

Influence of Spray pH on Ignite Efficacy.

Trial ID: 08-2A-E45 Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Belleville IL 62221 USA
 Trial Status: FINAL Initiation Date: 06-16-08

Objectives: Determine the influence of spray pH modifiers
 on the efficacy of glufosinate (Ignite 280).

Crop 1: ZEAMD Dent corn Variety: DKC 61-73 RR2/YGCB
 Planting Method: SEED Planting Date: 06-16-08
 Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: GGGAN grasses, annual
 Pest 2 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common
 Pest 3 Type: W Code: AMBTR Ambrosia trifida L. ragweed, giant
 Pest 4 Type: W Code: ABUTH Abutilon theophrasti Medicus velvetleaf
 Pest 5 Type: W Code: ZEAMX Zea mays L. corn, volunteer
 Pest Description: glyphosate-resistant

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 28 FT Tillage Type: REDUCED-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. GLXMA 2007

Field Prep./Maintenance: N 150 LB/A, P205 0 LB/A, K20 100 LB/A

% OM: 1.6 Texture: SILT LOAM
 pH: 6.2 Soil Name: PIERRON
 CEC: 7 Fert. Level: P1:93 LB/A, K:448 LB/A

Application Description

A
 Application Date: 07-11-08
 Time of Day: 8:00
 Application Method: Spray
 Application Timing: 6-8"W
 Application Placement: BROFOL
 Applied By: DKT
 Air Temperature, Unit: 84 F
 % Relative Humidity: 92
 Wind Velocity, Unit: 1 MPH
 Dew Presence (Y/N): N
 Soil Temperature, Unit: 86 F
 Soil Moisture: ABONOR
 % Cloud Cover: 90

Crop stage at application: 07-11-08 V7
 Height Min, Max (inch): 26 34

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Pest Stage At Each Application

Application Date: 07-07-08
Weed Code: GGGAN
Stage Majority (leaves): 6
Stage Min, Max: 3 9
Height Majority: 8 IN
Height Min, Max: 5 14
Density, Unit: 20 FT2
Weed Code: AMATA
Stage Majority (leaves): 18
Stage Min, Max: 2 26
Height Majority: 8 IN
Height Min, Max: 1 12
Density, Unit: 7 FT2
Weed Code: AMBTR
Stage Majority (leaves): 2
Stage Min, Max: 2 4
Height Majority: 1 IN
Height Min, Max: 0.5 1
Density, Unit: 0.5 FT2
Weed Code: ABUTH
Stage Majority (leaves): 5
Stage Min, Max: 3 7
Height Majority: 8 IN
Height Min, Max: 2 12
Density, Unit: 0.5 FT2
Weed Code: ZEAMX
Stage Majority (leaves): 7
Stage Min, Max: 6 7
Height Majority: 34 IN
Height Min, Max: 26 34
Density, Unit: 1 FT2

Application Equipment

Appl. Equipment: CO2 sprayer
Operating Pressure: 30 PSI
Nozzle Type: Flat fan
Nozzle Size: XR 8002
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: 15 GPA

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										GGGAN	GGGAN	AMATA	AMATA	AMBTR	AMBTR
										07-25-08	08-08-08	07-25-08	08-08-08	07-25-08	08-08-08
										Control	Control	Control	Control	Control	Control
										Percent	Percent	Percent	Percent	Percent	Percent
										14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	DEIONIZED WATER									72 abc	67 a	40 a	25 a	55 bc	53 bc
1	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
1	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A						
1	AMS	100	SG	1	% w/w	8.5	lb/100 gal	6-8"W	A						
2	SEE COMMENT 7														
2	DEIONIZED WATER														
2	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
2	SURFATE	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
3	DEIONIZED WATER									58 bc	50 ab	50 a	43 a	68 ab	67 ab
3	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
3	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
4	DEIONIZED WATER									78 ab	53 ab	33 a	22 a	62 abc	53 bc
4	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
4	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A						
4	AMADS	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A						
5	HARD WATER (500 PPM)									57 c	40 b	33 a	23 a	60 abc	38 c
5	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
5	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A						
5	AMS	100	SG	1	% w/w	8.5	lb/100 gal	6-8"W	A						
6	SEE COMMENT 7														
6	HARD WATER (500 PPM)														
6	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
6	SURFATE	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
7	HARD WATER (500 PPM)									73 abc	58 ab	33 a	20 a	43 c	47 bc
7	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
7	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
8	HARD WATER (500 PPM)									80 a	58 ab	53 a	47 a	77 a	80 a
8	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A						
8	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A						
8	AMADS	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A						
LSD (P=.05)										20.6	21.1	25.5	33.5	20.8	25.9
Replicate F										2.158	2.299	4.972	6.966	5.382	13.550
Replicate Prob(F)										0.1663	0.1508	0.0317	0.0127	0.0259	0.0014
Treatment F										2.328	1.823	1.250	1.229	2.975	3.257
Treatment Prob(F)										0.1197	0.1960	0.3560	0.3644	0.0670	0.0529

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

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Pest Code	ABUTH	ABUTH	ZEAMX	ZEAMX
Crop Code				
Rating Date	07-25-08	08-08-08	07-25-08	08-08-08
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Timing				
Trt-Eval Interval	14 DA-A	28 DA-A	14 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	DEIONIZED WATER									53 a	37 a	67 ab	70 ab
1	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
1	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A				
1	AMS	100	SG	1	% w/w	8.5	lb/100 gal	6-8"W	A				
2	SEE COMMENT 7												
2	DEIONIZED WATER												
2	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
2	SURFATE	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
3	DEIONIZED WATER									55 a	47 a	73 ab	75 ab
3	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
3	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
4	DEIONIZED WATER									63 a	52 a	76 ab	78 ab
4	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
4	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A				
4	AMADS	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
5	HARD WATER (500 PPM)									60 a	43 a	68 ab	68 b
5	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
5	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A				
5	AMS	100	SG	1	% w/w	8.5	lb/100 gal	6-8"W	A				
6	SEE COMMENT 7												
6	HARD WATER (500 PPM)												
6	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
6	SURFATE	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
7	HARD WATER (500 PPM)									53 a	47 a	65 b	65 b
7	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
7	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A				
8	HARD WATER (500 PPM)									70 a	68 a	83 a	83 a
8	IGNITE 280	2.34	EC	0.293	lb ai/a	16	fl oz/a	6-8"W	A				
8	ACTIVATOR 90	100	SL	0.25	% v/v	0.25	% v/v	6-8"W	A				
8	AMADS	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A				
LSD (P=.05)										32.4	44.1	16.8	14.9
Replicate F										0.276	2.504	2.015	1.750
Replicate Prob(F)										0.7647	0.1314	0.1840	0.2230
Treatment F										0.417	0.589	1.659	2.100
Treatment Prob(F)										0.8265	0.7090	0.2316	0.1489

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

Trial Comments

1. Protocol: NDSU.
2. Ratings: CI/WC 14 + 28 DAT.
3. Hard water was created using deionized water and the addition of CaCl₂ to the desired level.
4. Mixing instructions: Use deionized and hard water (500 ppm).
5. DA-A = Days after 6-8"W application. GGGAN = Annual grasses including SETFA and PANDI.
6. At the Belleville Research Center the above normal rainfall in spring 2008 (no more than four consecutive rain-free days between March 22 and June 15) delayed corn and soybean planting until mid-June.
7. Treatments 2 and 6 were not applied, adjuvant product was not available.
8. Not harvested.