

Purdue Weed Science

Corn Herbicide Programs Showcase	
Trial ID: 18S-TPAC-CORN-04	Location: TPAC Trial Year: 2018
Protocol ID: 18S-TPAC-CORN-04	Investigator: Dr. Bill Johnson
Project ID:	Study Director: Dustin Johnson
	Sponsor Contact: Syngenta & UPI

General Trial Information	
Study Director: Dustin Johnson	Title: Research Associate
Investigator: Dr. Bill Johnson	Title: Professor
Discipline: H herbicide	
Trial Status: E established	
Trial Location	
City: Lafayette	Country: USA United States
State/Prov.: Indiana	
Postal Code: 47909	
Latitude of LL Corner °: 40.29175 N	
Longitude of LL Corner °: 86.90705 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
Variety: DKC62-52RIB	Corn
Description: RR/LL Stacked	
Planting Rate, Unit: 32000 S/A	Planting Date: Apr-27-2018
Depth, Unit: 1.5 IN	Planting Method: PLANTD planted
Row Spacing, Unit: 30 IN	Planting Equipment: PP plot planter
	Emergence Date: May-7-2018
Soil Temperature, Unit: 61 F	Harvested Width, Unit: 5 FT
Soil Moisture: DRY dry	Harvested Length, Unit: 25 FT
	% Standard Moisture: 15.5

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: 12
Replications: 4	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.

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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	C	D
Application Date:	Apr-27-2018	May-18-2018	May-22-2018	Jun-8-2018
Appl. Start Time:	2:45 PM	4:15 PM	12:30 PM	2:25 PM
Appl. Stop Time:	3:10 PM	4:40 PM	12:50 PM	2:55 PM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PREPRE	POSPOS	POSPOS	POSPOS
Application Placement:	BROADC	BROADC	BROADC	BROADC
Applied By:	T. CAMPBELL	D. JOHNSON	J. HARMAAN	S. DESIMINI
Air Temperature, Unit:	67 F	82 F	73 F	85 F
% Relative Humidity:	22	34	82	57
Wind Velocity, Unit:	10 MPH	10 MPH	3 MPH	6 MPH
Wind Direction:	WNW	ENE	WNW	NNW
Dew Presence (Y/N):	N no	N no	N no	N no
Soil Temperature, Unit:	61 F	74 F	68 F	80 F
Soil Moisture:	DRY	DRY	SLIWET	SLIWET
% Cloud Cover:	0	80	80	40

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent:	00	12	14	17
Stage Minimum, Percent:	00	12	13	16
Stage Maximum, Percent:	00	13	14	17
Height, Unit:		4 IN	6 IN	20 IN
Height Minimum, Maximum:		3 5	4 8.5	18 24

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		14	14	12
Stage Minimum, Percent:		09	10	10
Stage Maximum, Percent:		19	18	16
Height, Unit:		2 IN	1.5 IN	3 IN
Height Minimum, Maximum:		0.25 5	0.25 3.5	0.25 10
Density, Unit:		8 FT2	8 FT2	19 FT2

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Application Equipment

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

Trt No Treatment Application Comment

2 4/27/18 Ran short on last plot 804 application A.
 7 5/17/18 Ran short on last plot 704 application B.
 8 5/17/18 Ran short on last plot 202 application B.
 7 6/8/18 Ran short on last plot 704 application D.
 9 6/8/18 Ran short on last plot 803 application D.

Date By Notes

May-31-2018 D. JOHNSON Untreated check plot 506 may have been sprayed.
 Jun-19-2018 D. JOHNSON Evening storm brought hail and slight damage to crop occurred. After application a rain shower occurred at 4:30pm which was no quite 2 hours.
 Plots 704 and 803 sprayed out early.
 Oct-19-2018 D. JOHNSON Did not rate due to no changes from last rating.

