

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10	Location: TPAC	Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-10	Investigator: Dr. Bill Johnson	
Project ID: H17C38B	Study Director: Dustin Johnson	
Sponsor Contact: G. Welker - BASF		

General Trial Information

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

Discipline: H herbicide
Trial Status: E established
Initiation Date: Apr-25-2017

Trial Location

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

Latitude of LL Corner °: 40.29176 N
Longitude of LL Corner °: 86.91116 W

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

1. Compare Armerzon PRO efficacy with different adjuvants (NIS, COC, MSO) 2. Compare Armerzon PRO tank mix partners Atrazine and Engenia 3. Compare Armerzon PRO efficacy vs competitive treatments prior to 12 inch tall corn, V2 (atrazine) and V4 (no atrazine)

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: DK62-08STXRIB		
Description: RR/LL Stacked		
Planting Rate, Unit: 32000 S/A	Planting Date: Apr-25-2017	
Depth, Unit: 1.5 IN	Planting Method: PLANTD planted	
Row Spacing, Unit: 30 IN	Planting Equipment: PP Plot Planter	
	Emergence Date: May-15-2017	
Soil Temperature, Unit: 70 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

Pest 2 Type: W **Code:** ECHSS Echinochloa sp.
Common Name: Barnyardgrass

Pest 3 Type: W **Code:** CHEAL Chenopodium album
Common Name: common lambsquarters

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	32	14
Stage Minimum, Percent:	33	10
Stage Maximum, Percent:	34	18
Height, Unit:	1.25 IN	4 IN
Height Minimum, Maximum:	0.5 2	0.5 8
Density, Unit:	100 YD2	10 FT2
Pest 2 Code, Type, Scale:	ECHSS W	ECHSS W
Stage Majority, Percent:	11	13
Stage Minimum, Percent:	11	11
Stage Maximum, Percent:	12	15
Height, Unit:	1.25 IN	3 IN
Height Minimum, Maximum:	0.5 2	0.25 5
Density, Unit:	100 YD2	10 FT2
Pest 3 Code, Type, Scale:	CHEAL W	CHEAL W
Stage Majority, Percent:	31	32
Stage Minimum, Percent:	10	10
Stage Maximum, Percent:	32	33
Height, Unit:	1.25 IN	1.75 IN
Height Minimum, Maximum:	0.5 2	0.5 3
Density, Unit:	75 YD2	8 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	18 PSI	18 PSI
Nozzle Type:	FLAFXR	FLAFXR
Nozzle Size:	XR11002	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 liters	1.8 liters
Propellant:	COMCO2	COMCO2

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Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
44.995	ml	CLASS ACT RIDION	100	%	L	
56.250	ml	ACURON	3.44	LB/GAL	ZC	
46.875	ml	RESICORE	3.29	LB/GAL	L	
67.500	ml	HALEX GT	4.389	LBAE/GAL	L	
22.498	ml	MSO	100	%	SL	
42.187	ml	ACURON FLEXI	3.26	LB/GAL	ZC	

* 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 1.8 liters (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

* 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 1.8 liters.

Trial Comments

5/31/17-Corn was majority V-4, but sprayed because giant ragweed was getting so tall 4-8"

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Trial ID: 17S-TPAC-CORN-10
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Location: TPAC Trial Year: 2017
 Investigator: Dr. Bill Johnson
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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	AMBTR	ECHSS	CHEAL		AMBTR	ECHSS		
Pest Name	Giant ragweed	Barnyardgrass	common lambsqu>		Giant ragweed	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-29-2017	May-29-2017	May-29-2017	May-29-2017	Jun-7-2017	Jun-7-2017		
Rating Type	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER	M. ZIMMER		
Rating Timing	A1	A1	A1	A1	A2	A2		
Days After First/Last Applic.	7 7	7 7	7 7	7 7	16 7	16 7		
Days After Emergence	14 DE-1	14 DE-1	14 DE-1	14 DE-1	23 DE-1	23 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	1	2	3	4	5	6
1 UNTREATED CHECK			0 c	0 b	0 b	0 c	0 d	0 d
2 ARMEZON PRO	16.0 fl oz/a A		94 a	100 a	100 a	13 b	95 a	100 a
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
3 ARMEZON PRO	16.0 fl oz/a A		92 a	100 a	100 a	11 b	96 a	100 a
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
ACTIVATOR 90 NIS	0.25 % v/v A							
N-PAK AMS	2.5 % v/v A							
4 ARMEZON PRO	16.0 fl oz/a A		94 a	100 a	100 a	16 b	97 a	100 a
ENGENIA	6.4 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
CLASS ACT RIDION	1 % v/v A							
5 ARMEZON PRO	16.0 fl oz/a A		96 a	100 a	100 a	16 b	97 a	100 a
ENGENIA	6.4 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
ACTIVATOR 90 NIS	0.25 % v/v A							
CLASS ACT RIDION	1 % v/v A							
6 ACURON	48.0 fl oz/a A		88 b	100 a	100 a	28 a	98 a	100 a
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
7 RESICORE	40.0 fl oz/a A		94 a	100 a	100 a	31 a	99 a	100 a
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
8 HALEX GT	57.6 fl oz/a B						90 b	68 c
ROUNDUP POWERMAX	5.3 fl oz/a B							
ACTIVATOR 90 NIS	0.25 % v/v B							
N-PAK AMS	2.5 % v/v B							
9 ARMEZON PRO	16.0 fl oz/a B						86 c	80 b
ROUNDUP POWERMAX	32.0 fl oz/a B							
MSO	1.0 % v/v B							
N-PAK AMS	2.5 % v/v B							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns: 2,3,7,11,15,16,19 because error mean square = 0.

