

North Carolina State University

Annual grass control with tank-mix and sequential applications of Ignite and Graminicides

Trial ID: AG-01d-04
Location: CENTRAL CROPS (W5)

Study Dir.: ANDREW GARDNER
Investigator: Alan C. York

GENERAL TRIAL INFORMATION

Study Director: ANDREW GARDNER
Investigator: ALAN C. YORK
Affiliation: NORTH CAROLINA STATE UNIVERSITY
Postal Code: 27695-7620

Title: GRADUATE STUDENT
Title: PROFESSOR

TRIAL LOCATION

City: CLAYTON
State/Prov.: NC
Postal Code: 27520-2127
Country: USA

Trial Status: COMPLETED
Initiation Date: Jun-23-04
Planned Completion Date: Jul-19-04

COOPERATOR/LANDOWNER

Cooperator: CENTRAL CROPS RESEARCH STATION

Phone No: 919-553-2141

Address 1: 13223 US 70 WEST
City: CLAYTON
State/Prov.: NC
Postal Code: 27520-2127

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	DIGSA	CRABGRASS, LARGE	DIGITARIA SANGUINALIS (L.) SCOP.

NO CROP

SITE AND DESIGN

Plot Width, Unit: 11 FT **Plot Length, Unit:** 10 FT **Reps:** 4
Site Type: RESEARCH STATION
Tillage Type: CONVENTIONAL **Study Design:** SPLIT-PLOT

SOIL DESCRIPTION

% OM: 0.76 **Texture:** LOAMY SAND
pH: 5.8
CEC: 2.3

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MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.	Jun-16-04		0.03	IN	RAINFALL		
2.	Jun-19-04		0.02	IN	RAINFALL		
3.	Jun-24-04		0.06	IN	RAINFALL		
4.	Jun-25-04		1.66	IN	RAINFALL		
5.	Jun-26-04		0.08	IN	RAINFALL		
6.	Jun-28-04		0.37	IN	RAINFALL		
7.	Jun-29-04		0.19	IN	RAINFALL		
8.	Jul-01-04		0.03	IN	RAINFALL		
9.	Jul-04-04		0.26	IN	RAINFALL		
10.	Jul-10-04		0.69	IN	RAINFALL		
11.	Jul-11-04		0.01	IN	RAINFALL		
12.	Jul-12-04		0.61	IN	RAINFALL		
13.	Jul-14-04		0.12	IN	RAINFALL		
14.	Jul-17-04		0.02	IN	RAINFALL		
15.	Jul-18-04		0.12	IN	RAINFALL		
16.	Jul-22-04		0.22	IN	RAINFALL		
17.	Jul-23-04		0.66	IN	RAINFALL		
18.	Jul-29-04		2.07	IN	RAINFALL		
19.	Jul-30-04		0.50	IN	RAINFALL		
20.	Jul-31-04		0.07	IN	RAINFALL		
21.	Aug-01-04		0.01	IN	RAINFALL		
22.	Aug-02-04		0.42	IN	RAINFALL		
23.	Aug-03-04		0.03	IN	RAINFALL		
24.	Aug-05-04		0.78	IN	RAINFALL		
25.	Aug-06-04		0.15	IN	RAINFALL		
26.	Aug-12-04		0.48	IN	RAINFALL		
27.	Aug-13-04		0.22	IN	RAINFALL		
28.	Aug-14-04		0.96	IN	RAINFALL		
29.	Aug-15-04		3.74	IN	RAINFALL		
30.	Aug-16-04		0.02	IN	RAINFALL		
31.	Aug-21-04		0.45	IN	RAINFALL		
32.	Aug-29-04		0.68	IN	RAINFALL		

Overall Moisture Conditions: GOOD

Closest Weather Station: CENTRAL CROPS RESEARCH STATION **Distance:** 0.5 **Unit:** MI

