RyzUp SmartGrass in Corn.

Trial ID: 12-ARC-8E-S140
Location: Agronomy 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: 4-20-12

Trial Location

City: Carbondale
State/Prov.: IL
Postal Code: 62901
Country: USA

Objectives:
Evaluate the influence of RyzUp on corn growth
and grain yield.

Personnel

Study Director: Bryan Young
Investigator: Bryan Young **Title:** Professor
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
Variety: P1395R **Description:** RR2
BBCH Scale: BCOR **Planting Date:** 4-20-12
Planting Method: SEEDED Seeded **Rate, Unit:** 28500 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN

Pest Description

Code: NA

Site and Design

Plot Width, Unit: 10 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT2 **Tillage Type:** REDTIL reduced-till
Replications: 4 **Study Design:** RACOBL Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

Maintenance

No.	Maintenance Treatment Name
1.	LIME 2 TON/A FALL 2011
2.	N 198 LB/A, P2O5 46 LB/A, K2O 120 LB/A

Soil Description

% OM: 2.7 **Texture:** SIL SILT LOAM
pH: 5.3
CEC: 11.2

Additional Measured Elements

Element	Quantity	Unit
P1	100	LB/A
K	248	LB/A

Moisture and Weather Conditions

Overall Moisture Conditions: BELNOR below normal
Closest Weather Station: ICN - Carbondale IL **Distance, Unit:** 0.5 MI

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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-3-12					7	DAY	34.6	78.3	F
2.	4-10-12					7	DAY	30.1	79.2	F
3.	4-15-12	0.43	IN	RAIN	rain					
4.	4-16-12	0.39	IN	RAIN	rain					
5.	4-17-12					7	DAY	36.7	75.6	F
6.	4-20-12	0.25	IN	RAIN	rain					
7.	4-22-12	0.09	IN	RAIN	rain					
8.	4-24-12					7	DAY	43.7	80.9	F
9.	4-27-12	0.08	IN	RAIN	rain					
10.	4-30-12	0.05	IN	RAIN	rain					
11.	5-1-12					7	DAY	59.1	91.3	F
12.	5-4-12	0.02	IN	RAIN	rain					
13.	5-7-12	0.08	IN	RAIN	rain					
14.	5-8-12					7	DAY	43.3	79	F
15.	5-15-12					7	DAY	44.9	89.1	F
16.	5-20-12	0.4	IN	RAIN	rain					
17.	5-22-12					7	DAY	45.5	92.8	F
18.	5-29-12					7	DAY	46.3	89.8	F
19.	5-29-12	0.02	IN	RAIN	rain					
20.	5-30-12	0.02	IN	RAIN	rain					
21.	5-31-12	0.16	IN	RAIN	rain					
22.	6-4-12	0.16	IN	RAIN	rain					
23.	6-5-12					7	DAY	48.5	88.8	F
24.	6-11-12	0.62	IN	RAIN	rain					
25.	6-12-12					7	DAY	49.8	91.1	F
26.	6-17-12	0.06	IN	RAIN	rain					
27.	6-19-12					7	DAY	55.4	96.4	F
28.	6-26-12					7	DAY	51.1	105.4	F
29.	7-3-12					7	DAY	71.1	105	F
30.	7-8-12	1.15	IN	RAIN	rain					
31.	7-10-12					7	DAY	65.9	93.9	F
32.	7-14-12	0.11	IN	RAIN	rain					
33.	7-16-12	0.02	IN	RAIN	rain					
34.	7-17-12					7	DAY	60	102.3	F
35.	7-17-12	0.02	IN	RAIN	rain					
36.	7-23-12	0.02	IN	RAIN	rain					
37.	7-24-12					7	DAY	64.1	102.1	F
38.	7-26-12	0.53	IN	RAIN	rain					
39.	7-27-12	0.02	IN	RAIN	rain					
40.	7-29-12	0.27	IN	RAIN	rain					
41.	7-31-12					7	DAY	62.7	97.9	F
42.	8-2-12	0.02	IN	RAIN	rain					
43.	8-3-12	0.02	IN	RAIN	rain					
44.	8-4-12	2.83	IN	RAIN	rain					
45.	8-5-12	2.09	IN	RAIN	rain					
46.	8-7-12					7	DAY	54.1	97.2	F
47.	8-13-12	0.38	IN	RAIN	rain					
48.	8-14-12					7	DAY	51.2	92.5	F
49.	8-16-12	0.66	IN	RAIN	rain					
50.	8-21-12					7	DAY	54.6	94.1	F
51.	8-31-12	1.54	IN	RAIN	rain					