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Protocol ID: 18S-TPAC-CORN-04	Investigator: Dr. Bill Johnson		
Project ID:	Study Director: Dustin Johnson		
	Sponsor Contact: Syngenta & UPI		

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
1	UNTREATED CHECK									101	304	506	701
2	ACURON	3.44	LB/GAL	ZC	3	qt/a	A	PRE	90.0 mL/mx	102	305	502	804
3	ACURON	3.44	LB/GAL	ZC	1.5	qt/a	A	PRE	45.0 mL/mx	103	401	605	802
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	C	V3 CORN	54.0 mL/mx				
	ACTIVATOR 90 NIS	100	%	SL	0.25	% v/v	C	V3 CORN	4.5 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	C	V3 CORN	45.0 mL/mx				
4	ACURON	3.44	LB/GAL	ZC	1.5	qt/a	A	PRE	45.0 mL/mx	104	405	603	705
	ACURON	3.44	LB/GAL	ZC	1.5	qt/a	C	V3 CORN	45.0 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	26	fl oz/a	C	V3 CORN	24.37 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	C	V3 CORN	45.0 mL/mx				
5	BICEP II MAGNUM	5.5	LB/GAL	SC	1.5	qt/a	A	PRE	45.0 mL/mx	105	406	501	801
	HALEX GT	4.389	LBAE/GAL	L	3.6	pt/a	C	V3 CORN	54.0 mL/mx				
	ACTIVATOR 90 NIS	100	%	SL	0.25	% v/v	C	V3 CORN	4.5 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	C	V3 CORN	45.0 mL/mx				
6	BICEP II MAGNUM	5.5	LB/GAL	SC	1.5	qt/a	A	PRE	45.0 mL/mx	106	402	606	702
	CALLISTO XTRA	3.7	LB/GAL	L	24	fl oz/a	C	V3 CORN	22.5 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	26	fl oz/a	C	V3 CORN	24.37 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	C	V3 CORN	45.0 mL/mx				
7	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	B	V2 CORN OR 2-4" WEEDS	27.19 mL/mx	201	403	602	704
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	D	V7 CORN	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				
8	AATREX	4	LB/GAL	L	3	pt/a	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx	202	303	505	805
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	B	V2 CORN OR 2-4" WEEDS	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	D	V7 CORN	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				
9	COYOTE	3.67	LB/GAL	L	4	pt/a	B	V2 CORN OR 2-4" WEEDS	60.0 mL/mx	203	302	604	803
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	B	V2 CORN OR 2-4" WEEDS	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	D	V7 CORN	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				
10	COYOTE	3.67	LB/GAL	L	4	pt/a	B	V2 CORN OR 2-4" WEEDS	60.0 mL/mx	204	306	504	703
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	B	V2 CORN OR 2-4" WEEDS	20.62 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	D	V7 CORN	20.62 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				
11	COYOTE	3.67	LB/GAL	L	4	pt/a	B	V2 CORN OR 2-4" WEEDS	60.0 mL/mx	205	404	503	706
	AATREX	4	LB/GAL	L	3	pt/a	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	B	V2 CORN OR 2-4" WEEDS	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	INTERLINE	2.34	LB/GAL	SL	29	fl oz/a	D	V7 CORN	27.19 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				
12	COYOTE	3.67	LB/GAL	L	4	pt/a	B	V2 CORN OR 2-4" WEEDS	60.0 mL/mx	206	301	601	806
	AATREX	4	LB/GAL	L	3	pt/a	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	B	V2 CORN OR 2-4" WEEDS	20.62 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	B	V2 CORN OR 2-4" WEEDS	45.0 mL/mx				
	ROUNDUP POWERMAX	4.5	LBAE/GAL	SL	22	fl oz/a	D	V7 CORN	20.62 mL/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5	% v/v	D	V7 CORN	45.0 mL/mx				

Sort Order: Treatment

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Trial ID: 18S-TPAC-CORN-04	Location: TPAC		Trial Year: 2018			
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Project ID:						