APPLICATION DESCRIPTION

	A	B	C	D	E	F	G	H
Application Date:	Jun-23-04	Jun-25-04	Jun-27-04	Jun-28-04	Jun-29-04	Jul-01-04	Jul-03-04	Jul-05-04
Time of Day:	10:00 AM	9:15 AM	2:30 PM	6:30 PM	6:00 PM	9:00 AM	11:30 AM	12:30 PM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	-5 DAYS	-3 DAYS	-1 DAYS	0 DAY	+1 DAYS	+3 DAYS	+5 DAYS	+7 DAYS
Applic. Placement:	BRO-FOL	BRO-FOL	BRO-FOL	BRO-FOL	BRO-FOL	BRO-FOL	BRO-FOL	BRO-FOL
Air Temp., Unit:	84 F	81 F	77 F	76 F	87 F	76 F	84 F	91 F
% Relative Humidity:	75	85	63	90	48	90	78	60
Wind Velocity, Unit:	2.5 MPH	3 MPH	5 MPH	0 MPH	0.5 MPH	2 MPH	1 MPH	1 MPH
Dew Presence (Y/N):	N	Y	N	N	N	Y	N	N
Soil Temp., Unit:	82 F	77 F	74 F	75 F	78 F	71 F	79 F	94 F
Soil Moisture:	GOOD	GOOD	GOOD	WET	GOOD	GOOD	GOOD	GOOD
% Cloud Cover:	35	80	90	85	25	100	25	30

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	DIGSA 7.5-8.5"	DIGSA 8-11"	DIGSA 8-12"	DIGSA 11-12"	DIGSA 12-23"
Stage Scale:	2-3 TILL	5-8 TILL	4 TILL	6 TILL	4-7 TILL

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	F	G	H
Weed 1 Code, Stage:	DIGSA 12-22"	DIGSA 9-12"	DIGSA 10-12"
Stage Scale:	3-7 TILL	3-4 TILL	3-4 TILL

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK
Operating Pressure:	23 PSI	23 PSI	23 PSI	23 PSI	23 PSI	23 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR11002	XR11002	XR11002	XR11002	XR11002	XR11002
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN	18 IN	18 IN	18 IN
Boom Length, Unit:	90 IN	90 IN	90 IN	90 IN	90 IN	90 IN
Boom Height, Unit:	16 IN	16 IN	16 IN	16 IN	16 IN	16 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH	3 MPH	3 MPH	3 MPH
Carrier:	H2O	H2O	H2O	H2O	H2O	H2O
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA
Propellant:	CO2	CO2	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	N	N	N	Y	N	N

	G	H
Appl. Equipment:	BACKPACK	BACKPACK
Operating Pressure:	23 PSI	23 PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	18 IN	18 IN
Boom Length, Unit:	90 IN	90 IN
Boom Height, Unit:	16 IN	16 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	H2O	H2O
Spray Volume, Unit:	15 GPA	15 GPA
Propellant:	CO2	CO2
Tank Mix (Y/N):	N	N

Trt No	Treatment Application Comment
	DAY 0 SPRAYED SHORTLY AFTER RAIN, GRASS WAS WET

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Annual grass control with tank-mix and sequential applications of Ignite and Graminicides

Trial ID: AG-01d-04
Location: CENTRAL CROPS (W5)

Study Dir.: ANDREW GARDNER
Investigator: Alan C. York

Weed Code						DIGSA	DIGSA	DIGSA	
Rating Data Type						control	control	control	
Rating Unit						%	%	%	
Rating Date						Jul-06-04	Jul-12-04	Jul-19-04	
Assessed By						AG	AG	AG	
Trt-Eval Interval						7 DAT-D	14 DAT-D	21 DAT-D	
ARM Action Codes						L05e	L05e	L05e	
# Subsamples, Dec.						0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg	Appl Code			
1	Select 6 fl oz Ignite Graminicide -5 days COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST -5 days POST -5 days	D A A	75 a-e	89 a	90 a
2	Select 6 fl oz Ignite Graminicide -3 days COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST -3 days POST -3 days	D B B	77 a-e	86 ab	89 ab
3	Select 6 fl oz Ignite Graminicide -1 day COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST -1 day POST -1 day	D C C	74 a-e	85 a-d	88 abc
4	Select 6 fl oz Ignite Graminicide 0 day COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST 0 day POST 0 day	D D D	65 efg	79 a-e	86 a-e
5	Select 6 fl oz Ignite Graminicide +1 day COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST +1 day POST +1 day	D E E	52 gh	80 a-e	87 a-d
6	Select 6 fl oz Ignite Graminicide +3 days COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST +3 days POST +3 days	D F F	9 jk	76 a-f	86 a-e
7	Select 6 fl oz Ignite Graminicide +5 days COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST +5 days POST +5 days	D G G	5 jk	70 d-h	84 a-f
8	Select 6 fl oz Ignite Graminicide +7 days COC	1.67 L	L	0 FL OZ/A 1.0 % V/V	POST 0 day POST +7 days POST +7 days	D H H	1 jk	28 j	83 a-g
9	Select 6 fl oz Ignite No graminicide (check)	1.67 L	L	0 FL OZ/A	POST 0 day	D	0	0	0
10	Select 6 fl oz Ignite Graminicide -5 days COC	1.67 L	L	32 FL OZ/A 1.0 % V/V	POST 0 day POST -5 days POST -5 days	D A A	87 a	88 a	88 ab
11	Select 6 fl oz Ignite Graminicide -3 days COC	1.67 L	L	32 FL OZ/A 1.0 % V/V	POST 0 day POST -3 days POST -3 days	D B B	81 abc	86 abc	87 a-d
12	Select 6 fl oz Ignite Graminicide -1 day COC	1.67 L	L	32 FL OZ/A 1.0 % V/V	POST 0 day POST -1 day POST -1 day	D C C	84 ab	75 a-f	83 a-g
13	Select 6 fl oz Ignite Graminicide 0 day COC	1.67 L	L	32 FL OZ/A 1.0 % V/V	POST 0 day POST 0 day POST 0 day	D D D	60 fgh	71 c-h	80 b-k
14	Select 6 fl oz Ignite Graminicide +1 day COC	1.67 L	L	32 FL OZ/A 1.0 % V/V	POST 0 day POST +1 day POST +1 day	D E E	83 ab	67 e-h	79 c-l