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Application Description

	A	B
Application Date:	5-5-12	5-16-12
Time of Day:	9:00	16:00
Application Method:	Spray	Spray
Application Timing:	V2	V5
Application Placement:	BROFOL	BROFOL
Applied By:	RJW	RJW
Air Temperature, Unit:	80 F	82 F
% Relative Humidity:	63	46
Wind Velocity, Unit:	6 MPH	6 MPH
Wind Direction:	S	N
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	74 F	84 F
Soil Moisture:	NORMAL	BELNOR
% Cloud Cover:	30	50

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMD BCOR	ZEAMD BCOR
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	V2	V5
Stage Minimum, Percent:	V1	V5
Stage Maximum, Percent:	V2	V6
Height, Unit:	5 IN	8 IN
Height Minimum, Maximum:	4 5	6 8

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	NA DESC	NA DESC
Stage Majority, Percent:	NA	NA

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8003	8003
Boom Length, Unit:	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	ZEAMD 9-25-12 Moisture Percent	ZEAMD 9-25-12 Test wt. lb/bu	ZEAMD 9-25-12 Yield bu/A	ZEAMD 5-15-12 Height cm 10 DA-A	ZEAMD 5-25-12 Height cm 20 DA-A	ZEAMD 6-4-12 Height cm 30 DA-A
1	NONTREATED									14.5 a	61.7 a	29 a	18 c	45 a	75 a
2	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V2	A	15.0 a	63.0 a	34 a	20 a	46 a	76 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A						
3	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V2	A	14.2 a	59.0 a	38 a	20 ab	46 a	74 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A						
4	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V5	B	14.9 a	62.4 a	27 a			
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B						
5	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V5	B	14.7 a	62.7 a	32 a			
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B						
6	NONTREATED												18 bc	45 a	73 a
7	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V2	A				21 a	45 a	72 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A						
8	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V2	A				21 a	44 a	71 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A						
9	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V5	B						
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B						
10	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V5	B						
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B						
LSD (P=.05)										0.85	5.54	26.7	1.8	3.6	5.3
Standard Deviation										0.55	3.39	17.3	1.2	2.4	3.5
CV										3.75	5.5	54.18	5.87	5.2	4.78
Replicate F										2.221	2.493	1.692	0.510	8.030	8.609
Replicate Prob(F)										0.1429	0.1342	0.2214	0.6820	0.0023	0.0017
Treatment F										1.461	0.904	0.252	4.612	0.319	1.102
Treatment Prob(F)										0.2792	0.5049	0.9027	0.0107	0.8932	0.4024

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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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	ZEAMD 5-26-12 Height cm 10 DA-B	ZEAMD 6-5-12 Height cm 20 DA-B	ZEAMD 6-15-12 Height cm 30 DA-B	ZEAMD 5-15-12 SPAD 10 DA-A	ZEAMD 5-25-12 SPAD 20 DA-A	ZEAMD 6-4-12 SPAD 30 DA-A
1	NONTREATED									45 b	75 a	122 a	39.8 a	47.5 a	50.6 a
2	RYZUP SMARTGRASS	40 WG	0.0075	lb ai/a	0.3	oz/a		V2	A				39.7 a	45.8 a	50.2 a
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V2	A						
3	RYZUP SMARTGRASS	40 WG	0.015	lb ai/a	0.6	oz/a		V2	A				39.4 a	45.8 a	53.3 a
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V2	A						
4	RYZUP SMARTGRASS	40 WG	0.0075	lb ai/a	0.3	oz/a		V5	B	46 b	77 a	116 a			
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V5	B						
5	RYZUP SMARTGRASS	40 WG	0.015	lb ai/a	0.6	oz/a		V5	B	47 b	79 a	125 a			
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V5	B						
6	NONTREATED									45 b	74 a	123 a	39.2 a	46.1 a	51.0 a
7	RYZUP SMARTGRASS	40 WG	0.0075	lb ai/a	0.3	oz/a		V2	A				38.7 a	46.1 a	52.8 a
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V2	A						
8	RYZUP SMARTGRASS	40 WG	0.015	lb ai/a	0.6	oz/a		V2	A				37.8 a	44.5 a	48.4 a
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V2	A						
9	RYZUP SMARTGRASS	40 WG	0.0075	lb ai/a	0.3	oz/a		V5	B	48 ab	76 a	124 a			
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V5	B						
10	RYZUP SMARTGRASS	40 WG	0.015	lb ai/a	0.6	oz/a		V5	B	50 a	78 a	129 a			
	NIS (ACTIVATOR 90)	100 SL	0.25	% v/v	0.25	% v/v		V5	B						
LSD (P=.05)										3.1	5.0	15.3	2.54	2.27	7.70
Standard Deviation										2.1	3.3	10.1	1.67	1.50	5.08
CV										4.48	4.31	8.24	4.28	3.25	9.95
Replicate F										5.806	4.047	0.869	2.348	1.033	0.057
Replicate Prob(F)										0.0077	0.0271	0.4789	0.1168	0.4082	0.9814
Treatment F										3.337	1.232	0.671	0.833	1.587	0.512
Treatment Prob(F)										0.0318	0.3424	0.6517	0.5473	0.2274	0.7630

