

Purdue Weed Science

Does the Addition of Micronutrient & PGR Products to Herbicides Impact Weed Control in Corn?

Trial ID: 18S-TPAC-CORN-06 Location: TPAC Trial Year: 2018
 Protocol ID: 18S-TPAC-CORN-06 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: J. Green - Stoller

General Trial Information

Study Director: Dustin Johnson **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide

Trial Location

City: Lafayette **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47909

Latitude of LL Corner °: 40.29174 N
Longitude of LL Corner °: 86.90659 W

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Dustin Johnson **Title:** Research Associate
Organization: Purdue University
Address: 915 W. State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** john1357@purdue.edu
Country: USA United States

Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address: 915 W. State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Country: USA United States

Cooperator/Landowner

Cooperator: Jay Young **Role:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S
City: Lafayette **Phone No.:** 765-538-3422
State/Prov: IN **Fax No.:** 765-538-3423
Postal Code: 47909
Country: USA United States **E-mail:** jayyoung@purdue.edu

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: DKC62-52RIB
Description: RR/LL Stacked

Planting Date: Apr-27-2018
Planting Method: PLANTD planted
Planting Equipment: PP plot planter
Emergence Date: May-7-2018

Planting Rate, Unit: 32000 S/A
Depth, Unit: 1.5 IN
Row Spacing, Unit: 30 IN

Harvested Width, Unit: 5 FT
Harvested Length, Unit: 25 FT
% Standard Moisture: 15.5

Soil Temperature, Unit: 61 F
Soil Moisture: DRY dry

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

Site and Design

Treated Plot Width: 10 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 300 FT2 **Treatments:** 13 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** RACOB Randomized Complete Block (RCB)

Field Prep./Maintenance:
 4/26/18-Farm Applied 180 lbs of N applied as UAN 28-0-0.

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Soil Description

Description Name: TPAC-Field 4A
% OM: 3.1 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Toronto-Millbrook
CEC: 11.1

Application Description

	A	B
Application Date:	Apr-27-2018	May-22-2018
Appl. Start Time:	3:40 PM	12:30 PM
Appl. Stop Time:	4:10 PM	1:00 PM
Application Method:	SPRAY	SPRAY
Application Timing:	PREPRE	POSPOS
Application Placement:	BROADC	BROADC
Applied By:	T. CAMPBELL	M. ZIMMER
Air Temperature, Unit:	67 F	73 F
% Relative Humidity:	22	82
Wind Velocity, Unit:	10 MPH	3 MPH
Wind Direction:	WNW	WNW
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	61 F	68 F
Soil Moisture:	DRY	SLIWET
% Cloud Cover:	0	80

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	00	14
Stage Minimum, Percent:	00	13
Stage Maximum, Percent:	00	14
Height, Unit:		6.5 IN
Height Minimum, Maximum:		4.5 9.5

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	00	14
Stage Minimum, Percent:	00	10
Stage Maximum, Percent:	00	19
Height, Unit:		4 IN
Height Minimum, Maximum:		0.25 12
Density, Unit:		13 FT2

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Application Equipment

	A	B
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	29 PSI	18 PSI
Nozzle Type:	TTI	FLAFXR
Nozzle Size:	110015	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	8	8
Boom Length, Unit:	10 FT	10 FT
Boom Height, Unit:	17 IN	17 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC
Mix Size, Unit:		1.8 L
Propellant:		COMCO2

Date	By	Notes
Jun-7-2018	D. JOHNSON	Evening storm brought hail and damage to crop occurred.

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 Protocol ID: 18S-TPAC-CORN-06 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: J. Green - Stoller

Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 L (total for 4 plots; minimum=1.564 L)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code	Appl Description	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
1	UNTREATED CHECK									101	302	506	803
2	DEGREE XTRA	4.04	LB/GAL	L	5	pt/a	A	AT PLANTING	75.0 mL/mx	102	207	407	605
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
	IMPACT	2.8	LB/GAL	L	0.75	fl oz/a	B	V3-V4 CORN	0.7031 mL/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
3	DEGREE XTRA	4.04	LB/GAL	L	5	pt/a	A	AT PLANTING	75.0 mL/mx	103	404	602	607
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-1103	100	%	L	8	fl oz/a	B	V3-V4 CORN	7.5 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
	IMPACT	2.8	LB/GAL	L	0.75	fl oz/a	B	V3-V4 CORN	0.7031 mL/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
4	DEGREE XTRA	4.04	LB/GAL	L	5	pt/a	A	AT PLANTING	75.0 mL/mx	104	403	505	704
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-2111	100	%	L	4	fl oz/a	B	V3-V4 CORN	3.75 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
	IMPACT	2.8	LB/GAL	L	0.75	fl oz/a	B	V3-V4 CORN	0.7031 mL/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
5	DEGREE XTRA	4.04	LB/GAL	L	5	pt/a	A	AT PLANTING	75.0 mL/mx	105	307	501	701
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-1123	100	%	L	8	fl oz/a	B	V3-V4 CORN	7.5 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
	IMPACT	2.8	LB/GAL	L	0.75	fl oz/a	B	V3-V4 CORN	0.7031 mL/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
6	LEXAR EZ	3.704	LB/GAL	L	3	qt/a	A	AT PLANTING	90.0 mL/mx	106	402	604	703
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	B	V3-V4 CORN	54.0 mL/mx				
7	LEXAR EZ	3.704	LB/GAL	L	3	qt/a	A	AT PLANTING	90.0 mL/mx	107	303	603	606
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-1103	100	%	L	8	fl oz/a	B	V3-V4 CORN	7.5 mL/mx				
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	B	V3-V4 CORN	54.0 mL/mx				
8	LEXAR EZ	3.704	LB/GAL	L	3	qt/a	A	AT PLANTING	90.0 mL/mx	201	306	601	802
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-2111	100	%	L	4	fl oz/a	B	V3-V4 CORN	3.75 mL/mx				
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	B	V3-V4 CORN	54.0 mL/mx				
9	LEXAR EZ	3.704	LB/GAL	L	3	qt/a	A	AT PLANTING	90.0 mL/mx	202	405	504	702
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-1123	100	%	L	8	fl oz/a	B	V3-V4 CORN	7.5 mL/mx				
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	B	V3-V4 CORN	54.0 mL/mx				
10	VERDICT	5.57	LB/GAL	EC	10	fl oz/a	A	AT PLANTING	9.375 mL/mx	203	305	503	801
	STATUS	56	%	DG	5	oz/a	B	V3-V4 CORN	4.493 g/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
11	VERDICT	5.57	LB/GAL	EC	10	fl oz/a	A	AT PLANTING	9.375 mL/mx	204	301	502	705
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-1103	100	%	L	8	fl oz/a	B	V3-V4 CORN	7.5 mL/mx				
	STATUS	56	%	DG	5	oz/a	B	V3-V4 CORN	4.493 g/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				
12	VERDICT	5.57	LB/GAL	EC	10	fl oz/a	A	AT PLANTING	9.375 mL/mx	205	304	507	706
	STO-510	100	%	D	40	oz/a	B	V3-V4 CORN	35.95 g/mx				
	STO-2111	100	%	L	4	fl oz/a	B	V3-V4 CORN	3.75 mL/mx				
	STATUS	56	%	DG	5	oz/a	B	V3-V4 CORN	4.493 g/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3	pt/a	B	V3-V4 CORN	19.5 mL/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32	fl oz/a	B	V3-V4 CORN	30.0 mL/mx				

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Reps: 4 Plots: 10 by 30 feet
Spray vol: 15 GAL/AC Mix Size: 1.8 L (total for 4 plots; minimum=1.564 L)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Appl Code	Appl Description	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
13	VERDICT	5.57	LB/GAL	EC	10 fl oz/a	A	A	AT PLANTING	9.375 mL/mx	206	401	406	707
	STO-510	100 %		D	40 oz/a	B	B	V3-V4 CORN	35.95 g/mx				
	STO-1123	100 %		L	8 fl oz/a	B	B	V3-V4 CORN	7.5 mL/mx				
	STATUS	56 %		DG	5 oz/a	B	B	V3-V4 CORN	4.493 g/mx				
	DUAL II MAGNUM	7.64	LB/GAL	EC	1.3 pt/a	B	B	V3-V4 CORN	19.5 mL/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a	B	B	V3-V4 CORN	30.0 mL/mx				

