Residual Control of Paradoxa Grass in Chickpea

Trial ID: **DH2306** **Location:** **Edgeroi** **Trial Year:** **2023**
Investigator: **Dean Hancock**

Paradoxa grass (*Phalaris paradoxa*) is an important weed of winter crops, particularly in seasons when wet conditions occur in late autumn and early winter. Improved understanding of the potential for residual paradoxa grass management is needed due to increasing levels of Group 1 (A) and Group 2 (B) post-emergent herbicide resistance.

This project evaluated a range of residual herbicides with existing registrations for use in chickpeas. Three of the herbicides have paradoxa grass/ canary grass control claims when applied at planting in chickpea: Sakura, TriflurX and Rustler, whilst Terbyne Xtreme has a suppression claim. A Group 13 herbicide not registered in chickpea was included as it has a paradoxa grass suppression claim in wheat.

Note – No weed emergence data was obtained from this site, only crop safety data generated

Objective:	**To evaluate herbicide options for residual control of *Phalaris paradoxa* in chickpea**	
Crop & Hybrid:	**Chickpea cv. PBA Seamer**	
Planting Date:	**30/05/2023**	
Planting Details:	**Tyne planter on 37.5 cm row spacings, at 5 cm depth and 100 kg/ha planting rate**	
Application:	**A**	**B**
Application Date:	**29/05/2023**	**1/06/2023**
Application Timing:	**Incorporated by sowing (IBS)** **1 day after application**	**Post-Sowing, Pre-Emergence (PSPE)** **2 days after planting**
Days After Previous Application:	**-**	**3 days**
Nozzle:	**AIXR11002**	
Volume:	**100 L/ha**	
Trial Design:	**Randomised complete block of 12 treatments x 4 replicates**	
Plot Size:	**4 m x 12 m**	
Keywords:	**Chickpea, residual**	

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Trt No.	Treatment	Product Rate	Appln. Code	
Crop Name				**Chickpea**
Crop Variety				**PBA Seamer**
Assessment Date				**3/07/2023**
Assessment Type				**EMERGENCE**
Assessment Unit				**/m²**
Assessment Area				**4 m Row**
Plant-Evaluation Interval				**34 DAP**
1	Untreated	-	-	28-
2	Sakura	118g/ha	A	26-
3	Boxer Gold	2500ml/ha	A	26-
4	TriflurX	1500ml/ha	A	27-
5	Avadex Xtra	1600ml/ha	A	28-
	TriflurX	1500ml/ha	A	
6	Outlook	1000ml/ha	A	25-
7	Rustler	1000ml/ha	A	28-
8	Rifle 440	1900ml/ha	A	25-
9	Group 13 O	1250ml/ha	A	23-
10	Valor	180g/ha	A	29-
11	Ultro	1100g/ha	B	26-
12	Balance	100g/ha	B	29-
13	Balance	100g/ha	B	28-
	Simazine	1100g/ha	B	
14	Balance	100g/ha	B	28-
	Terbyne Xtreme	860g/ha	B	
15	Balance	100g/ha	B	28-
	Ultro	1100g/ha	B	
			LSD P=.05	nsd
			Treatment Prob.(F)=	0.7241

Means followed by same letter or symbol (-) do not significantly differ (P=.05, LSD).
nsd – no significant difference
Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL

DAP = Days after Planting

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Conclusions:

This trial was conducted at a site near Edgeroi that had paradoxa grass issues in wheat 2022. The trial was planted with PBA Seamer in late May with a tyne planter on 37.5cm row spacings. Incorporated by sowing treatments (Application A) were applied 1 day before planting, post sowing pre-emergence treatments (Application B) were applied at 2 DAP (2 days after planting). The first rainfall after planting was ~6 mm at 10 DAP.

Chickpea emergence counts were made at 34 DAP. There was no significant difference between treatments with populations ranging from ~23 to 29 plants/m^2. Chlorosis (yellowing) was evident in plots treated with the Group 13 herbicide.

The trial was inspected until late July. There was no paradoxa grass emergence in any treatment.

In this situation, with dry conditions from April to July, no useful paradoxa grass efficacy data was generated. All treatments provided equivalent crop emergence to the untreated although the Group 13 herbicide (not registered in chickpeas) caused mild crop chlorosis or yellowing.

Application Description		
	A	B
Application Date:	29/05/2023	1/06/2023
Application Start Time:	12:30 PM	11:00 AM
Application Stop Time:	2:10 PM	12:00 PM
Interval to Previous Application:	-	3 DAYS
Application Timing:	IBS	PSPE
Air Temperature Start, Stop:	22.5, 21.9 C	23, 23.9 C
% Relative Humidity Start, Stop:	34.5, 38.3	41.2, 40.9
Wind Velocity & Direction Start:	10.3 km/h, SW	5.7 km/h, NW
Wind Velocity & Direction Stop:	9.6 km/h, SW	6.1 km/h, NW
Soil Moisture:	NORMAL	
% Cloud Cover:	0	40
First Moisture Occurred On:	9/06/2023	9/06/2023

Application Equipment		
	A	B
Application Equipment:	Polaris	
Equipment Type:	BOOM	
Operation Pressure:	400 kPa	
Nozzle Model:	AIXR11002	
Nozzle Spacing:	50 cm	
% Coverage:	100	
Boom Length:	4 m	
Boom Height:	50 cm	
Ground Speed:	11 km/h	
Application Amount:	100 L/ha	

Rainfall:

Closest Weather Station:	On Farm
Distance:	1 km

Date	Amount	Unit	Comments
30/04/2023	7	mm	Monthly Total
29/05/2023	-		Application A - IBS
30/05/2023	-		Planting
31/05/2023	0	mm	Monthly Total
1/06/2023	-		Application B - PSPE
9/06/2023	6	mm	
13/06/2023	7	mm	
23/06/2023	19	mm	
28/06/2023	3	mm	
3/07/2023	-		Assessment 1 - chickpea emergence
4/07/2023	15	mm	