

Purdue Weed Science

Trial ID: 18S-TPAC-CORN-10 Protocol ID: 18S-TPAC-CORN-10 Project ID: 2018.US.6.573.CGVIS	Postemergence Weed Control in Corn using ShieldEx 400 SC Herbicide Location: TPAC Trial Year: 2018 Investigator: Dr. Bill Johnson Study Director: Dustin Johnson Sponsor Contact: A. Raeder - ISK
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General Trial Information	
Study Director: Dustin Johnson Investigator: Dr. Bill Johnson	Title: Research Associate Title: Professor
Discipline: H herbicide	
Trial Location	
City: Lafayette State/Prov.: Indiana Postal Code: 47909	Country: USA United States
Latitude of LL Corner °: 40.29175 N Longitude of LL Corner °: 86.90566 W	
Conducted Under GLP: No Conducted Under GEP: No	

Contacts	
Study Director: Dustin Johnson Organization: Purdue University Address: 915 W. State Street City+State/Prov: West Lafayette, IN Postal Code: 47907 Country: USA United States	Title: Research Associate E-mail: john1357@purdue.edu
Investigator: Dr. Bill Johnson Organization: Purdue University Address: 915 W. State Street City+State/Prov: West Lafayette, IN Postal Code: 47907 Country: USA United States	Title: Professor E-mail: wgj@purdue.edu
Cooperator/Landowner	
Cooperator: Jay Young Organization: Purdue University Address 1: 8343 US 231 S City: Lafayette State/Prov: IN Postal Code: 47909 Country: USA United States	Role: Superintendent Phone No.: 765-538-3422 Fax No.: 765-538-3423 E-mail: jayyoung@purdue.edu

Crop Description	
Crop 1: ZEAMX Zea mays Corn Variety: DKC62-52RIB Description: RR/LL Stacked	
Planting Rate, Unit: 32000 S/A Depth, Unit: 1.5 IN Row Spacing, Unit: 30 IN Soil Temperature, Unit: 61 F Soil Moisture: DRY dry	Planting Date: Apr-27-2018 Planting Method: PLANTD planted Planting Equipment: PP plot planter Emergence Date: May-7-2018

Pest Description	
Pest 1 Type: W Code: AMBTR Ambrosia trifida Common Name: Giant ragweed	
Pest 2 Type: W Code: SETPU Setaria pumila Common Name: yellow foxtail	

Site and Design	
Treated Plot Width: 10 FT Treated Plot Length: 30 FT Treated Plot Area: 300 FT2 Replications: 4	Site Type: FIELD field Experimental Unit: 1 PLOT plot Tillage Type: CONTIL conventional-till 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. 4/27/18-Applied Blanket of Dual II Magnum at 1.6 pints/acre.

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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
Application Date:	May-25-2018
Appl. Start Time:	3:00 PM
Appl. Stop Time:	3:15 PM
Application Method:	SPRAY
Application Timing:	POSPOS
Application Placement:	BROADC
Applied By:	D. JOHNSON
Air Temperature, Unit:	88 F
% Relative Humidity:	35
Wind Velocity, Unit:	6 MPH
Wind Direction:	SW
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	72 F
Soil Moisture:	DRY
% Cloud Cover:	20

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMX BCOR
Stage Scale Used:	BBCH
Stage Majority, Percent:	14
Stage Minimum, Percent:	13
Stage Maximum, Percent:	14
Height, Unit:	9.5 IN
Height Minimum, Maximum:	6 10

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	14
Stage Minimum, Percent:	10
Stage Maximum, Percent:	19
Height, Unit:	3.5 IN
Height Minimum, Maximum:	0.25 12
Density, Unit:	9 FT2
Pest 2 Code, Type, Scale:	SETPU W
Stage Majority, Percent:	12
Stage Minimum, Percent:	10
Stage Maximum, Percent:	14
Height, Unit:	2 IN
Height Minimum, Maximum:	0.25 4
Density, Unit:	3 FT2

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Application Equipment

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

Date	By	Notes
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Jun-8-2018	D. JOHNSON	Evening storm brought hail and damage to crop occurred.
Jun-22-2018	D. JOHNSON	Did not rate SETPU. PANDI most visible grass due to AMBTR growth.
Jul-19-2018	D. JOHNSON	Did not rate PANDI due to AMBTR densities.

