North Carolina State University

SMOOTH CRABGRASS CONTROL IN TALL FESCUE WITH MESOTRIONE AND BARRICADE FLOWABLE TANKMIXES

Trial ID: 04-T12 Study Director: L.S. WARREN
Location: NC WESLEYAN COLLEGE Investigator: Fred Yelverton

General Trial Information

Study Director: L.S. WARREN **Title:** PROFESSOR
Affiliation: NORTH CAROLINA STATE UNVERSITY
Postal Code: 27695 **E-mail:** leon_warren@ncsu.edu
Investigator: Fred Yelverton **Title:** PROFESSOR
Affiliation: NORTH CAROLINA STATE UNIVERSITY
Postal Code: 27695 **E-mail:** fred_yelverton@ncsu.edu

Trial Location

City: ROCKY MT. **Trial Status:** COMPLETED
State/Prov.: NC
Initiation Date: 3-4-04
Country: USA
Directions:

Objectives:
TO DETERMINE IF MESOTRIONE AND BARRICADE CONTROL DIGIS EITHER PREEMERGENCE OR POSTEMERGENCE WHEN TANKMIXED
TO DETERMINE IF PHTYO OCCURS IN FESAR
Conclusions:

Cooperator/Landowner

Cooperator: STEVE SPARKS **Country:** USA
Organization: NC WESLEYAN COLLEGE **Phone No:** 252/985-5222
City: ROCKY MT.
State/Prov: NC

Crop Description

Crop 1: FESAR Festuca arundinacea Tall fescue
Variety: KENTUCKY 31
BBCH Scale: BGRM

Pest Description

Pest 1 Type: W **Code:** DIGIS Digitaria ischaemum
Common Name: Crabgrass, smooth

Site and Design

Plot Width, Unit: 5 FT **Site Type:** TURF - RESEARCH
Plot Length, Unit: 10 FT **Tillage Type:** NA
Replications: 4 **Study Design:** Randomized Complete Block

Trial Initiation Comments:

Field Prep./Maintenance:

Soil Description

% OM: 0.81 **Texture:** SANDY LOAM
pH: 5.0
CEC: 4.9 **Fert. Level:** FAIR

Moisture Conditions

Overall Moisture Conditions: MAR 1.98"; APR 2.33"; MAY 3.86"; JUN 5.75"
Closest Weather Station: UPPER COASTAL PLAIN RES STA **Distance:** 4 **Unit:** MI

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Application Description

	A	B	C
Application Date:	3-4-04	5-4-04	6-2-04
Time of Day:	10:00 AM	1:45 PM	10:00 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	1-3 LEAF	3-4 LEAF
Application Placement:	BROSOI	BROFOL	BROFOL
Applied By:	L.S. WARREN	L.S. WARREN	L.S. WARREN
Air Temperature, Unit:	79 F	65 F	80 F
% Relative Humidity:	53	56	61
Wind Velocity, Unit:	4.8 MPH	2.3 MPH	3.7 MPH
Dew Presence (Y/N):	N	N	N
Soil Temperature, Unit:	58 F	68 F	78 F
Soil Moisture:	MOIST	MOIST	MOIST
% Cloud Cover:	0	25	5

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	FESAR BGRM	FESAR BGRM	FESAR BGRM
Stage Scale Used:	BBCH	BBCH	BBCH
Height, Unit:	3.0 IN	4.0 IN	3.0 IN

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Disc., Scale:	DIGIS W	DIGIS W	DIGIS W
Stage Majority, Percent:	PRE 100		
Height, Unit:	0 IN	0.25 IN	0.5 IN
Height Minimum, Maximum:		0.125 0.5	0.25 0.75
Density, Unit:	0 FT2	10 FT2	10 FT2

Application Equipment

	A	B	C
Appl. Equipment:	BACSPR	BACSPR	BACSPR
Operating Pressure:	28	28	28
Pressure Unit:	PSI	PSI	PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 8002VS	XR 8002VS	XR 8002VS
Nozzle Spacing, Unit:	10 IN	10 IN	10 IN
Band Width, Unit:	40 IN	40 IN	40 IN
Boom Length, Unit:	40 IN	40 IN	40 IN
Boom Height, Unit:	10 IN	10 IN	10 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume:	32.5	32.5	32.5
Volume Unit:	GPA	GPA	GPA
Propellant:	COMCO2	COMCO2	COMCO2
Tank Mix (Y/N):	Y	Y	Y

