Sakura tolerance in lentils

Aim:

1. To compare the tolerance of lentils to Sakura with other herbicides.
2. To evaluate the tolerance of lentils to Sakura combinations with other herbicides

Background:

Sakura is commonly used in wheat on the Northern Yorke Peninsula with robust results controlling grass weeds. This trial investigates the tolerance of lentils to Sakura but also as a secondary investigation, the control of brome grass was observed between the various treatments.

Details:

Location:	Pt Broughton, Northern Yorke Peninsula, SA.
Researcher:	Leighton Wilksch.
Co-operators:	Nathan Hewett, NSS Committee, Bayer Crop Science
Application Dates:	16th July – full flower. 18th August – late flower/early pod fill, 3rd September - 70% pods turning colour
Trial Details:	Herald XT lentils planted @ 45kg/ha on 11th May. Sprayed with 2m hand boom, 100L/ha water rate, 015 nozzles, 6kph walking speed. 2bar. Replicated three times. Plot size 1.5m x 11m.

Results:

Table 1. Summary of assessments taken on 11th June, 2015.

Trt. No.	Treatment	Rate /ha	Timing	Brome grass /m²	Lentils /m²
10	Propizamide	2 L	IBS	41 a	55
3	Sakura	236gms	IBS	42 a	57
4	Sakura + Avadex Xtra	118gms + 1.6L	IBS	56 ab	55
17	DC148	210 mL	IBS	62 abc	44
2	Sakura	118gms	IBS	71 abc	46
5	Sakura + TriflurX	118gms + 1.5L	IBS	86 abcd	51
8	Sakura + Glean	118gms + 1.6L	IBS	97 bcde	61
9	Propizamide	1 L	IBS	98 bcde	55
6	Sakura + Terbyne	118 + 400gms	IBS	106 bcde	55
7	Sakura + Metribuzin	118 + 100 fb 50gms	IBS fb PSPE	112 bcde	58
12	Boxer Gold	5 L	IBS	133 def	46
15	Metribuzin	100 fb 50 g	IBS fb PSPE	175 fgh	48
11	Boxer Gold	2.5 L	IBS	189 ghi	46
16	Glean	10 g	IBS	208 hij	50
13	TriflurX	1.5 L	IBS	238 ij	49
14	Terbyne	400 g	IBS	242 j	61
1	Untreated			297 k	57
			CV	**22%**	**20%**
			LSD 5%	**50**	**18**

- Means followed by the same letter do not significantly differ
- fb = followed by
- Majority of these treatments are **EXPERIMENTAL ONLY**. Please follow appropriate label rates.

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Discussion:

This trial site was placed on top of a sand dune where brome grass was noted to be particularly rampart in the preceding year. Stubble cover was estimated to be around 50%, so there was a fair amount of soil that herbicide was able to contact (photo 1). At planting, there was low soil moisture and in the following month, there was also very little precipitation of significance recorded; only approximately 25mm from planting (11th May) until 15th June. Thus the effectiveness of some of the herbicides was limited as they require solution in soil moisture to move through the profile n order to be effective against germinating weeds. The other factor is that some of these herbicides (such as Metribuzin) can have significant effect on germinating lentil pants, but due to the lack of soil moisture potentially moving them into the seeding furrow, no herbicide damage was observed.

The assessments taken on the 11th June showed that none of the herbicide treatments had caused any damaging effects to lentils at this site. Some of the herbicides used such as TriflurX, Metribuzin, Glean and Terbyne have caused damage to lentils in different seasonal conditions in various soil types, but lentil plant counts showed no significant differences between treatments and the untreated. In addition, there was no effect from adding Sakura to other herbicides in regards to its effect on lentil numbers.

There were however, significant differences between treatments for the control of brome grass in this trial. Sakura treatments tended to be at the top half of the trial along with a high rate (2L/ha) of Propizamide. Poor results from TriflurX & Glean as standalone treatments indicate potential herbicide resistance to group B & D herbicides at this site.

Due to the poor season finish in spring, harvest results were not taken.

Photo 1. Showing germinated brome grass density & stubble cover prior to knockdown, treatment application and planting.

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Summary:
Whilst in this trial no damage to lentils was observed, it should be noted that conditions were not conducive to herbicide damage. Following label rates will ensure that the risk of damage is minimized. Using a range of pre-plant and post-plant-pre-emergent herbicides will assist in reducing pressure on in-crop herbicides for grass weed control such as Clethodim (group A). Rotating herbicide groups and sound manual methods such as wind row burning, chaff carts and fence line spraying will ensure that weed numbers are kept in check and “blow-outs” of weed numbers is minimized.