

North Carolina State University

Pre and Postemergence Control of Smooth Crabgrass With Mesotrione

Trial ID: 02-T09 Study Dir.: Jason Hinton
 Location: NC Wesleyan College Investigator: Fred Yelverton

GENERAL TRIAL INFORMATION

Study Director: Jason Hinton **Title:** Research Technician
Affiliation: North Carolina State University
Postal Code: 27695
Investigator: Fred Yelverton **Title:** Professor
Affiliation: North Carolina State University
Postal Code: 27695

TRIAL LOCATION

City: Rocky Mount **Trial Status:** Complete
State/Prov.: NC
Postal Code: 27804 **Initiation Date:** 04-03-02
Country: USA

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	DIGIS	Smooth Crabgrass	Diqitaria ischaemum

Crop 1: FESAR Tall Fescue

SITE AND DESIGN

Plot Width, Unit: 5 FT **Plot Length, Unit:** 10 FT **Reps:** 4
Study Design: RANDOMIZED COMPLETE BLOCK

APPLICATION DESCRIPTION

	A	B
Application Date:	04-03-02	07-30-02
Time of Day:	1:15 PM	3:30-4 PM
Application Method:	Spray	Spray
Application Timing:	Pre	Post
Applic. Placement:	Soil	Foliar
Air Temp., Unit:	83.9 F	97.1 F
% Relative Humidity:	47	50
Wind Velocity, Unit:	2.5 MPH	1.3 MPH
Dew Presence (Y/N):	N	N
Water Hardness:	N/A	N/A
Soil Temp., Unit:	73 F	90 F
Soil Moisture:	Good	Good
% Cloud Cover:	25	20

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	FESAR Mowed	FESAR Mowed
Height, Unit:	4 Inch	4 Inch

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	DIGIS Pre to	DIGIS 0-4 Till.
Stage Scale:	1 Leaf	3-15 Leaf
Density, Unit:	2 Ft ²	20 Ft ²

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO2 Spray	CO2 Spray
Operating Pressure:	36 PSI	36 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	8002 XR	8002 XR
Nozzle Spacing, Unit:	10 Inch	10 Inch
Boom Height, Unit:	10 Inch	10 Inch
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	Water	Water
Spray Volume, Unit:	32.5 GPA	32.5 GPA
Propellant:	Compr.CO2	Compr.CO2

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								DIGIS	DIGIS	DIGIS	DIGIS		
								CONTROL	CONTROL	CONTROL	CONTROL		
								%	%	%	%		
								07-16-02	08-06-02	08-15-02	08-29-02		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	Mesotrione	4	SC	140	G A/A			Pre	A	47.5 bc	32.5 b	37.5 b	25.0 b
2	Mesotrione	4	SC	280	G A/A			Pre	A	82.5 ab	56.3 b	43.8 b	31.3 b
3	Mesotrione	4	SC	560	G A/A			Pre	A	80.0 ab	35.0 b	41.3 b	18.8 bc
4	Mesotrione	4	SC	140	G A/A			Pre	A	23.8 cd	45.0 b	82.5 a	77.5 a
	Mesotrione	4	SC	140	G A/A			Post	B				
	X-77		L	0.25	% V/V			Post	B				
5	Mesotrione	4	SC	140	G A/A			Pre	A	55.0 bc	55.0 b	86.3 a	93.8 a
	Mesotrione	4	SC	280	G A/A			Post	B				
	X-77		L	0.25	% V/V			Post	B				
6	Mesotrione	4	SC	280	G A/A			Pre	A	65.0 ab	60.0 b	88.8 a	93.8 a
	Mesotrione	4	SC	280	G A/A			Post	B				
	X-77		L	0.25	% V/V			Post	B				
7	Mesotrione	4	SC	560	G A/A			Pre	A	61.3 bc	60.0 b	90.0 a	96.3 a
	Mesotrione	4	SC	560	G A/A			Post	B				
	X-77		L	0.25	% V/V			Post	B				
8	Barricade	65	WG	1.15	LB A/A			Pre	A	99.5 a	95.0 a	91.3 a	86.3 a
9	Mesotrione	4	SC	140	G A/A			Post	B	0.0 d	45.0 b	75.0 a	77.5 a
	X-77		L	0.25	% V/V			Post	B				
10	Mesotrione	4	SC	280	G A/A			Post	B	0.0 d	43.8 b	87.5 a	95.0 a
	X-77		L	0.25	% V/V			Post	B				
11	Mesotrione	4	SC	560	G A/A			Post	B	0.0 d	50.0 b	90.0 a	98.5 a
	X-77		L	0.25	% V/V			Post	B				
12	Nontreated									0.0 d	0.0 c	0.0 c	0.0 c
LSD (P=.05)								38.20	28.57	27.58	23.30		
Standard Deviation								26.46	19.79	19.10	16.13		
CV								61.71	41.11	28.17	24.4		
Bartlett's X2								23.911	13.927	43.927	54.32		
P(Bartlett's X2)								0.001*	0.176	0.001*	0.001*		
Replicate F								3.757	13.703	2.171	3.827		
Replicate Prob(F)								0.0200	0.0001	0.1101	0.0186		
Treatment F								7.725	4.985	9.735	20.260		
Treatment Prob(F)								0.0001	0.0002	0.0001	0.0001		

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

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Weed Code								DIGIS CONTROL		
Rating Data Type								%		
Rating Unit								09-19-02		
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	
1	Mesotrione	4	SC	140	G A/A			Pre	A	0.0 d
2	Mesotrione	4	SC	280	G A/A			Pre	A	35.0 c
3	Mesotrione	4	SC	560	G A/A			Pre	A	18.8 cd
4	Mesotrione	4	SC	140	G A/A			Pre	A	76.3 ab
	Mesotrione	4	SC	140	G A/A			Post	B	
	X-77		L	0.25	% V/V			Post	B	
5	Mesotrione	4	SC	140	G A/A			Pre	A	86.3 ab
	Mesotrione	4	SC	280	G A/A			Post	B	
	X-77		L	0.25	% V/V			Post	B	
6	Mesotrione	4	SC	280	G A/A			Pre	A	88.8 ab
	Mesotrione	4	SC	280	G A/A			Post	B	
	X-77		L	0.25	% V/V			Post	B	
7	Mesotrione	4	SC	560	G A/A			Pre	A	98.8 a
	Mesotrione	4	SC	560	G A/A			Post	B	
	X-77		L	0.25	% V/V			Post	B	
8	Barricade	65	WG	1.15	LB A/A			Pre	A	83.8 ab
9	Mesotrione	4	SC	140	G A/A			Post	B	71.3 b
	X-77		L	0.25	% V/V			Post	B	
10	Mesotrione	4	SC	280	G A/A			Post	B	86.3 ab
	X-77		L	0.25	% V/V			Post	B	
11	Mesotrione	4	SC	560	G A/A			Post	B	93.8 ab
	X-77		L	0.25	% V/V			Post	B	
12	Nontreated								0.0 d	
LSD (P=.05)										23.28
Standard Deviation										16.12
CV										26.19
Bartlett's X2										38.605
P(Bartlett's X2)										0.001*
Replicate F										4.481
Replicate Prob(F)										0.0096
Treatment F										21.406
Treatment Prob(F)										0.0001

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Trial Comments