Trial Comments

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Postemergence Weed Control in Corn using ShieldEx 400 SC Herbicide

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 Protocol ID: 18S-TPAC-CORN-10
 Project ID: 2018.US.6.573.CGVIS

Location: TPAC Trial Year: 2018
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: A. Raeder - ISK

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	204	601	704
2	SHIELDEX	3.33	LBA/GAL	SC	1 fl oz/a	A		<12" OR <V6" CORN	0.9375 mL/mx	102	303	501	701
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				
3	SHIELDEX	3.33	LBA/GAL	SC	1.2 fl oz/a	A		<12" OR <V6" CORN	1.125 mL/mx	103	401	403	604
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				
4	SHIELDEX	3.33	LBA/GAL	SC	1.35 fl oz/a	A		<12" OR <V6" CORN	1.266 mL/mx	104	402	503	602
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				
5	SHIELDEX	3.33	LBA/GAL	SC	1 fl oz/a	A		<12" OR <V6" CORN	0.9375 mL/mx	201	304	502	702
	AATREX	4	LB/GAL	L	1 pt/a	A		<12" OR <V6" CORN	15.0 mL/mx				
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				
6	SHIELDEX	3.33	LBA/GAL	SC	1.2 fl oz/a	A		<12" OR <V6" CORN	1.125 mL/mx	202	301	404	703
	AATREX	4	LB/GAL	L	1 pt/a	A		<12" OR <V6" CORN	15.0 mL/mx				
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				
7	SHIELDEX	3.33	LBA/GAL	SC	1.35 fl oz/a	A		<12" OR <V6" CORN	1.266 mL/mx	203	302	504	603
	AATREX	4	LB/GAL	L	1 pt/a	A		<12" OR <V6" CORN	15.0 mL/mx				
	MSO	100 %		SL	0.5 % v/v	A		<12" OR <V6" CORN	8.999 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	A		<12" OR <V6" CORN	45.0 mL/mx				

Sort Order: Treatment

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Location: TPAC Trial Year: 2018
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Pest Type Pest Code Pest Name		W Weed AMBTR Giant ragweed	W Weed SETPU yellow foxtail	W Weed PANDI Fall panicum		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	Jun-4-2018	Jun-4-2018	Jun-4-2018	Jun-4-2018	Jun-8-2018	Jun-8-2018
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	PHYGEN	CONTROL
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A1	A1	A1	A1	A2	A2
Days After First/Last Applic.	10 10	10 10	10 10	10 10	14 14	14 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	28 DE-1	28 DE-1	28 DE-1	28 DE-1	32 DE-1	32 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
2 SHIELDEx MSO N-PAK AMS	1 fl oz/a A 0.5 % v/v A 2.5 % v/v A		5 -	83 b	69 b	69 b
3 SHIELDEx MSO N-PAK AMS	1.2 fl oz/a A 0.5 % v/v A 2.5 % v/v A		5 -	86 b	74 b	74 b
4 SHIELDEx MSO N-PAK AMS	1.35 fl oz/a A 0.5 % v/v A 2.5 % v/v A		7 -	85 b	66 b	66 b
5 SHIELDEx AATREX MSO N-PAK AMS	1 fl oz/a A 1 pt/a A 0.5 % v/v A 2.5 % v/v A		3 -	94 a	73 b	73 b
6 SHIELDEx AATREX MSO N-PAK AMS	1.2 fl oz/a A 1 pt/a A 0.5 % v/v A 2.5 % v/v A		5 -	96 a	75 ab	75 ab
7 SHIELDEx AATREX MSO N-PAK AMS	1.35 fl oz/a A 1 pt/a A 0.5 % v/v A 2.5 % v/v A		6 -	94 a	86 a	86 a
LSD P=.05	2.5	5.2	10.8	10.8	1.2	5.3
Standard Deviation	1.7	3.5	7.1	7.1	0.8	3.5
CV	33.39	3.86	9.62	9.62	44.91	4.02
Levene's F	0.447	2.354	2.099	2.099	1.867	1.248
Levene's Prob(F)	0.81	0.082	0.115	0.115	0.151	0.328
Skewness	-0.0153	-0.7911	0.569	0.569	-0.5959	-0.4304
Kurtosis	-0.0316	-0.0167	-0.1535	-0.1535	-0.354	-1.0783
Replicate F	5.973	1.288	5.386	5.386	2.131	1.552
Replicate Prob(F)	0.0069	0.3148	0.0112	0.0112	0.1391	0.2423
Treatment F	2.240	10.390	3.524	3.524	2.016	13.220
Treatment Prob(F)	0.1038	0.0002	0.0285	0.0285	0.1344	0.0001