Pest Type Pest Code Pest Name		W Weed AMBTR Giant ragweed		W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass		
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-17-2018	May-17-2018	May-31-2018	May-31-2018	May-31-2018	May-31-2018		
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	CONTRO	CONTRO		
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	A2	A2	A2	A2		
Days After First/Last Applic.	20 20	20 20	34 9	34 9	34 9	34 9		
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Days After Emergence	10 DE-1	10 DE-1	24 DE-1	24 DE-1	24 DE-1	24 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 ACURON	3 qt/a A		0 -	69 -	0 b	83 c	94 -	93 ab
3 ACURON HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		0 -	70 -	3 b	98 a	100 -	100 a
4 ACURON ACURON ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 1.5 qt/a C 26 fl oz/a C 2.5 % v/v C		0 -	73 -	9 a	99 a	100 -	100 a
5 BICEP II MAGNUM HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		0 -	70 -	2 b	99 a	100 -	100 a
6 BICEP II MAGNUM CALLISTO XTRA ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 24 fl oz/a C 26 fl oz/a C 2.5 % v/v C		0 -	70 -	0 b	93 a	99 -	96 ab
7 INTERLINE N-PAK AMS INTERLINE N-PAK AMS	29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D				0 b	84 bc	98 -	80 c
8 AATREX INTERLINE N-PAK AMS INTERLINE N-PAK AMS	3 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D				0 b	92 a	97 -	87 bc
9 COYOTE INTERLINE N-PAK AMS INTERLINE N-PAK AMS	4 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D				0 b	91 ab	100 -	96 ab
10 COYOTE ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX N-PAK AMS	4 pt/a B 22 fl oz/a B 2.5 % v/v B 22 fl oz/a D 2.5 % v/v D				0 b	96 a	100 -	100 a

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=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

				W Weed AMBTR Giant ragweed	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	
Pest Type								
Pest Code								
Pest Name								
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	Corn	
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	
Rating Date	May-17-2018	May-17-2018	May-31-2018	May-31-2018	May-31-2018	May-31-2018	May-31-2018	
Rating Type	PHYGEN	CONTROL	PHYGEN	CONTROL	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	1	
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	
Rating Timing	A1	A1	A2	A2	A2	A2	A2	
Days After First/Last Applic.	20 20	20 20	34 9	34 9	34 9	34 9	34 9	
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	
Days After Emergence	10 DE-1	10 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1	
ARM Action Codes	P	P	P	P	P	P	P	
Number of Decimals	0	0	0	0	0	0	0	
Trt Treatment No. Name	Rate Rate Unit	Appl Code	1	2	3	4	5	6
11 COYOTE	4 pt/a B				0 b	96 a	98 -	95 ab
AATREX	3 pt/a B							
INTERLINE	29 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
INTERLINE	29 fl oz/a D							
N-PAK AMS	2.5 % v/v D							
12 COYOTE	4 pt/a B				0 b	99 a	100 -	100 a
AATREX	3 pt/a B							
ROUNDUP POWERMAX	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
ROUNDUP POWERMAX	22 fl oz/a D							
N-PAK AMS	2.5 % v/v D							
LSD P=.05	.		9.1	3.0	7.7	4.6	10.3	
Standard Deviation	0.0		5.9	2.1	5.3	3.2	7.1	
CV	0.0		8.42	166.18	5.69	3.25	7.47	
Levene's F	0.00		0.894	2.88	1.556	1.707	2.888	
Levene's Prob(F)	0.00*		0.492	0.011*	0.164	0.121	0.011*	
Skewness	.		-0.2906	3.14*	-1.5158*	-3.8719*	-2.5796*	
Kurtosis	.		-0.7252	9.6798*	1.5004*	17.5757*	7.631*	
Replicate F	0.000		2.607	1.143	0.632	2.772	3.404	
Replicate Prob(F)	1.0000		0.0999	0.3477	0.6000	0.0587	0.0302	
Treatment F	0.000		0.214	7.323	4.314	1.512	3.464	
Treatment Prob(F)	1.0000		0.9254	0.0001	0.0009	0.1836	0.0040	

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Untreated treatment(s) 1 excluded from analysis.

