

Disclaimer:

This document is based on the results from an individual trial and may contain experimental use patterns that are currently off-label. **This document does not provide any interpretation and should not be taken as an endorsement of any unregistered use pattern.**

Professional advice should be sought for specific recommendations to ensure access to the most up to date information and knowledge.

Any product referred to in this document must be used strictly as directed, and in accordance with all label or permit instructions. Always consult the label prior to use.

Residual Control of Feathertop Rhodes Grass in Wheat

Trial ID: LB2002	Location: St Ruth	Trial Year: 2020
	Investigator: Linda Bailey	

Feathertop Rhodes grass (*Chloris virgata*) has become a management issue in broadacre farming in many areas of Qld and northern NSW during the last decade. Common fallow herbicide treatments such as glyphosate and paraquat applied alone or even as a sequential (double knock) program, rarely provide useful levels of suppression. Although generally considered a summer grass, feathertop Rhodes grass (FTR) can emerge, establish and set seed within winter crops, particularly when crop establishment or vigour is poor. These winter and spring FTR cohorts can then also prove a major challenge for management in fallow.

This trial was designed to evaluate the efficacy and potential of a wide range of residual herbicides to manage FTR in wheat. The objective was to screen a wide range of herbicides, at existing wheat use patterns, to evaluate for FTR efficacy and potential label registration.

Objective:	To evaluate herbicides for the residual control of spring germinating Feathertop Rhodes grass		
Crop:	Wheat cv. Elmore CL Plus		
Planting Date:	20/06/2020		
Application Code:	A	B	C
Application Type:	IBC (incorporated by chains from sowing unit)	PSPE	In-crop (33 days after planting)
Application Date:	22/06/2020	22/06/2020	23/07/2020
Nozzles:	AIXR110015		
Volume:	100 L/ha		
Weeds:	Feathertop Rhodes Grass, pigweed		
Keywords:	Wheat, residual, feathertop Rhodes grass, pigweed		

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Crop emergence and weed counts at 133 DAA

Pest Scientific Name					<i>Chloris virgata</i> Feathertop Rhodes Grass GS11-12	<i>Portulaca oleracea</i> Pigweed Cotyledon to 2 leaf	<i>Hibiscus verdcourtii</i> Bladder Ketmia Cotyledon to 2 leaf
Pest Name							
Growth Stage							
Crop Name				Wheat			
Crop Variety				Elmore CL Plus			
Assessment Date				16/07/2020	2/11/2020	2/11/2020	2/11/2020
Assessment Type				EMERGENCE	COUNT	COUNT	COUNT
Assessment Unit				/m ²	/m ²	/m ²	/m ²
Treatment-Evaluation Interval				26 DAP	133 DAA/ 101 DAC	133 DAA/ 101 DAC	133 DAA/ 101 DAC
ARM Action Codes					AS	AS	AS
Trt No.	Treatment	Product Rate	Appln. Code				
1	Untreated	-	-	77 -	2.0ab	5.7 ab	0.4 -
2	Sakura	118g/ha	A	76 -	0.4bc	0.5 cd	0.1 -
3	Boxer Gold	2500ml/ha	A	73 -	3.7a	1.1 cd	0.1 -
4	Boxer Gold	1750ml/ha	A	74 -	0.2c	0.1 d	0.0 -
	Boxer Gold	750ml/ha	B				
5	TriflurX	2000ml/ha	A	73 -	0.0c	0.2 d	0.0 -
6	TriflurX	3000ml/ha	A	75 -	0.0c	0.1 d	0.5 -
7	Avadex Xtra	2400ml/ha	A	74 -	0.0c	0.1 d	0.1 -
	TriflurX	2000ml/ha	A				
8	Rifle 440	1350ml/ha	A	75 -	0.1c	1.6 cd	0.1 -
9	Luximax	500ml/ha	A	74 -	0.3c	2.6 bc	0.0 -
10	Overwatch	1250ml/ha	A	69 -	0.4bc	2.0 cd	0.2 -
11	Bolta Duo	3000ml/ha	A	76 -	0.0c	0.0 d	0.0 -
12	Diablo Duo	3000ml/ha	A	73 -	0.4bc	0.0 d	0.0 -
13	Arcade	3000ml/ha	A	75 -	1.2bc	0.1 d	0.0 -
16	Arcade	3000ml/ha	C	77 -	0.0c	0.0 d	0.0 -
17	Experimental	1410ml/ha	C	75 -	0.1c	0.7 cd	0.0 -
LSD P=				nsd	0.66t	0.92t	nsd
Treatment Prob.(F)=				0.6297	0.0088	0.0001	0.6521

Means followed by same letter do not significantly differ (P=.05, LSD)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.

Missing data estimates are included in columns: Average = 2, 4, 6, 8

nsd = No significant difference

ARM Action Code

AS = Automatic square root transformation of X+0.5

DAP = Days after Planting

DAA = Days after Application A (and B)

DAC = Days after Application C

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NB All products in this trial are registered for use in wheat at the rates and use patterns evaluated. However, none of these products have feathertop Rhodes grass (or the other weeds assessed) on their label.