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Weed Code						DIGSA	DIGSA	DIGSA	
Rating Data Type						control	control	control	
Rating Unit						%	%	%	
Rating Date						Jul-06-04	Jul-12-04	Jul-19-04	
Assessed By						AG	AG	AG	
Trt-Eval Interval						7 DAT-D	14 DAT-D	21 DAT-D	
ARM Action Codes						L05e	L05e	L05e	
# Subsamples, Dec.						0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Grow Stg	Appl Code			
15	Select 6 fl oz Ignite Graminicide +3 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +3 days POST +3 days	D F F	77 a-e	78 a-f	78 d-l
16	Select 6 fl oz Ignite Graminicide +5 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +5 days POST +5 days	D G G	80 a-d	76 a-f	82 a-h
17	Select 6 fl oz Ignite Graminicide +7 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +7 days POST +7 days	D H H	80 a-d	72 b-g	81 a-i
18	Select 6 fl oz Ignite No graminicide	1.67 L	L	32 FL OZ/A	POST 0 day	D	79 a-d	51 i	45 o
19	Fusilade DX 12 fl oz Ignite Graminicide -5 days COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST -5 days POST -5 days	D A A	72 b-f	66 e-i	69 lmn
20	Fusilade DX 12 fl oz Ignite Graminicide -3 days COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST -3 days POST -3 days	D B B	68 c-f	69 e-h	77 e-m
21	Fusilade DX 12 fl oz Ignite Graminicide -1 day COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST -1 day POST -1 day	D C C	50 h	69 e-h	74 g-n
22	Fusilade DX 12 fl oz Ignite Graminicide 0 day COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST 0 day POST 0 day	D D D	34 i	72 b-g	76 f-m
23	Fusilade DX 12 fl oz Ignite Graminicide +1 day COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST +1 day POST +1 day	D E E	15 j	64 f-i	77 e-m
24	Fusilade DX 12 fl oz Ignite Graminicide +3 days COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST +3 days POST +3 days	D F F	10 jk	63 f-i	81 a-i
25	Fusilade DX 12 fl oz Ignite Graminicide +5 days COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST +5 days POST +5 days	D G G	8 jk	58 ghi	81 a-j
26	Fusilade DX 12 fl oz Ignite Graminicide +7 days COC	1.67 L	L	0 FL OZ/A % V/V	POST 0 day POST +7 days POST +7 days	D H H	0 k	23 j	79 c-l
27	Fusilade DX 12 fl oz Ignite No graminicide (check)	1.67 L	L	0 FL OZ/A	POST 0 day	D	0	0	0
28	Fusilade DX 12 fl oz Ignite Graminicide -5 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST -5 days POST -5 days	D A A	76 a-e	66 e-i	71 k-n
29	Fusilade DX 12 fl oz Ignite Graminicide -3 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST -3 days POST -3 days	D B B	79 a-e	56 hi	73 i-n
30	Fusilade DX 12 fl oz Ignite Graminicide -1 day COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST -1 day POST -1 day	D C C	75 a-e	75 a-f	74 h-n