Missing data estimates are included in columns: Yates=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Pest Type Pest Code Pest Name		W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass		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-5-2018	Jun-5-2018	Jun-5-2018	Jun-5-2018	Jun-14-2018	Jun-14-2018		
Rating Type	PHYGEN	CONTROL	CONTRO	CONTRO	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	A3	A3	A3	A3	A4	A4		
Days After First/Last Applic.	39 14	39 14	39 14	39 14	48 6	48 6		
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Days After Emergence	29 DE-1	29 DE-1	29 DE-1	29 DE-1	38 DE-1	38 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	7	8	9	10	11	12
1 UNTREATED CHECK			0	0	0	0	0	0
2 ACURON	3 qt/a A		0 b	85 c	96 -	94 abc	0 b	72 b
3 ACURON HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		1 b	96 ab	100 -	100 a	0 b	88 a
4 ACURON ACURON ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 1.5 qt/a C 26 fl oz/a C 2.5 % v/v C		8 a	98 a	100 -	100 a	3 a	92 a
5 BICEP II MAGNUM HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		2 b	94 ab	100 -	100 a	0 b	78 b
6 BICEP II MAGNUM CALLISTO XTRA ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 24 fl oz/a C 26 fl oz/a C 2.5 % v/v C		0 b	88 bc	99 -	96 abc	0 b	79 b
7 INTERLINE N-PAK AMS INTERLINE N-PAK AMS	29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		0 b	66 d	98 -	84 d	0 b	89 a
8 AATREX INTERLINE N-PAK AMS INTERLINE N-PAK AMS	3 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		0 b	84 c	96 -	86 d	0 b	91 a
9 COYOTE INTERLINE N-PAK AMS INTERLINE N-PAK AMS	4 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		0 b	87 bc	99 -	92 cd	0 b	94 a
10 COYOTE ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX N-PAK AMS	4 pt/a B 22 fl oz/a B 2.5 % v/v B 22 fl oz/a D 2.5 % v/v D		0 b	92 abc	100 -	100 a	0 b	93 a