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	Sponsor Contact: G. Welker - BASF

	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Type	AMBTR	ECHSS	CHEAL		AMBTR	ECHSS
Pest Code	AMBTR	ECHSS	CHEAL		AMBTR	ECHSS
Pest Name	Giant ragweed	Barnyardgrass	common lambsqu>		Giant ragweed	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-29-2017	May-29-2017	May-29-2017	May-29-2017	Jun-7-2017	Jun-7-2017
Rating Type	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER	M. ZIMMER
Rating Timing	A1	A1	A1	A1	A2	A2
Days After First/Last Applic.	7 7	7 7	7 7	7 7	16 7	16 7
Days After Emergence	14 DE-1	14 DE-1	14 DE-1	14 DE-1	23 DE-1	23 DE-1
ARM Action Codes	P	P	P	P	P	P
Number of Decimals	0	0	0	0	0	0
Trt Treatment						
No. Name	1	2	3	4	5	6
10 ACURON FLEXI					85 c	78 b
ROUNDUP POWERMAX						
ACTIVATOR 90 NIS						
N-PAK AMS						
LSD P=.05	4.1	.	.	8.4	3.8	7.6
Standard Deviation	2.7	0.0	0.0	5.7	2.6	5.2
CV	3.44	0.0	0.0	34.62	3.14	6.32
Bartlett's X2	3.875	0.0	0.0	10.834	13.784	2.858
P(Bartlett's X2)	0.568	.	.	0.055	0.088	0.24
Skewness	-2.1105*	-2.1586*	-2.1586*	0.6532	-2.5994*	-2.0245*
Kurtosis	2.7375*	2.8592*	2.8592*	0.5075	5.3727*	3.1801*
Replicate F	0.660	0.000	0.000	0.957	0.944	2.020
Replicate Prob(F)	0.5875	1.0000	1.0000	0.4343	0.4330	0.1347
Treatment F	662.137	0.000	0.000	13.491	515.579	145.306
Treatment Prob(F)	0.0001	1.0000	1.0000	0.0001	0.0001	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed			
Pest Code	CHEAL	AMBTR	ECHSS	CHEAL			
Pest Name	common lambsqu>	Giant ragweed	Barnyardgrass	common lambsqu>			
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn	Corn			
Part Rated	PLANT -	PLOT -	PLOT -	PLOT -			
Rating Date	Jun-7-2017	Jun-7-2017	Jun-12-2017	Jun-12-2017			
Rating Type	CONTROL	PHYGEN	CONTROL	CONTROL			
Rating Unit	%	%	%	%			
Number of Subsamples	1	1	1	1			
Assessed By	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON			
Rating Timing	A2	A2	A3	A3			
Days After First/Last Applic.	16 7	16 7	21 12	21 12			
Days After Emergence	23 DE-1	23 DE-1	28 DE-1	28 DE-1			
ARM Action Codes	P	P	P	P			
Number of Decimals	0	0	0	0			
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	7	8	9	10	11
1 UNTREATED CHECK			0 b	0 a	0 b	0 c	0 b
2 ARMEZON PRO	16.0 fl oz/a A		100 a	0 a	88 a	97 a	100 a
AATREX	16.0 fl oz/a A						
ROUNDUP POWERMAX	32.0 fl oz/a A						
SUPERB HC	0.5 % v/v A						
N-PAK AMS	2.5 % v/v A						
3 ARMEZON PRO	16.0 fl oz/a A		100 a	1 a	89 a	96 a	100 a
AATREX	16.0 fl oz/a A						
ROUNDUP POWERMAX	32.0 fl oz/a A						
ACTIVATOR 90 NIS	0.25 % v/v A						
N-PAK AMS	2.5 % v/v A						
4 ARMEZON PRO	16.0 fl oz/a A		100 a	0 a	89 a	97 a	100 a
ENGENIA	6.4 fl oz/a A						
ROUNDUP POWERMAX	32.0 fl oz/a A						
SUPERB HC	0.5 % v/v A						
CLASS ACT RIDION	1 % v/v A						
5 ARMEZON PRO	16.0 fl oz/a A		100 a	1 a	93 a	96 a	100 a
ENGENIA	6.4 fl oz/a A						
ROUNDUP POWERMAX	32.0 fl oz/a A						
ACTIVATOR 90 NIS	0.25 % v/v A						
CLASS ACT RIDION	1 % v/v A						
6 ACURON	48.0 fl oz/a A		100 a	0 a	92 a	97 a	100 a
ROUNDUP POWERMAX	32.0 fl oz/a A						
SUPERB HC	0.5 % v/v A						
N-PAK AMS	2.5 % v/v A						
7 RESICORE	40.0 fl oz/a A		100 a	2 a	96 a	97 a	100 a
AATREX	16.0 fl oz/a A						
ROUNDUP POWERMAX	32.0 fl oz/a A						
SUPERB HC	0.5 % v/v A						
N-PAK AMS	2.5 % v/v A						
8 HALEX GT	57.6 fl oz/a B		100 a	1 a	92 a	85 b	100 a
ROUNDUP POWERMAX	5.3 fl oz/a B						
ACTIVATOR 90 NIS	0.25 % v/v B						
N-PAK AMS	2.5 % v/v B						
9 ARMEZON PRO	16.0 fl oz/a B		100 a	0 a	94 a	97 a	100 a
ROUNDUP POWERMAX	32.0 fl oz/a B						
MSO	1.0 % v/v B						
N-PAK AMS	2.5 % v/v B						

