

Disclaimer:

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Metolachlor Application Timing for Summer Grass Management

Trial ID: **BD2009** Location: **Caroona** Trial Year: **2020**
Investigator: **Branko Duric**

Objective:	To evaluate split application timing of metolachlor for extended pre-plant and in-crop grass control		
Situation:	Fallow/ in-crop		
Planting Date:	1/12/2020		
Crop:	Sorghum		
Application:	A	B	C
Application Date:	3/08/2020	1/09/2020	29/09/2020
Next Rainfall after Application:	22mm at 5DAA 6mm at 12DAA	0.4mm at 4DAB, 12mm at 9DAB	5mm at 2DAC, 3mm at 14DAC
Crop Growth Stage at Application:	Pre-planting		
Weed:	Awnless barnyard grass		
Weed Stage at Application:	Pre-emergent		
Nozzles:	AIXR110015		
Volume:	100 L/ha		
Keywords:	Awnless barnyard grass, metolachlor		

Applications A, B and C were scheduled for monthly intervals pre-planting. Application D scheduled at planting. Heavy rain occurred after planting. When access to the site and application was next possible, crop was already too advanced and Application D was not applied.

Pest Scientific Name				<i>Echinochloa colona</i>	
Pest Name				Awnless Barnyard Grass	
Assessment Date				8/01/2021	
Treatment – Evaluation Interval				158 DAA/ 129 DAB/ 101 DAC	
Assessment Type				COUNT	CONTROL
Assessment Unit				/m ²	%
Pest Stage Majority				30	30
ARM Action Codes				AS	AS
Trt No.	Treatment	Product Rate	Appln. Code		
13	Untreated	-		0.88b	-
1	Dual Gold	1000ml/ha	A	0.22cd	75
2	Dual Gold	1500ml/ha	A	0.17d	81
3	Dual Gold	1000ml/ha	A	0.82b	7
4	Dual Gold	1500ml/ha	A	0.18cd	80
5	Dual Gold	1000ml/ha	B	0.81b	9
6	Dual Gold	1500ml/ha	B	0.18cd	79
7	Dual Gold	1000ml/ha	B	0.43c	51
8	Dual Gold	1500ml/ha	B	0.07d	92
9	Dual Gold	1000ml/ha	C	0.18cd	80
10	Dual Gold	1500ml/ha	C	0.02d	98
11	Dual Gold	1000ml/ha	C	0.14d	84
12	Dual Gold	1500ml/ha	C	0.19cd	78
14	Unsprayed	-	D	0.92b	-
15	Unsprayed	-	D	0.91b	-
16	Unsprayed	-	D	1.43a	-
LSD P=				0.144t	n/a
Treatment Prob.(F)=				0.0001	n/a

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

NB: Treatments 3,4,7,8,11,12 were designed to be 'topped up' at planting to a total of 2000 mL/ha.

Treatments 14,15 and 16 were intended to be at planting standalone applications.

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Trial ID: BD2009 **Location:** Caroonna **Trial Year:** 2020

Pest Stage Majority

30 = Beginning of stem elongation; G_ Beginning of shooting

ARM Action Codes

AS = Automatic square root transformation of $X+0.5$

DAA = Days after Application A

DAB = Days after Application B

DAC = Days after Application C

Conclusions:

The trial was conducted to evaluate the impact of Dual Gold (metolachlor) split applications for the control of summer grasses. The project aim was to evaluate whether split applications of Dual Gold could extend the length of effective residual summer grass control, both prior to planting and in-crop compared to a single application at planting. This may assist in providing improved management of glyphosate resistant or tolerant summer grasses in situations where germinations occur in the month(s) prior to planting.

Planting was conducted on December 1, 120, 91 and 63 days after Applications A (August 3), B (September 1) and C (September 29) respectively. Application D (at planting) was not able to be applied due to persistent rainfall post planting. Treatments designated for topping up with Application D at planting became additional standalone rates from the various application timings. The absence of the top up treatments meant any data generated would only demonstrate length of control from the rate and timing. Additionally, there was no opportunity for the comparison standalone rates of 500, 1000 and 2000 mL/ha applied at planting.

There was no summer grass emergence until after planting with an assessment of a low population of awnless barnyard grass ($\sim 1/\text{m}^2$) in early January 2021.

There was no significant difference in level of awnless barnyard grass control from the 1500 mL/ha rate between application timings with mean control of $\sim 85\%$ (range 78-98%). Increased variability in control was however apparent from the 1000 mL/ha treatments with a mean control of 52% (range 7-84%). At Application C, both 1000 mL/ha treatments provided equivalent control to 1500 mL/ha with a mean control of 82%. However, at the earlier applications, there was a significant rate response for 3 of the 4 rate 'pairings'. The consistent performance of the 1500 mL/ha rate at all timings but inconsistent performance from the 1000 mL/ha rates suggests these results are simply highlighting the reduced length of residual control from the 1000 mL/ha rate when applied at least 3, or more, months prior to weed emergence.

Although no data was able to be generated on the performance of split applications in this trial, useful information on the impact of timing and rate on awnless barnyard grass control was still obtained. The data suggests that split applications of the 1000 mL/ha rate may not provide consistent residual control if the top up timing is more than ~ 2 months after the initial application.

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Trial ID: BD2009

Location:

Caroona

Trial Year: 2020

Application Description			
	A	B	C
Application Date:	3/08/2020	1/09/2020	29/09/2020
Application Start Time:	11:00 AM	11:30 AM	8:00 AM
Application Stop Time:	1:00 PM	12:30 PM	10:00 AM
Application Method:	Spray		
Application Timing:	Pre-Emergent		
Application Placement:	Soil		
Air Temperature, Unit:	16 C	19 C	16 C
% Relative Humidity:	58	52	48
Wind Velocity, Unit:	1.5 m/s	1.7 m/s	1.2 m/s
Wind Direction:	SW	SW	S
Dew Presence (Y/N):	No		
% Cloud Cover:	70	0	0

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		
Boom Length, Unit:	4 m		
Boom Height, Unit:	50 cm		
Ground Speed, Unit:	7.2 km/h		
Carrier:	WATER		
Spray Volume, Unit:	100 L/ha		