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=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Pest Type		W Weed	W Weed	W Weed		W Weed		
Pest Code		AMBTR	SETFA	ECHSS		AMBTR		
Pest Name		Giant ragweed	Giant foxtail	Barnyardgrass		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-5-2018	Jun-5-2018	Jun-5-2018	Jun-5-2018	Jun-14-2018	Jun-14-2018		
Rating Type	PHYGEN	CONTROL	CONTRO	CONTRO	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	A3	A3	A3	A3	A4	A4		
Days After First/Last Applic.	39 14	39 14	39 14	39 14	48 6	48 6		
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A		
Days After Emergence	29 DE-1	29 DE-1	29 DE-1	29 DE-1	38 DE-1	38 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	7	8	9	10	11	12
11 COYOTE	4 pt/a B		0 b	94 ab	100 -	92 bcd	0 b	94 a
AATREX	3 pt/a B							
INTERLINE	29 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
INTERLINE	29 fl oz/a D							
N-PAK AMS	2.5 % v/v D							
12 COYOTE	4 pt/a B		0 b	96 ab	100 -	100 ab	0 b	95 a
AATREX	3 pt/a B							
ROUNDUP POWERMAX	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
ROUNDUP POWERMAX	22 fl oz/a D							
N-PAK AMS	2.5 % v/v D							
LSD P=.05	2.5	9.5	3.8	7.7	1.5	7.9		
Standard Deviation	1.7	6.5	2.7	5.3	1.1	5.5		
CV	174.47	7.35	2.69	5.57	393.47	6.27		
Levene's F	1.634	1.327	0.685	1.36		9.569		
Levene's Prob(F)	0.14	0.257	0.731	0.244		0.001*		
Skewness	3.1766*	-1.4615*	-3.471*	-1.2747*	4.7264*	-2.253*		
Kurtosis	9.4159*	1.1516	14.7024*	0.0876	21.9603*	6.0772*		
Replicate F	0.896	0.859	1.459	1.261	1.000	2.984		
Replicate Prob(F)	0.4546	0.4731	0.2455	0.3067	0.4064	0.0475		
Treatment F	7.572	7.621	1.153	4.779	2.842	8.260		
Treatment Prob(F)	0.0001	0.0001	0.3587	0.0005	0.0130	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=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Pest Type Pest Code Pest Name	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed AMBTR Giant ragweed	W Weed SETFA Giant foxtail	W Weed ECHSS Barnyardgrass	W Weed AMBTR Giant ragweed		
Crop Code Crop Name Part Rated Rating Date Rating Type Rating Unit Number of Subsamples Assessed By	ZEAMX Corn PLOT - Jun-14-2018 CONTRO % 1 D. JOHNSON	ZEAMX Corn PLOT - Jun-14-2018 CONTRO % 1 D. JOHNSON	ZEAMX Corn PLOT - Jun-27-2018 CONTROL % 1 D. JOHNSON	ZEAMX Corn PLOT - Jun-27-2018 CONTRO % 1 D. JOHNSON	ZEAMX Corn PLOT - Jun-27-2018 CONTRO % 1 D. JOHNSON	ZEAMX Corn PLOT - Jul-5-2018 CONTROL % 1 D. JOHNSON		
Rating Timing Days After First/Last Applic. Trt-Eval Interval Days After Emergence ARM Action Codes Number of Decimals	A4 48 6 14 DA-A 38 DE-1 P 0	A4 48 6 14 DA-A 38 DE-1 P 0	A5 61 19 14 DA-A 51 DE-1 P 0	A5 61 19 14 DA-A 51 DE-1 P 0	A5 61 19 14 DA-A 51 DE-1 P 0	A6 69 27 14 DA-A 59 DE-1 P 0		
Trt Treatment No. Name	Rate Rate Unit	Appl Code	13	14	15	16	17	18
1 UNTREATED CHECK			0	0	0	0	0	0
2 ACURON	3 qt/a A		96 -	96 -	76 d	94 -	94 -	75 c
3 ACURON HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		100 -	100 -	90 abc	100 -	100 -	89 ab
4 ACURON ACURON ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 1.5 qt/a C 26 fl oz/a C 2.5 % v/v C		100 -	100 -	93 abc	100 -	100 -	93 ab
5 BICEP II MAGNUM HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a A 3.6 pt/a C 0.25 % v/v C 2.5 % v/v C		100 -	100 -	70 d	100 -	100 -	55 d
6 BICEP II MAGNUM CALLISTO XTRA ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a A 24 fl oz/a C 26 fl oz/a C 2.5 % v/v C		99 -	96 -	76 d	99 -	99 -	74 c
7 INTERLINE N-PAK AMS INTERLINE N-PAK AMS	29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		100 -	93 -	88 c	100 -	94 -	86 b
8 AATREX INTERLINE N-PAK AMS INTERLINE N-PAK AMS	3 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		100 -	95 -	89 bc	99 -	96 -	88 ab
9 COYOTE INTERLINE N-PAK AMS INTERLINE N-PAK AMS	4 pt/a B 29 fl oz/a B 2.5 % v/v B 29 fl oz/a D 2.5 % v/v D		100 -	99 -	95 ab	100 -	100 -	96 ab
10 COYOTE ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX N-PAK AMS	4 pt/a B 22 fl oz/a B 2.5 % v/v B 22 fl oz/a D 2.5 % v/v D		100 -	100 -	96 ab	100 -	100 -	97 a