Sort Order: Treatment

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 Project ID: Study Director: Dustin Johnson
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Pest Type Pest Code Pest Name		W Weed AMBTR Giant ragweed		W Weed AMBTR Giant ragweed		W Weed AMBTR Giant ragweed		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	May-22-2018	May-22-2018	May-29-2018	May-29-2018	Jun-5-2018	Jun-5-2018		
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	PHYGEN	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	M. ZIMMER	M. ZIMMER	J. IKLEY	J. IKLEY	M. ZIMMER	M. ZIMMER		
Rating Timing	A1	A1	A2	A2	A3	A3		
Days After First/Last Applic.	25 25	25 25	32 7	32 7	39 14	39 14		
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Days After Emergence	15 DE-1	15 DE-1	22 DE-1	22 DE-1	29 DE-1	29 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment No. Name	Rate Rate Unit	Appl Code	1	2	3	4	5	6
1 UNTREATED CHECK			0	0	0	0	0	0
2 DEGREE XTRA ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a A 32 fl oz/a B 0.75 fl oz/a B 1.3 pt/a B	A	2 -	15 a-d	2 -	95 bcd	1 -	85 d
3 DEGREE XTRA STO-510 STO-1103 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a A 40 oz/a B 8 fl oz/a B 32 fl oz/a B 0.75 fl oz/a B 1.3 pt/a B	A	2 -	16 a-d	1 -	98 a	1 -	85 d
4 DEGREE XTRA STO-510 STO-2111 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a A 40 oz/a B 4 fl oz/a B 32 fl oz/a B 0.75 fl oz/a B 1.3 pt/a B	A	1 -	9 cd	0 -	97 abc	0 -	86 cd
5 DEGREE XTRA STO-510 STO-1123 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a A 40 oz/a B 8 fl oz/a B 32 fl oz/a B 0.75 fl oz/a B 1.3 pt/a B	A	3 -	21 a	3 -	97 abc	1 -	87 cd
6 LEXAR EZ HALEX GT	3 qt/a A 3.6 pt/a B	A	1 -	8 cd	1 -	96 a-d	1 -	86 cd
7 LEXAR EZ STO-510 STO-1103 HALEX GT	3 qt/a A 40 oz/a B 8 fl oz/a B 3.6 pt/a B	A	2 -	10 bcd	1 -	94 d	1 -	88 bc
8 LEXAR EZ STO-510 STO-2111 HALEX GT	3 qt/a A 40 oz/a B 4 fl oz/a B 3.6 pt/a B	A	1 -	7 cd	2 -	93 d	1 -	86 cd
9 LEXAR EZ STO-510 STO-1123 HALEX GT	3 qt/a A 40 oz/a B 8 fl oz/a B 3.6 pt/a B	A	1 -	6 d	1 -	95 cd	2 -	85 d
10 VERDICT STATUS DUAL II MAGNUM LIBERTY 280 SL	10 fl oz/a A 5 oz/a B 1.3 pt/a B 32 fl oz/a B	A	2 -	18 abc	3 -	97 abc	1 -	89 ab

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 7 because error mean square = 0.