Conclusions:

This trial was established to evaluate the residual control of Feathertop Rhodes (FTR) grass in wheat. The treatments planned for incorporation by sowing (IBS) were applied 2 days after planting (DAP) and incorporated with chains (IBC) dragged behind the planting units. The post sowing pre-emergent treatments (PSPE) were applied immediately after the incorporation. The in-crop application was applied at 33DAP when ~90% of the crop was at GS21-22 but pre-emergent to weeds. Rainfall of ~132 mm was received during the 4 1/2 months of the trial. This was ~85-90% of the long-term average. September was very dry with less than 2 mm recorded.

Wheat establishment counts were taken at 26DAP, with no impact on emergence apparent from any treatment.

FTR emergence commenced in late October, following a total of ~46mm between the 19th and 29th of October (119-129DAA). Weed counts were undertaken at 133DAA when the FTR was at a 2-leaf stage, immediately prior to crop harvest. A transect of 10 m x 1 m was assessed in all plots.

The majority of treatments provided >90% control of a FTR population of ~2/m². Sakura, Luximax, Overwatch, and Diablo Duo provided ~80-85 control. Arcade or Boxer Gold, both applied at planting, were disappointing with large variability between replicates for Boxer Gold in particular. All treatments except Luximax and Dual Gold provided significant control of a pigweed population of ~5-6/m². There were no significant differences in low and variable level populations of bladder ketmia.

The trial site was assessed until late January 2021. There was no further emergence of FTR.

Crop Description	
Crop:	Wheat
Variety:	Elmore CL Plus
Planting Date:	20/06/2020
Planting Method:	Direct Drilled
Planting Equipment:	Disc
Row Spacing, Unit:	30.5cm

Application Description			
	A	B	C
Application Date:	22/06/2020	22/06/2020	23/07/2020
Application Start Time:	10:45 AM	1:15 PM	9:40 AM
Application Stop Time:	12:35 PM	1:30 PM	9:50 AM
Application Method:	SPRAY		
Application Timing:	IBC*	PSPE	POEMCR
Application Placement:	SOIL	SOIL	FOLIAR
Air Temperature, Unit:	14.5 C	17.5 C	14.6 C
% Relative Humidity:	60.5	53.2	60.7
Wind Velocity, Unit:	8.5 km/h	9.3 km/h	5.7 km/h
Wind Direction:	W	W	NE
Dew Presence (Y/N):	No		
Soil Moisture:	SLIWET	SLIWET	DRY
% Cloud Cover:	0	5	95
Next Moisture Occurred On:	12/07/2020	12/07/2020	26/07/2020

NB * Application A applied 2 days after planting and incorporated with chains from the planting units towed by tractor

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St Ruth

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2020

Crop Stage At Each Application					
	A		B		C
Crop:	Wheat cv. Elmore CL Plus				
Stage Majority, %:	Planting			21	50%
Stage Minimum, %:			14	10%	
Stage Maximum,%:			22	40%	

Application Equipment			
	A	B	C
Application Equipment:	Polaris		
Equipment Type:	BOOM		
Operation Pressure, Unit:	300 kPa		
Nozzle Type:	AIXR		
Nozzle Size:	110015		
Nozzle Spacing, Unit:	50 cm		
Nozzles/Row:	8		
Boom Length, Unit:	4 m		
Boom Height, Unit:	50 cm		60 cm
Ground Speed, Unit:	7.2 km/h		
Spray Volume, Unit:	100 L/ha		

Rainfall		
Closest Weather Station:		
SILO grid point -27.35, 151.35 (~2 km)		
Date	Amount	Unit
11/06/2020	0.6	mm
13/06/2020	0.7	mm
14/06/2020	12.5	mm
15/06/2020	19.3	mm
17/06/2020	0.1	mm
22/06/2020	1.2	mm
12/07/2020	7.1	mm
13/07/2020	3.8	mm
26/07/2020	13.9	mm
27/07/2020	7.7	mm
28/07/2020	0.1	mm
30/07/2020	0.4	mm
8/08/2020	11.7	mm
9/08/2020	0.2	mm
15/08/2020	13.3	mm
16/08/2020	2.9	mm
20/09/2020	1.7	mm
22/09/2020	0.1	mm
1/10/2020	0.2	mm
6/10/2020	0.1	mm
12/10/2020	0.1	mm
13/10/2020	1.7	mm
19/10/2020	7.8	mm
20/10/2020	0.1	mm
22/10/2020	10.9	mm
23/10/2020	1.3	mm
24/10/2020	0.9	mm
25/10/2020	3.1	mm
26/10/2020	12.2	mm
27/10/2020	0.5	mm
28/10/2020	6.9	mm
29/10/2020	2.2	mm