

Southern Illinois University

NUP-12004 Preplant Burndown in Corn.

Trial ID: 12-YRC-FP-NuFarm
 Location: Young Res. Center

Investigator: Bryan Young

General Trial Information	
Study Director: Bryan Young	Investigator: Bryan Young Title: Professor
Trial Status: F - one-year/final	
Initiation Date: 4-18-12	
Trial Location	
City: Murphysboro	
State/Prov.: IL	
Postal Code: 62966	
Country: USA	

Objectives: Evaluate efficacy of NUP-12004 as a corn preplant burndown herbicide of grasses and glyphosate-resistant broadleaf weeds.

Personnel	
Study Director: Bryan Young	Title: Professor
Investigator: Bryan Young	
Affiliation: Southern Illinois University	
Address: 1205 Lincoln Drive - AG 176 - MC 4415	
Location: Carbondale IL	
Postal Code: 62901	E-mail: bgyoung@siu.edu
Phone No.: 618-453-7679	Mobile No.: 618-713-6471

Crop Description	
Crop 1: ZEAMD Zea mays indentata Dent corn	Description: RR2/LL
Variety: DKC 61-06	Planting Date: 4-25-12
BBCH Scale: BCOR	Rate, Unit: 31000 S/A
Planting Method: SEED	Seeded
Depth, Unit: 2 IN	
Row Spacing, Unit: 30 IN	

Pest Description	
Pest 1 Type: W Code: ERICA - Conyza canadensis (L.) Crong.	Common Name: horseweed
	Description: glyphosate-resistant marestalk
Pest 2 Type: W Code: AMATA - Amaranthus rudis Sauer	Common Name: waterhemp, common
	Description: glyphosate-resistant waterhemp
Pest 3 Type: W Code: VERAR - Veronica arvensis L.	Common Name: speedwell, corn
Pest 4 Type: W Code: OXAST - Oxalis stricta L.	Common Name: woodsorrel, yellow

Site and Design	
Plot Width, Unit: 10 FT	Site Type: FIELD field
Plot Length, Unit: 25 FT	
Plot Area, Unit: 250 FT ²	Tillage Type: NOTILL no-till
Replications: 3	Study Design: RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	ZEAMD	2011

Maintenance	
No.	Maintenance Treatment Name
1.	N 177 LB/A, P205 69 LB/A, K20 90 LB/A

Soil Description	
% OM: 1.82	Texture: SIL SILT LOAM
pH: 6.2	Soil Name: ALVIN
CEC: 6.16	

Additional Measured Elements		
Element	Quantity	Unit
P1	154	LB/A
K	264	LB/A

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Moisture and Weather Conditions	
Overall Moisture Conditions:	BELNOR below normal
Closest Weather Station:	SOUTHERN IL AIRPORT (93810) Distance, Unit: 3.5 MI

Application Description	
	A
Application Date:	4-18-12
Time of Day:	17:00
Application Method:	Spray
Application Timing:	7DBP
Application Placement:	BROFOL
Applied By:	JRK
Air Temperature, Unit:	80 F
% Relative Humidity:	37
Wind Velocity, Unit:	0 MPH
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	69 F
Soil Moisture:	NORMAL
% Cloud Cover:	3
Next Rain Occurred On:	4-20-12

Crop Stage At Each Application	
	A
Crop 1 Code, BBCH Scale:	ZEAMD BCOR
Stage Scale Used:	DESC
Stage Majority, Percent:	NA

Pest Stage At Each Application	
	A
Pest 1 Code, Type, Scale:	ERICA W DESC
Stage Majority, Percent:	16
Stage Minimum, Percent:	4
Stage Maximum, Percent:	34
Height, Unit:	4 IN
Height Minimum, Maximum:	1 7
Density, Unit:	2 FT2
Pest 2 Code, Type, Scale:	AMATA W DESC
Stage Majority, Percent:	4
Stage Minimum, Percent:	Coty
Stage Maximum, Percent:	8
Height, Unit:	1 IN
Height Minimum, Maximum:	0.25 3
Density, Unit:	30 FT2
Pest 3 Code, Type, Scale:	VERAR W DESC
Stage Majority, Percent:	30
Stage Minimum, Percent:	10
Stage Maximum, Percent:	40
Height, Unit:	8 IN
Height Minimum, Maximum:	3 10
Density, Unit:	8 FT2
Pest 4 Code, Type, Scale:	OXAST W DESC
Stage Majority, Percent:	2
Stage Minimum, Percent:	2
Stage Maximum, Percent:	4
Height, Unit:	0.5 IN
Height Minimum, Maximum:	0.5 1
Density, Unit:	0.001 FT2

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Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	XR
Nozzle Size:	8002
Boom Length, Unit:	6.67 FT
Spray Volume, Unit:	15 GPA