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	ZEAMD 5-26-12 SPAD 10 DA-B	ZEAMD 6-5-12 SPAD 20 DA-B	ZEAMD 6-15-12 SPAD 30 DA-B	ZEAMD 7-30-12 Silage 000 lb/A R5	ZEAMD 7-30-12 Plants 000/A R5
1	NONTREATED									47.7 a	50.6 a	51.4 a		
2	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V2	A					
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A					
3	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V2	A					
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A					
4	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V5	B	44.7 a	50.9 a	50.3 a		
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B					
5	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V5	B	45.0 a	51.4 a	50.5 a		
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B					
6	NONTREATED									46.4 a	52.8 a	51.3 a	28.0 a	30.0 a
7	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V2	A				30.3 a	30.0 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A					
8	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V2	A				28.1 a	32.5 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V2	A					
9	RYZUP SMARTGRASS	40 WG		0.0075	lb ai/a	0.3	oz/a	V5	B	43.8 a	49.9 a	52.3 a	29.9 a	30.3 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B					
10	RYZUP SMARTGRASS	40 WG		0.015	lb ai/a	0.6	oz/a	V5	B	47.7 a	50.7 a	48.0 a	26.2 a	31.5 a
	NIS (ACTIVATOR 90)	100 SL		0.25	% v/v	0.25	% v/v	V5	B					
LSD (P=.05)										4.16	5.72	3.37	5.56	3.55
Standard Deviation										2.76	3.80	2.23	3.61	2.31
CV										6.02	7.44	4.41	12.68	7.47
Replicate F										1.901	0.782	1.294	2.566	1.063
Replicate Prob(F)										0.1729	0.5223	0.3128	0.1033	0.4012
Treatment F										1.370	0.272	1.718	0.821	0.931
Treatment Prob(F)										0.2901	0.9213	0.1912	0.5365	0.4783

Southern Illinois University

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Trial Comments

1. Protocol: Valent (MD 68.10).
2. Ratings: Corn height (10 plants per plot) to the uppermost horizontal leaf, vigor/color and SPAD meter (10 readings per plot, record a single mean SPAD value for each plot), at 10, 20, and 30 DAT. Spad, height and vigor of nontreated plots at each DAT timing.
3. Biomass yield (silage timing) from treatments 6 to 10. Cut corn plants 3 inch above the ground from a 8 ft 8.5 inch section of each of the center two rows (total area 17 ft 5 inch) and determine fresh weight. Count harvested plants.
4. Grain yield from treatments 1 to 5.
5. Apply when daytime temperatures are expected to be 75 degrees F or less if possible.
6. Maintain entire trial weed free. Blanket POST application of Degree Xtra (3 qt/A) plus Aatrex (1 qt/A) plus Roundup PowerMax (22 floz/A) was applied to all plots on 5-10-12.
7. SPAD = Minolta chlorophyll meter (model SPAD 502) reading on on the newest fully developed leaf.
8. Missing data for plot 207 was due to data collection error.
9. Harvested 9-25-12, (2) 30 inch rows by 27 ft.