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=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA	ECHSS	AMBTR	SETFA	ECHSS	AMBTR			
Pest Name	Giant foxtail	Barnyardgrass	Giant ragweed	Giant foxtail	Barnyardgrass	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-14-2018	Jun-14-2018	Jun-27-2018	Jun-27-2018	Jun-27-2018	Jul-5-2018			
Rating Type	CONTRO	CONTRO	CONTROL	CONTRO	CONTRO	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	A4	A4	A5	A5	A5	A6			
Days After First/Last Applic.	48 6	48 6	61 19	61 19	61 19	69 27			
Trt-Eval Interval	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A	14 DA-A			
Days After Emergence	38 DE-1	38 DE-1	51 DE-1	51 DE-1	51 DE-1	59 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	13	14	15	16	17	18
11	COYOTE	4 pt/a	B	100 -	99 -	95 abc	100 -	100 -	96 ab
	AATREX	3 pt/a	B						
	INTERLINE	29 fl oz/a	B						
	N-PAK AMS	2.5 % v/v	B						
	INTERLINE	29 fl oz/a	D						
	N-PAK AMS	2.5 % v/v	D						
12	COYOTE	4 pt/a	B	100 -	100 -	96 a	100 -	100 -	97 a
	AATREX	3 pt/a	B						
	ROUNDUP POWERMAX	22 fl oz/a	B						
	N-PAK AMS	2.5 % v/v	B						
	ROUNDUP POWERMAX	22 fl oz/a	D						
	N-PAK AMS	2.5 % v/v	D						
LSD P=.05	3.5	5.4	6.9	5.7	6.4	10.5			
Standard Deviation	2.4	3.7	4.8	4.0	4.4	7.3			
CV	2.42	3.82	5.47	4.0	4.48	8.48			
Levene's F	0.94	0.657	6.072	0.919	1.109	6.116			
Levene's Prob(F)	0.511	0.755	0.001*	0.528	0.385	0.001*			
Skewness	-5.8191*	-2.2431*	-1.355*	-5.9706*	-3.7847*	-1.9146*			
Kurtosis	35.2771*	4.3381*	0.9287	37.3742*	15.769*	3.7142*			
Replicate F	0.784	1.889	1.697	0.709	1.602	1.197			
Replicate Prob(F)	0.5121	0.1528	0.1896	0.5542	0.2097	0.3282			
Treatment F	0.922	1.894	15.367	0.894	1.359	12.989			
Treatment Prob(F)	0.5271	0.0862	0.0001	0.5496	0.2460	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=10,12,15,18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Trt No.	Treatment Name	Rate	Appl Code	19	20	21	22	23
1	UNTREATED CHECK			0	0	3.0	10.0	18.7
2	ACURON	3 qt/a	A	93 -	93 ab	39.3 -	15.7 -	244.1 -
3	ACURON HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a 3.6 pt/a 0.25 % v/v 2.5 % v/v	A C C C	100 -	100 a	40.2 -	15.6 -	250.3 -
4	ACURON ACURON ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a 1.5 qt/a 26 fl oz/a 2.5 % v/v	A C C C	100 -	100 a	39.9 -	15.4 -	248.7 -
5	BICEP II MAGNUM HALEX GT ACTIVATOR 90 NIS N-PAK AMS	1.5 qt/a 3.6 pt/a 0.25 % v/v 2.5 % v/v	A C C C	100 -	100 a	39.5 -	15.5 -	246.1 -
6	BICEP II MAGNUM CALLISTO XTRA ROUNDUP POWERMAX N-PAK AMS	1.5 qt/a 24 fl oz/a 26 fl oz/a 2.5 % v/v	A C C C	99 -	96 ab	39.1 -	15.6 -	242.9 -
7	INTERLINE N-PAK AMS INTERLINE N-PAK AMS	29 fl oz/a 2.5 % v/v 29 fl oz/a 2.5 % v/v	B B D D	95 -	89 b	38.8 -	15.5 -	241.7 -
8	AATREX INTERLINE N-PAK AMS INTERLINE N-PAK AMS	3 pt/a 29 fl oz/a 2.5 % v/v 29 fl oz/a 2.5 % v/v	B B B D D	95 -	93 ab	41.2 -	15.8 -	255.3 -
9	COYOTE INTERLINE N-PAK AMS INTERLINE N-PAK AMS	4 pt/a 29 fl oz/a 2.5 % v/v 29 fl oz/a 2.5 % v/v	B B B D D	100 -	100 a	43.5 -	15.7 -	270.3 -
10	COYOTE ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX N-PAK AMS	4 pt/a 22 fl oz/a 2.5 % v/v 22 fl oz/a 2.5 % v/v	B B B D D	100 -	100 a	41.1 -	15.5 -	255.7 -