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Pest Type Pest Code Pest Name	W Weed AMBTR Giant ragweed			W Weed AMBTR Giant ragweed					
	ZEAMX Corn	ZEAMX Corn	ZEAMX Corn	ZEAMX Corn	ZEAMX Corn	ZEAMX Corn			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn			
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -			
Rating Date	May-22-2018	May-22-2018	May-29-2018	May-29-2018	Jun-5-2018	Jun-5-2018			
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	PHYGEN	CONTROL			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Assessed By	M. ZIMMER	M. ZIMMER	J. IKLEY	J. IKLEY	M. ZIMMER	M. ZIMMER			
Rating Timing	A1	A1	A2	A2	A3	A3			
Days After First/Last Applic.	25 25	25 25	32 7	32 7	39 14	39 14			
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A			
Days After Emergence	15 DE-1	15 DE-1	22 DE-1	22 DE-1	29 DE-1	29 DE-1			
ARM Action Codes	P	P	P	P	P	P			
Number of Decimals	0	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	1	2	3	4	5	6
11	VERDICT	10 fl oz/a	A	3 -	21 a	1 -	96 a-d	1 -	90 a
	STO-510	40 oz/a	B						
	STO-1103	8 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
12	VERDICT	10 fl oz/a	A	3 -	20 ab	1 -	97 abc	1 -	91 a
	STO-510	40 oz/a	B						
	STO-2111	4 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
13	VERDICT	10 fl oz/a	A	3 -	20 ab	1 -	98 ab	1 -	91 a
	STO-510	40 oz/a	B						
	STO-1123	8 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
LSD P=.05		2.3		10.8		2.8	2.5	1.8	1.9
Standard Deviation		1.6		7.5		1.9	1.8	1.3	1.3
CV		88.3		52.47		143.91	1.83	160.96	1.54
Levene's F		0.529		0.61		0.84	1.213	0.44	2.345
Levene's Prob(F)		0.871		0.808		0.603	0.314	0.927	0.027*
Skewness		0.403		0.405		0.9364*	-1.0674*	1.2229*	0.5968
Kurtosis		-0.886		-0.5402		-0.6648	1.8841*	0.1138	-0.889
Replicate F		0.681		1.767		0.770	0.877	1.317	1.727
Replicate Prob(F)		0.5702		0.1727		0.5193	0.4631	0.2853	0.1806
Treatment F		1.333		2.461		0.807	3.128	0.779	10.228
Treatment Prob(F)		0.2506		0.0225		0.6332	0.0055	0.6580	0.0001

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Trt No.	Treatment Name	Rate	Appl Code	7	8	9	10	11	12
1	UNTREATED CHECK			0	0	0	2.8	12.2	41.9
2	DEGREE XTRA ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a 32 fl oz/a 0.75 fl oz/a 1.3 pt/a	A B B B	0 -	63 b	34 d	34.7 e	15.3 -	59.2 -
3	DEGREE XTRA STO-510 STO-1103 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a 40 oz/a 8 fl oz/a 32 fl oz/a 0.75 fl oz/a 1.3 pt/a	A B B B B B	0 -	65 b	40 d	36.2 cde	14.8 -	57.6 -
4	DEGREE XTRA STO-510 STO-2111 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a 40 oz/a 4 fl oz/a 32 fl oz/a 0.75 fl oz/a 1.3 pt/a	A B B B B B	0 -	65 b	36 d	37.7 a-e	14.8 -	58.9 -
5	DEGREE XTRA STO-510 STO-1123 ROUNDUP POWERMAX IMPACT DUAL II MAGNUM	5 pt/a 40 oz/a 8 fl oz/a 32 fl oz/a 0.75 fl oz/a 1.3 pt/a	A B B B B B	0 -	65 b	41 d	36.0 de	15.5 -	58.8 -
6	LEXAR EZ HALEX GT	3 qt/a 3.6 pt/a	A B	0 -	81 a	68 ab	39.5 abc	15.1 -	58.7 -
7	LEXAR EZ STO-510 STO-1103 HALEX GT	3 qt/a 40 oz/a 8 fl oz/a 3.6 pt/a	A B B B	0 -	81 a	68 a	37.4 b-e	15.2 -	59.3 -
8	LEXAR EZ STO-510 STO-2111 HALEX GT	3 qt/a 40 oz/a 4 fl oz/a 3.6 pt/a	A B B B	0 -	80 a	59 bc	38.2 a-d	15.5 -	59.3 -
9	LEXAR EZ STO-510 STO-1123 HALEX GT	3 qt/a 40 oz/a 8 fl oz/a 3.6 pt/a	A B B B	0 -	79 a	63 abc	40.0 ab	15.5 -	58.5 -
10	VERDICT STATUS DUAL II MAGNUM LIBERTY 280 SL	10 fl oz/a 5 oz/a 1.3 pt/a 32 fl oz/a	A B B B	0 -	80 a	54 c	40.4 ab	15.1 -	59.2 -

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

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Untreated treatment(s) 1 excluded from analysis.

