

## Weed Control by N Rate Corn Study.

Trial ID: 11-2C

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: 6-5-11

Objectives: Evaluate N rate and placement for effect  
 on weeds and corn yield.

Crop 1: ZEAMD Dent corn Variety: DKC 63-87 Description: RR  
 Planting Method: SEEDED Planting Date: 6-5-11  
 Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN  
 Row Spacing, Unit: 30 IN  
 Plot Width, Unit: 10 FT Site Type: FIELD  
 Plot Length, Unit: 30 FT Tillage Type: NO-TILL  
 Replications: 4 Study Design: Factorial

Prior Crops, Year  
 1. GLXMA 2010

Field Prep./Maintenance: See treatment list

% OM: 1.5 Texture: SILT LOAM  
 pH: 6.2 Soil Name: PIERRON  
 CEC: 7 Fert. Level: P1: 85 LB/A, K: 262 LB/A

## Application Description

	A	B	C
Application Date:	6-6-11	6-24-11	7-1-11
Time of Day:	15:30	11:00	9:00
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	4"W	8"W
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	JRK	LAH	LAH
Air Temperature, Unit:	95 F	76 F	74 F
% Relative Humidity:	40	54	84
Wind Velocity, Unit:	5 MPH	8 MPH	4 MPH
Wind Direction:	SW	NW	SW
Dew Presence (Y/N):	N	N	N
Soil Temperature, Unit:	76 F	74 F	78 F
Soil Moisture:	ABONOR	ABONOR	NORMAL
% Cloud Cover:	0	0	0

	A	B	C
Crop stage at application:	NA	V3-V4	V4-V5
Height Min, Max (inch):	7	10 9	17

## Pest Stage At Each Application

Application Date:	A	B	C
6-6-11	6-24-11	7-1-11	

## Application Equipment

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI	30 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan
Nozzle Size:	XR 8002	XR 8002	XR 8002
Boom Length, Unit:	10 FT	10 FT	10 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA

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Pest Code			
Crop Code	ZEAMD	ZEAMD	ZEAMD
Rating Date	10-31-11	10-31-11	10-31-11
Rating Data Type	Moisture	Test wt.	Yield
Rating Unit	Percent	lb/bu	bu/A
Rating Timing			
Trt-Eval Interval			

Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	Remove weeds PRE								21.8	b-e	57.8	b-h	91	klm
1	N timing PRE													
1	N rate 0 lb/A													
2	Remove weeds PRE								19.7	f	58.9	a	97	i-m
2	N timing PRE													
2	N rate 60 lb/A													
3	Remove weeds PRE								21.7	b-f	57.9	b-f	112	f-j
3	N timing PRE													
3	N rate 120 lb/A													
4	Remove weeds PRE								21.8	b-e	57.9	b-g	122	e-h
4	N timing PRE													
4	N rate 180 lb/A													
5	Remove weeds PRE								23.6	ab	57.1	f-i	129	c-f
5	N timing PRE													
5	N rate 240 lb/A													
6	Remove weeds PRE								22.7	a-d	57.5	d-i	91	klm
6	N timing Side													
6	N rate 0 lb/A													
7	Remove weeds PRE								22.5	a-e	57.5	d-i	108	g-k
7	N timing Side													
7	N rate 60 lb/A													
8	Remove weeds PRE								24.0	a	56.9	hi	122	d-h
8	N timing Side													
8	N rate 120 lb/A													
9	Remove weeds PRE								23.9	a	57.0	ghi	132	c-f
9	N timing Side													
9	N rate 180 lb/A													
10	Remove weeds PRE								24.1	a	56.9	hi	154	ab
10	N timing Side													
10	N rate 240 lb/A													
11	Remove weeds 4 inch								23.9	a	57.0	ghi	88	klm
11	N timing PRE													
11	N rate 0 lb/A													
12	Remove weeds 4 inch								22.6	a-e	57.8	b-i	96	i-m
12	N timing PRE													
12	N rate 60 lb/A													
13	Remove weeds 4 inch								21.2	def	58.3	a-d	119	fgh
13	N timing PRE													
13	N rate 120 lb/A													
14	Remove weeds 4 inch								21.5	c-f	58.2	a-e	125	c-g
14	N timing PRE													
14	N rate 180 lb/A													
15	Remove weeds 4 inch								22.8	a-d	57.5	d-i	132	c-f
15	N timing PRE													
15	N rate 240 lb/A													
16	Remove weeds 4 inch								22.5	a-e	57.6	c-i	94	j-m
16	N timing Side													
16	N rate 0 lb/A													
17	Remove weeds 4 inch								22.2	a-e	57.8	b-h	123	d-g
17	N timing Side													
17	N rate 60 lb/A													
18	Remove weeds 4 inch								22.9	a-d	57.4	d-i	141	b-e
18	N timing Side													
18	N rate 120 lb/A													