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Pest Code								ZEAMD	ZEAMD
Crop Code								5-4-12	5-16-12
Rating Date								Injury	Injury
Rating Type								Percent	Percent
Rating Unit									
Rating Timing									
Trt-Eval Interval								16 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit	Appl Stage
1	NONTREATED								
2	NUP-12004 NIS (ACTIVATOR 90)	3.52 100	EC SL	0.33 0.25	lb ae/a % v/v	12 0.25	fl oz/a % v/v	7DBP 7DBP	A A
3	NUP-12004 NIS (ACTIVATOR 90)	3.52 100	EC SL	0.495 0.25	lb ae/a % v/v	18 0.25	fl oz/a % v/v	7DBP 7DBP	A A
4	WEEDONE LV 4 EC NIS (ACTIVATOR 90)	3.84 100	EC SL	0.48 0.25	lb ae/a % v/v	16 0.25	fl oz/a % v/v	7DBP 7DBP	A A
5	CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	4.5 100 100	SL SL SL	0.77 0.25 2.5	lb ae/a % v/v % v/v	22 0.25 2.5	fl oz/a % v/v % v/v	7DBP 7DBP 7DBP	A A A
6	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 4.5 100 100	EC SL SL SL	0.33 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	12 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A
7	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 4.5 100 100	EC SL SL SL	0.495 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	18 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A
8	WEEDONE LV 4 EC CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.84 4.5 100 100	EC SL SL SL	0.48 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	16 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A
LSD (P=.05)								0.0	0.0
Standard Deviation								0.0	0.0
CV								0.0	0.0
Replicate F								0.000	0.000
Replicate Prob(F)								1.0000	1.0000
Treatment F								0.000	0.000
Treatment Prob(F)								1.0000	1.0000

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 Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								ERICA-HR	ERICA-HR	ERICA-HR	ERICA-HR		
								4-21-12 Control Percent	4-25-12 Control Percent	5-2-12 Control Percent	5-16-12 Control Percent		
								3 DA-A	7 DA-A	14 DA-A	28 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit	Appl Code				
1	NONTREATED									0 d	0 e	0 d	0 d
2	NUP-12004 NIS (ACTIVATOR 90)	3.52 EC 100 SL		0.33 lb 0.25 %	ae/a v/v	12 fl 0.25 %	oz/a v/v	7DBP 7DBP	A A	38 b	67 abc	82 ab	87 b
3	NUP-12004 NIS (ACTIVATOR 90)	3.52 EC 100 SL		0.495 lb 0.25 %	ae/a v/v	18 fl 0.25 %	oz/a v/v	7DBP 7DBP	A A	43 a	70 ab	85 a	92 ab
4	WEEDONE LV 4 EC NIS (ACTIVATOR 90)	3.84 EC 100 SL		0.48 lb 0.25 %	ae/a v/v	16 fl 0.25 %	oz/a v/v	7DBP 7DBP	A A	33 c	65 bc	75 b	90 ab
5	CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	4.5 SL 100 SL 100 SL		0.77 lb 0.25 % 2.5 %	ae/a v/v v/v	22 fl 0.25 % 2.5 %	oz/a v/v v/v	7DBP 7DBP 7DBP	A A A	3 d	17 d	45 c	55 c
6	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 EC 4.5 SL 100 SL 100 SL		0.33 lb 0.77 lb 0.25 % 2.5 %	ae/a ae/a v/v v/v	12 fl 22 fl 0.25 % 2.5 %	oz/a oz/a v/v v/v	7DBP 7DBP 7DBP 7DBP	A A A A	45 a	71 ab	83 a	94 a
7	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 EC 4.5 SL 100 SL 100 SL		0.495 lb 0.77 lb 0.25 % 2.5 %	ae/a ae/a v/v v/v	18 fl 22 fl 0.25 % 2.5 %	oz/a oz/a v/v v/v	7DBP 7DBP 7DBP 7DBP	A A A A	45 a	72 a	88 a	93 ab
8	WEEDONE LV 4 EC CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.84 EC 4.5 SL 100 SL 100 SL		0.48 lb 0.77 lb 0.25 % 2.5 %	ae/a ae/a v/v v/v	16 fl 22 fl 0.25 % 2.5 %	oz/a oz/a v/v v/v	7DBP 7DBP 7DBP 7DBP	A A A A	30 c	62 c	82 ab	94 a
LSD (P=.05)								3.6	6.2	7.6	6.4		
Standard Deviation								2.0	3.5	4.3	3.7		
CV								6.85	6.65	6.39	4.85		
Replicate F								1.000	0.528	2.455	2.132		
Replicate Prob(F)								0.3927	0.6013	0.1219	0.1555		
Treatment F								238.536	190.631	150.076	246.508		
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001		