Could not calculate LSD (% mean diff) for columns 7 because error mean square = 0.

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Pest Type		W Weed	W Weed						
Pest Code		AMBTR	AMBTR						
Pest Name		Giant ragweed	Giant ragweed						
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn			
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -			
Rating Date	Jun-19-2018	Jun-19-2018	Jul-17-2018	Oct-9-2018	Oct-9-2018	Oct-9-2018			
Rating Type	PHYGEN	CONTROL	CONTROL	YIELD	MOICON	WEITES			
Rating Unit	%	%	%	lb/plot	%	BU56LB			
Number of Subsamples	1	1	1	1	1	1			
Assessed By	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON			
Rating Timing	A4	A4	A5						
Days After First/Last Applic.	53 28	53 28	81 56	165 140	165 140	165 140			
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	123 DA-A	123 DA-A	123 DA-A			
Days After Emergence	43 DE-1	43 DE-1	71 DE-1	155 DE-1	155 DE-1	155 DE-1			
ARM Action Codes	P	P	P	P	P	P			
Number of Decimals	0	0	0	1	1	1			
Trt No.	Treatment Name	Rate	Appl	7	8	9	10	11	12
		Rate Unit	Code						
11	VERDICT	10 fl oz/a	A	0 -	80 a	54 c	40.1 ab	15.8 -	59.2 -
	STO-510	40 oz/a	B						
	STO-1103	8 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
12	VERDICT	10 fl oz/a	A	0 -	83 a	59 bc	39.7 ab	15.4 -	59.1 -
	STO-510	40 oz/a	B						
	STO-2111	4 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
13	VERDICT	10 fl oz/a	A	0 -	83 a	61 abc	40.9 a	15.3 -	59.5 -
	STO-510	40 oz/a	B						
	STO-1123	8 fl oz/a	B						
	STATUS	5 oz/a	B						
	DUAL II MAGNUM	1.3 pt/a	B						
	LIBERTY 280 SL	32 fl oz/a	B						
LSD P=.05				.	6.3	9.4	3.38	0.62	1.12
Standard Deviation				0.0	4.4	6.5	2.35	0.43	0.78
CV				0.0	5.82	12.35	6.12	2.83	1.32
Levene's F				0.00	1.441	2.011	0.622	0.847	0.834
Levene's Prob(F)				0.00*	0.197	0.057	0.798	0.597	0.608
Skewness				.	-0.4654	0.2509	-0.3501	1.3225*	-0.6217
Kurtosis				.	-1.0444	0.0546	-0.601	3.834*	1.5954*
Replicate F				0.000	1.493	3.698	4.689	8.881	2.879
Replicate Prob(F)				1.0000	0.2345	0.0213	0.0078	0.0002	0.0507
Treatment F				0.000	13.996	13.823	2.943	2.003	1.739
Treatment Prob(F)				1.0000	0.0001	0.0001	0.0080	0.0608	0.1077

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
Could not calculate LSD (% mean diff) for columns 7 because error mean square = 0.