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Rating Data Type	Moisture	Test wt.	Yield
Rating Unit	Percent	lb/bu	bu/A
Rating Timing			
Trt-Eval Interval			

Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
19	Remove weeds 4 inch								22.9	a-d	57.5	d-i	145	bc
19	N timing Side													
19	N rate 180 lb/A													
20	Remove weeds 4 inch								24.1	a	57.0	ghi	167	a
20	N timing Side													
20	N rate 240 lb/A													
21	Remove weeds 8 inch								22.9	a-d	57.3	e-i	85	lm
21	N timing PRE													
21	N rate 0 lb/A													
22	Remove weeds 8 inch								22.8	a-d	57.4	d-i	92	j-m
22	N timing PRE													
22	N rate 60 lb/A													
23	Remove weeds 8 inch								20.6	ef	58.5	abc	106	g-k
23	N timing PRE													
23	N rate 120 lb/A													
24	Remove weeds 8 inch								20.7	ef	58.5	ab	115	f-i
24	N timing PRE													
24	N rate 180 lb/A													
25	Remove weeds 8 inch								22.6	a-e	57.5	d-i	132	c-f
25	N timing PRE													
25	N rate 240 lb/A													
26	Remove weeds 8 inch								23.7	ab	56.9	hi	82	m
26	N timing Side													
26	N rate 0 lb/A													
27	Remove weeds 8 inch								23.4	abc	57.2	f-i	102	h-l
27	N timing Side													
27	N rate 60 lb/A													
28	Remove weeds 8 inch								23.6	ab	57.1	f-i	132	c-f
28	N timing Side													
28	N rate 120 lb/A													
29	Remove weeds 8 inch								24.2	a	56.9	i	144	bc
29	N timing Side													
29	N rate 180 lb/A													
30	Remove weeds 8 inch								23.6	ab	57.1	f-i	142	bcd
30	N timing Side													
30	N rate 240 lb/A													
LSD (P=.05)									2.00		0.90		20.6	
Replicate F									15.716		19.817		5.581	
Replicate Prob(F)									0.0001		0.0001		0.0015	
Treatment F									2.649		2.825		9.524	
Treatment Prob(F)									0.0003		0.0001		0.0001	

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

## Trial Comments

1. Protocol: Steve Ebelhar (DSAC).

2. SIU Ratings:

Weed counts by species and size (0-3, 3-6, and 6-12 inch) at each POST weed removal timing as (2) 0.5m<sup>2</sup> quad per plot.

3. UI Ratings:

Weed biomass as dry weight of above ground portion of weeds (2) subsamples per plot, subsample size TBD, at 4 and 8 inch weed removal timing.

Corn biomass as dry weight of above ground portion of 10 corn plants per plot, at 4 and 8 inch weed removal timing.

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- Retain weed and corn dry matter samples after weighing for N concentration analysis.
4. Yield.
  5. Blanket burndown application of Roundup PowerMax (22 floz/A) plus 2,4-D (1 pt/A) to be applied 14EPP, mid-April (4-18-11).
  6. Mixing instructions for weed removal: Each weed removal timing is 40 plots or 0.275 acre, or 4.13 gallons at 15 GPA.
  7. Weed removal herbicides:
    - PRE; Lexar (3 qt/A) plus Atrazine (1 pt/A), if weeds have emerged add Roundup PowerMax (22 floz/A).
    - POST 4 inch weeds: Halex GT (3.6 pt/A) plus Atrazine (2 pt/A) plus NIS (0.25%v/v) plus Npak AMS (5 %v/v).
    - POST 8 inch weeds: Halex GT (3.6 pt/A) plus Atrazine (2 pt/A) plus NIS (0.25%v/v) plus Npak AMS (5 %v/v).
  8. Flagging instructions for herbicide applications (flag before spraying):
    - Plots to be sprayed are in blocks of 5 plots each, 2 blocks per rep, flag front and back of each block.
    - Plots ending in numbers 11-15 and 21-25 are sprayed at the PRE weed removal timing.
    - Plots ending in numbers 31-35 and 41-45 are sprayed at the 4 inch weed removal timing.
    - Plots ending in numbers 51-55 and 61-65 are sprayed at the 8 inch weed removal timing.
  9. Nitrogen applications (Steve will apply):
    - Plots ending in 11-15, 31-35, and 51-55 have N applied PRE.
    - Plots ending in 21-25, 41-45, and 61-65 have N applied SIDE.
  10. Harvested 10-31-11, (2) 30 inch rows by 27 ft.