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Weed Code						DIGSA	DIGSA	DIGSA	
Rating Data Type						control	control	control	
Rating Unit						%	%	%	
Rating Date						Jul-06-04	Jul-12-04	Jul-19-04	
Assessed By						AG	AG	AG	
Trt-Eval Interval						7 DAT-D	14 DAT-D	21 DAT-D	
ARM Action Codes						L05e	L05e	L05e	
# Subsamples, Dec.						0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	Appl Code			
31	Fusilade DX 12 fl oz Ignite Graminicide 0 day COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST 0 day POST 0 day	D D D	66 def	68 e-h	69 mn
32	Fusilade DX 12 fl oz Ignite Graminicide +1 day COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +1 day POST +1 day	D E E	78 a-e	68 e-h	71 k-n
33	Fusilade DX 12 fl oz Ignite Graminicide +3 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +3 days POST +3 days	D F F	79 a-e	68 e-h	71 j-n
34	Fusilade DX 12 fl oz Ignite Graminicide +5 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +5 days POST +5 days	D G G	79 a-e	70 d-h	74 h-n
35	Fusilade DX 12 fl oz Ignite Graminicide +7 days COC	1.67 L	L	32 FL OZ/A % V/V	POST 0 day POST +7 days POST +7 days	D H H	74 a-e	76 a-f	80 a-k
36	Fusilade DX 12 fl oz Ignite No graminicide	1.67 L	L	32 FL OZ/A	POST 0 day	D	70 b-f	66 e-h	66 n
LSD (P=.05)						13.8	15.0	9.7	
Standard Deviation						9.8	10.7	6.9	
CV						16.73	15.55	8.83	
Bartlett's X2						85.853	102.592	120.928	
P(Bartlett's X2)						0.001*	0.001*	0.001*	
Replicate F						5.150	2.819	3.579	
Replicate Prob(F)						0.0024	0.0431	0.0167	
Treatment F						34.564	7.031	6.457	
Treatment Prob(F)						0.0001	0.0001	0.0001	

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

Mean separations are based on the complete error term.

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

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Trial ID: AG-01d-04
Location: CENTRAL CROPS (W5)

Study Dir.: ANDREW GARDNER
Investigator: Alan C. York

COMPLETE SPLIT-PLOT AOV For DIGSA control % Jul-06-04 AG 7 DAT-D L05e 0

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	143	147623.993056				
R	3	1409.354167	469.784722	5.231	0.0412	5
A	1	2047.562500	2047.562500	40.436	0.0079	4
ERROR A	3	151.909722	50.636574			
B	1	66177.562500	66177.562500	736.841	0.0001	4
AB	1	502.506944	502.506944	5.595	0.0559	5
ERROR B	6	538.875000	89.812500			
C	8	32606.805556	4075.850694	42.200	0.0001	7
AC	8	1810.250000	226.281250	2.343	0.0241	10
BC	8	30651.000000	3831.375000	39.669	0.0001	10
ABC	8	2456.055556	307.006944	3.179	0.0031	14
ERROR C	96	9272.111111	96.584491			

COMPLETE SPLIT-PLOT AOV For DIGSA control % Jul-12-04 AG 14 DAT-D L05e 0

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	143	76731.750000				
R	3	920.916667	306.972222	1.045	0.4383	10
A	1	2809.000000	2809.000000	39.740	0.0081	4
ERROR A	3	212.055556	70.685185			
B	1	4466.694444	4466.694444	15.205	0.0080	7
AB	1	427.111111	427.111111	1.454	0.2733	10
ERROR B	6	1762.638889	293.773148			
C	8	31895.500000	3986.937500	34.580	0.0001	8
AC	8	3036.750000	379.593750	3.292	0.0023	11
BC	8	19457.555556	2432.194444	21.095	0.0001	11
ABC	8	675.138889	84.392361	0.732	0.6630	15
ERROR C	96	11068.388889	115.295718			

COMPLETE SPLIT-PLOT AOV For DIGSA control % Jul-19-04 AG 21 DAT-D L05e 0

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	143	61499.972222				
R	3	482.083333	160.694444	4.298	0.0611	4
A	1	2040.027778	2040.027778	138.134	0.0013	2
ERROR A	3	44.305556	14.768519			
B	1	225.000000	225.000000	6.018	0.0496	2
AB	1	53.777778	53.777778	1.438	0.2756	4
ERROR B	6	224.333333	37.388889			
C	8	38339.097222	4792.387153	100.798	0.0001	5
AC	8	2166.097222	270.762153	5.695	0.0001	7
BC	8	12889.875000	1611.234375	33.889	0.0001	7
ABC	8	471.097222	58.887153	1.239	0.2853	10
ERROR C	96	4564.277778	47.544560			

Trial Comments

Soil analysis performed by NCDA Agronomic Division. In Soil Description section, % organic matter (%OM) is actually % humic matter.

DIGSA density of 30/square foot.