Purdue Weed Science

Pest Type			
Pest Code			
Pest Name			
Crop Code			ZEAMX
Crop Name			Corn
Part Rated			PLOT -
Rating Date			Oct-9-2018
Rating Type			YIELD
Rating Unit			BU
Number of Subsamples			1
Assessed By			D. JOHNSON
Rating Timing			
Days After First/Last Applic.			165 140
Trt-Eval Interval			123 DA-A
Days After Emergence			155 DE-1
ARM Action Codes			TY1
Number of Decimals			1
Trt No.	Treatment Name	Rate	Appl Code
		Rate Unit	
			13
1	UNTREATED CHECK		17.6
2	DEGREE XTRA	5 pt/a	A
	ROUNDUP POWERMAX	32 fl oz/a	B
	IMPACT	0.75 fl oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
			216.6 e
3	DEGREE XTRA	5 pt/a	A
	STO-510	40 oz/a	B
	STO-1103	8 fl oz/a	B
	ROUNDUP POWERMAX	32 fl oz/a	B
	IMPACT	0.75 fl oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
			227.3 cde
4	DEGREE XTRA	5 pt/a	A
	STO-510	40 oz/a	B
	STO-2111	4 fl oz/a	B
	ROUNDUP POWERMAX	32 fl oz/a	B
	IMPACT	0.75 fl oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
			236.4 a-e
5	DEGREE XTRA	5 pt/a	A
	STO-510	40 oz/a	B
	STO-1123	8 fl oz/a	B
	ROUNDUP POWERMAX	32 fl oz/a	B
	IMPACT	0.75 fl oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
			223.9 de
6	LEXAR EZ	3 qt/a	A
	HALEX GT	3.6 pt/a	B
			247.2 abc
7	LEXAR EZ	3 qt/a	A
	STO-510	40 oz/a	B
	STO-1103	8 fl oz/a	B
	HALEX GT	3.6 pt/a	B
			233.5 b-e
8	LEXAR EZ	3 qt/a	A
	STO-510	40 oz/a	B
	STO-2111	4 fl oz/a	B
	HALEX GT	3.6 pt/a	B
			237.6 a-d
9	LEXAR EZ	3 qt/a	A
	STO-510	40 oz/a	B
	STO-1123	8 fl oz/a	B
	HALEX GT	3.6 pt/a	B
			249.1 ab
10	VERDICT	10 fl oz/a	A
	STATUS	5 oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
	LIBERTY 280 SL	32 fl oz/a	B
			252.8 ab

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Purdue Weed Science

Pest Type			
Pest Code			
Pest Name			
Crop Code			ZEAMX
Crop Name			Corn
Part Rated			PLOT -
Rating Date			Oct-9-2018
Rating Type			YIELD
Rating Unit			BU
Number of Subsamples			1
Assessed By			D. JOHNSON
Rating Timing			
Days After First/Last Applic.			165 140
Trt-Eval Interval			123 DA-A
Days After Emergence			155 DE-1
ARM Action Codes			TY1
Number of Decimals			1
Trt No.	Treatment Name	Rate Rate Unit	Appl Code
			13
11	VERDICT	10 fl oz/a	A
	STO-510	40 oz/a	B
	STO-1103	8 fl oz/a	B
	STATUS	5 oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
	LIBERTY 280 SL	32 fl oz/a	B
			248.6 ab
12	VERDICT	10 fl oz/a	A
	STO-510	40 oz/a	B
	STO-2111	4 fl oz/a	B
	STATUS	5 oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
	LIBERTY 280 SL	32 fl oz/a	B
			247.5 abc
13	VERDICT	10 fl oz/a	A
	STO-510	40 oz/a	B
	STO-1123	8 fl oz/a	B
	STATUS	5 oz/a	B
	DUAL II MAGNUM	1.3 pt/a	B
	LIBERTY 280 SL	32 fl oz/a	B
			255.4 a
LSD P=.05			20.99
Standard Deviation			14.59
CV			6.09
Levene's F			0.628
Levene's Prob(F)			0.793
Skewness			-0.3487
Kurtosis			-0.5606
Replicate F			4.421
Replicate Prob(F)			0.0102
Treatment F			2.896
Treatment Prob(F)			0.0089

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Purdue Weed Science

Does the Addition of Micronutrient & PGR Products to Herbicides Impact Weed Control in Corn?

Trial ID: 18S-TPAC-CORN-06 Location: TPAC Trial Year: 2018
 Protocol ID: 18S-TPAC-CORN-06 Investigator: Dr. Bill Johnson
 Project ID: Study Director: Dustin Johnson
 Sponsor Contact: J. Green - Stoller

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

YIELD = yield

MOICON = moisture content

WEITES = weight - test

Rating Unit

% = percent

lb/plot = pounds per plot

BU56LB = bushel 56 lb

BU = bushel

Rating Timing

A1 = 1st Assessment According to Trial Schedule

A2 = 2nd Assessment According to trial Schedule

A3 = 3rd Assessment According to Trial Schedule

A4 = 4th Assessment According to Trial Schedule

A5 = 5th Assessment According to Trial Schedule

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)

TY1 = $6.222857 \cdot [10] \cdot (100 - [11]) / 84.5$