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval							AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR
							4-21-12 Control Percent	4-25-12 Control Percent	5-2-12 Control Percent	5-16-12 Control Percent
							3 DA-A	7 DA-A	14 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code	
1	NONTREATED									0 f
2	NUP-12004 NIS (ACTIVATOR 90)	3.52 EC 100 SL		0.33 lb ae/a 0.25 % v/v	12 fl oz/a 0.25 % v/v		7DBP	A		50 b
3	NUP-12004 NIS (ACTIVATOR 90)	3.52 EC 100 SL		0.495 lb ae/a 0.25 % v/v	18 fl oz/a 0.25 % v/v		7DBP	A		58 a
4	WEEDONE LV 4 EC NIS (ACTIVATOR 90)	3.84 EC 100 SL		0.48 lb ae/a 0.25 % v/v	16 fl oz/a 0.25 % v/v		7DBP	A		35 c
5	CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	4.5 SL 100 SL 100 SL		0.77 lb ae/a 0.25 % v/v 2.5 % v/v	22 fl oz/a 0.25 % v/v 2.5 % v/v		7DBP	A		8 e
6	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 EC 4.5 SL 100 SL 100 SL		0.33 lb ae/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	12 fl oz/a 22 fl oz/a 0.25 % v/v 2.5 % v/v		7DBP	A		55 a
7	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 EC 4.5 SL 100 SL 100 SL		0.495 lb ae/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	18 fl oz/a 22 fl oz/a 0.25 % v/v 2.5 % v/v		7DBP	A		58 a
8	WEEDONE LV 4 EC CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.84 EC 4.5 SL 100 SL 100 SL		0.48 lb ae/a 0.77 lb ae/a 0.25 % v/v 2.5 % v/v	16 fl oz/a 22 fl oz/a 0.25 % v/v 2.5 % v/v		7DBP	A		30 d
LSD (P=.05)							4.5	6.4	6.2	9.8
Standard Deviation							2.6	3.6	3.6	5.6
CV							7.02	5.82	4.82	8.68
Replicate F							4.200	0.875	3.050	4.412
Replicate Prob(F)							0.0373	0.4386	0.0795	0.0327
Treatment F							233.400	248.967	228.910	89.536
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001

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Pest Code	VERAR	VERAR	VERAR	VERAR	OXAST	OXAST									
Crop Code	4-21-12	4-25-12	5-2-12	5-16-12	5-2-12	5-16-12									
Rating Date	Control	Control	Control	Control	Control	Control									
Rating Type	Percent	Percent	Percent	Percent	Percent	Percent									
Rating Unit															
Rating Timing															
Trt-Eval Interval	3 DA-A	7 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code						
1	NONTREATED									0 d	0 e	0 e	0 b	0 d	0 c
2	NUP-12004 NIS (ACTIVATOR 90)	3.52 100	EC SL	0.33 0.25	lb ae/a % v/v	12 0.25	fl oz/a % v/v	7DBP 7DBP	A A	18 a	22 ab	80 c	99 a	32 c	23 b
3	NUP-12004 NIS (ACTIVATOR 90)	3.52 100	EC SL	0.495 0.25	lb ae/a % v/v	18 0.25	fl oz/a % v/v	7DBP 7DBP	A A	20 a	20 b	83 b	99 a	38 b	28 b
4	WEEDONE LV 4 EC NIS (ACTIVATOR 90)	3.84 100	EC SL	0.48 0.25	lb ae/a % v/v	16 0.25	fl oz/a % v/v	7DBP 7DBP	A A	12 b	20 b	72 d	99 a	27 c	27 b
5	CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	4.5 100 100	SL SL SL	0.77 0.25 2.5	lb ae/a % v/v % v/v	22 0.25 2.5	fl oz/a % v/v % v/v	7DBP 7DBP 7DBP	A A A	5 c	10 d	98 a	99 a	99 a	99 a
6	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 4.5 100 100	EC SL SL SL	0.33 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	12 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A	20 a	22 ab	99 a	99 a	99 a	99 a
7	NUP-12004 CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.52 4.5 100 100	EC SL SL SL	0.495 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	18 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A	20 a	23 a	99 a	99 a	99 a	99 a
8	WEEDONE LV 4 EC CREDIT XTREME NIS (ACTIVATOR 90) N-PAK AMS	3.84 4.5 100 100	EC SL SL SL	0.48 0.77 0.25 2.5	lb ae/a lb ae/a % v/v % v/v	16 22 0.25 2.5	fl oz/a fl oz/a % v/v % v/v	7DBP 7DBP 7DBP 7DBP	A A A A	12 b	17 c	99 a	99 a	99 a	99 a
LSD (P=.05)		3.2	2.9	2.5	0.0	6.6	8.9								
Standard Deviation		1.9	1.7	1.4	0.0	3.8	5.1								
CV		13.88	10.09	1.84	0.0	6.11	8.56								
Replicate F		0.304	4.789	1.567	0.000	0.074	3.682								
Replicate Prob(F)		0.7424	0.0260	0.2432	1.0000	0.9293	0.0519								
Treatment F		51.478	66.526	1608.881	0.000	365.223	218.719								
Treatment Prob(F)		0.0001	0.0001	0.0001	1.0000	0.0001	0.0001								

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Trial Comments

1. Protocol: Nufarm (H2012-103-IL).
2. Ratings: CI distinguish between burn and epinasty; rate at 14 and 28 DAT.
WC at 3, 7, 14, and 28 DAT.
3. Take photos to demonstrate treatment differences.
4. Trial can be managed as needed after final rating.
5. ERICA-HR = Herbicide-resistant marestail (glyphosate).
AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
6. On 5-2-12 at 14 DA-A the corn was just starting to emerge, and so crop injury rating was delayed until 16 DA-A.
There was no visible crop injury of any type at any time.
7. Not harvested.