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=10, 12, 15, 18

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Pest Type	W Weed	W Weed			
Pest Code	SETFA	ECHSS			
Pest Name	Giant foxtail	Barnyardgrass			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jul-5-2018	Jul-5-2018	Oct-9-2018	Oct-9-2018	Oct-9-2018
Rating Type	CONTRO	CONTRO	YIELD	MOICON	YIELD
Rating Unit	%	%	lb/plot	%	BU
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A6	A6			
Days After First/Last Applic.	69 27	69 27	165 123	165 123	165 123
Trt-Eval Interval	14 DA-A	14 DA-A	123 DA-A	123 DA-A	123 DA-A
Days After Emergence	59 DE-1	59 DE-1	155 DE-1	155 DE-1	155 DE-1
ARM Action Codes	P	P	P	P	TY1
Number of Decimals	0	0	1	1	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	19	20	21
11 COYOTE	4 pt/a	B	100 -	100 a	40.8 -
AATREX	3 pt/a	B			15.6 -
INTERLINE	29 fl oz/a	B			254.0 -
N-PAK AMS	2.5 % v/v	B			
INTERLINE	29 fl oz/a	D			
N-PAK AMS	2.5 % v/v	D			
12 COYOTE	4 pt/a	B	100 -	100 a	41.1 -
AATREX	3 pt/a	B			15.2 -
ROUNDUP POWERMAX	22 fl oz/a	B			256.6 -
N-PAK AMS	2.5 % v/v	B			
ROUNDUP POWERMAX	22 fl oz/a	D			
N-PAK AMS	2.5 % v/v	D			
LSD P=.05	6.0	7.7	5.20	0.57	32.32
Standard Deviation	4.1	5.3	3.60	0.40	22.38
CV	4.2	5.49	8.91	2.56	8.9
Levene's F	2.65	1.716	1.512	1.17	1.509
Levene's Prob(F)	0.017*	0.118	0.179	0.345	0.18
Skewness	-3.8408*	-2.5984*	-0.6018	0.1091	-0.6512
Kurtosis	17.7598*	6.4081*	0.9566	-0.4813	1.0603
Replicate F	0.706	1.588	1.165	0.178	1.201
Replicate Prob(F)	0.5558	0.2129	0.3393	0.9104	0.3262
Treatment F	1.748	2.370	0.552	0.793	0.543
Treatment Prob(F)	0.1154	0.0331	0.8389	0.6362	0.8453

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=10,12,15,18
Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Purdue Weed Science

Corn Herbicide Programs Showcase

Trial ID: 18S-TPAC-CORN-04	Location: TPAC	Trial Year: 2018
Protocol ID: 18S-TPAC-CORN-04	Investigator: Dr. Bill Johnson	
Project ID:	Study Director: Dustin Johnson	
	Sponsor Contact: Syngenta & UPI	

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

SETFA, Setaria faberi, Giant foxtail = US

ECHSS, Echinochloa sp., Barnyardgrass = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

lb/plot = pounds per plot

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

A6 = 6th Assessment according to Trial Schedule

ARM Action Codes

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

TY1 = $6.222857 \cdot [21] \cdot (100 - [22]) / 84.5$