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	W Weed DIGIS 7-15-04 CONTROL PERCENT YELVERTON 43 133 DA-A P	W Weed DIGIS 8-3-04 CONTROL PERCENT L.S. WARREN 62 152 DA-A P	W Weed DIGIS 8-19-04 CONTROL PERCENT L.S. WARREN 78 168 DA-A P	W Weed DIGIS 9-2-04 CONTROL PERCENT L.S. WARREN 92 182 DA-A P
1	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAR 4	A	83.8 abc	91.3 ab	92.5 ab	93.8 ab
2	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAR 4	A	71.3 cd	75.0 b	68.8 b	87.5 abc
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAR 4	A				
	X-77 SPREADER		L	0.25	% v/v		MAR 4	A				
3	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	61.3 d	78.8 ab	82.5 ab	75.0 c
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
4	DRIVE	75	DF	0.75	lb ai/a		MAY 4	B	87.5 abc	87.5 ab	85.0 ab	86.3 abc
	DYNE-AMIC		L	1.5	pt/a		MAY 4	B				
5	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAY 4	B	72.5 bcd	75.0 b	73.8 ab	80.0 bc
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B				
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
6	MESOTRIONE	4.0	SC	0.25	lb ai/a		MAY 4	B	87.5 abc	91.5 ab	93.8 ab	90.0 abc
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B				
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
7	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAY 4	B	93.8 ab	100.0 a	96.3 ab	100.0 a
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B				
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
	MESOTRIONE	4.0	SC	0.187	lb ai/a		JUN 2	C				
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C				
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C				
8	MESOTRIONE	4.0	SC	0.25	lb ai/a		MAY 4	B	97.5 a	100.0 a	100.0 a	100.0 a
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B				
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
	MESOTRIONE	4.0	SC	0.25	lb ai/a		JUN 2	C				
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C				
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C				
9	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	96.3 a	98.3 ab	98.8 a	98.8 a
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B				
	MESOTRIONE	4.0	SC	0.25	lb ai/a		JUN 2	C				
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C				
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C				
10	CHECK								0.0 e	0.0 c	0.0 c	0.0 d
	LSD (P=.05)								22.31	24.47	27.58	15.48
	Standard Deviation								15.37	16.86	19.01	10.67
	CV								20.46	21.15	24.02	13.15
	Grand Mean								75.13	79.73	79.13	81.13
	Bartlett's X2								22.666	17.258	26.326	8.521
	P(Bartlett's X2)								0.004*	0.008*	0.001*	0.202
	Friedman's X2								21.968	26.345	19.268	23.305
	P(Friedman's X2)								0.009	0.002	0.023	0.006
	Replicate F								1.004	0.667	0.772	0.898
	Replicate Prob(F)								0.4062	0.5794	0.5198	0.4548
	Treatment F								14.164	12.344	9.778	31.024
	Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Type	W Weed
Pest Code	DIGIS
Rating Date	9-16-04
Rating Data Type	CONTROL
Rating Unit	PERCENT
Assessed By	L.S. WARREN
Days After Last Applic.	106
Trt-Eval Interval	196 DA-A
ARM Action Codes	P

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	
1	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAR 4	A	95.0 a
2	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAR 4	A	80.0 ab
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAR 4	A	
	X-77 SPREADER		L	0.25	% v/v		MAR 4	A	
3	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	76.3 ab
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
4	DRIVE	75	DF	0.75	lb ai/a		MAY 4	B	66.3 b
	DYNE-AMIC		L	1.5	pt/a		MAY 4	B	
5	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAY 4	B	65.0 b
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
6	MESOTRIONE	4.0	SC	0.25	lb ai/a		MAY 4	B	90.0 ab
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
7	MESOTRIONE	4.0	SC	0.187	lb ai/a		MAY 4	B	98.8 a
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
	MESOTRIONE	4.0	SC	0.187	lb ai/a		JUN 2	C	
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C	
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C	
8	MESOTRIONE	4.0	SC	0.25	lb ai/a		MAY 4	B	95.0 a
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
	MESOTRIONE	4.0	SC	0.25	lb ai/a		JUN 2	C	
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C	
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C	
9	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		MAY 4	B	98.8 a
	X-77 SPREADER		L	0.25	% v/v		MAY 4	B	
	MESOTRIONE	4.0	SC	0.25	lb ai/a		JUN 2	C	
	BARRICADE FLOWABLE	4.0	F	0.65	lb ai/a		JUN 2	C	
	X-77 SPREADER		L	0.25	% v/v		JUN 2	C	
10	CHECK								0.0 c

LSD (P=.05)	26.62
Standard Deviation	18.35
CV	23.98
Grand Mean	76.5
Bartlett's X2	31.308
P(Bartlett's X2)	0.001*
Friedman's X2	19.323
P(Friedman's X2)	0.023
Replicate F	1.322
Replicate Prob(F)	0.2878
Treatment F	10.507
Treatment Prob(F)	0.0001

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Trial Comments

04-26-04: DIGIS BEGINNING TO GERMINATE AT 0.25 INCH TALL WITH 1 - 2 LEAVES AND 10+/FT2

05-04-04: DIGIS 0.25 INCH TALL WITH 1 - 3 LEAVES

05-25-04: TEST AREA DRY, DIGIS STILL ONLY 1 TO 3 LEAF AND 0.5 INCH TALL