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.

Missing data estimates are included in columns: Yates=3,4,7,8,11

Could not calculate LSD (% mean diff) for columns 9 because error mean square = 0.

Purdue Weed Science

Pest Type Pest Code Pest Name	W Weed SETPU yellow foxtail	W Weed PANDI Fall panicum		W Weed AMBTR Giant ragweed	W Weed PANDI Fall panicum	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	Jun-8-2018	Jun-8-2018	Jun-22-2018	Jun-22-2018	Jun-22-2018	Jul-19-2018				
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON				
Rating Timing	A2	A2	A3	A3	A3	A4				
Days After First/Last Applic.	14 14	14 14	28 28	28 28	28 28	55 55				
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A				
Days After Emergence	32 DE-1	32 DE-1	46 DE-1	46 DE-1	46 DE-1	73 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 Unit	Code	7	8	9	10	11	12
1	UNTREATED CHECK				0	0	0	0	0	0
2	SHIELDEX MSO N-PAK AMS	1 fl oz/a 0.5 % v/v 2.5 % v/v	A A A		68 c	68 c	0 -	69 -	72 d	40 -
3	SHIELDEX MSO N-PAK AMS	1.2 fl oz/a 0.5 % v/v 2.5 % v/v	A A A		78 bc	78 bc	0 -	64 -	76 cd	38 -
4	SHIELDEX MSO N-PAK AMS	1.35 fl oz/a 0.5 % v/v 2.5 % v/v	A A A		74 bc	74 bc	0 -	66 -	83 bc	40 -
5	SHIELDEX AATREX MSO N-PAK AMS	1 fl oz/a 1 pt/a 0.5 % v/v 2.5 % v/v	A A A A		80 b	80 b	0 -	70 -	88 ab	43 -
6	SHIELDEX AATREX MSO N-PAK AMS	1.2 fl oz/a 1 pt/a 0.5 % v/v 2.5 % v/v	A A A A		83 b	83 b	0 -	73 -	91 a	48 -
7	SHIELDEX AATREX MSO N-PAK AMS	1.35 fl oz/a 1 pt/a 0.5 % v/v 2.5 % v/v	A A A A		93 a	93 a	0 -	70 -	88 ab	38 -
LSD P=.05		9.8		9.8		.		7.2	7.1	7.5
Standard Deviation		6.4		6.4		0.0		4.8	4.7	5.0
CV		8.15		8.15		0.0		6.99	5.66	12.24
Levene's F		3.396		3.396		0.00		1.345	0.86	0.785
Levene's Prob(F)		0.026*		0.026*		0.00*		0.291	0.528	0.574
Skewness		0.1573		0.1573		.		-0.1007	0.0052	0.1924
Kurtosis		-1.1451		-1.1451		.		-0.7811	-0.6405	-0.7179
Replicate F		3.204		3.204		0.000		3.429	7.117	6.333
Replicate Prob(F)		0.0560		0.0560		1.0000		0.0445	0.0039	0.0055
Treatment F		6.716		6.716		0.000		1.677	9.747	2.267
Treatment Prob(F)		0.0022		0.0022		1.0000		0.2008	0.0004	0.1007

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.

Missing data estimates are included in columns: Yates=3,4,7,8,11

Could not calculate LSD (% mean diff) for columns 9 because error mean square = 0.

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Sponsor Contact: A. Raeder - ISK

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

SETPU, Setaria pumila, yellow foxtail = US

PANDI, Panicum dichotomiflorum, Fall panicum = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

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

ARM Action Codes

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