plants present in the plot and the yield.

The lowest yielding plot was untreated in both sites, the lowest chemical treatment plot was the Boxer Gold Treatment 11 (2.5L/ha PSPE not a registered use pattern) at both sites which also had the second highest number of ryegrass plants apart from the untreated.

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