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	W Weed CHEAL common lambsqu>	ZEAMX Corn	W Weed AMBTR Giant ragweed	W Weed ECHSS Barnyardgrass	W Weed CHEAL common lambsqu>
Pest Type					
Pest Code					
Pest Name					
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLANT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-7-2017	Jun-7-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017
Rating Type	CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A2	A2	A3	A3	A3
Days After First/Last Applic.	16 7	16 7	21 12	21 12	21 12
Days After Emergence	23 DE-1	23 DE-1	28 DE-1	28 DE-1	28 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment No. Name	Rate Unit Code				
		7	8	9	10
10 ACURON FLEXI	36.0 fl oz/a B	100 a	1 a	88 a	90 a
ROUNDUP POWERMAX	32.0 fl oz/a B				
ACTIVATOR 90 NIS	0.25 % v/v B				
N-PAK AMS	2.5 % v/v B				
LSD P=.05	.	2.3	5.3	4.8	.
Standard Deviation	0.0	1.6	3.6	3.3	0.0
CV	0.0	228.7	4.44	3.92	0.0
Bartlett's X2	0.0	0.002	10.061	7.317	0.0
P(Bartlett's X2)	.	1.00	0.261	0.503	.
Skewness	-2.7717*	2.1384*	-2.6641*	-2.6343*	-2.7717*
Kurtosis	5.9791*	2.822*	5.6121*	5.4874*	5.9791*
Replicate F	0.000	3.095	0.567	1.041	0.000
Replicate Prob(F)	1.0000	0.0435	0.6414	0.3901	1.0000
Treatment F	0.000	0.928	253.012	327.208	0.000
Treatment Prob(F)	1.0000	0.5172	0.0001	0.0001	1.0000

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Pest Type		W Weed	W Weed	W Weed		W Weed		
Pest Code		AMBTR	ECHSS	CHEAL		AMBTR		
Pest Name		Giant ragweed	Barnyardgrass	common lambsqu>		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-12-2017	Jun-21-2017	Jun-21-2017	Jun-21-2017	Jun-21-2017	Jul-3-2017		
Rating Type	PHYGEN	CONTROL	CONTROL	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	A3	A4	A4	A4	A4	A5		
Days After First/Last Applic.	21 12	30 21	30 21	30 21	30 21	42 33		
Days After Emergence	28 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1	49 DE-1		
ARM Action Codes	P	P	P	P	P	P		
Number of Decimals	0	0	0	0	0	0		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	12	13	14	15	16	17
1 UNTREATED CHECK			0 a	0 c	0 c	0 b	0 a	0 c
2 ARMEZON PRO	16.0 fl oz/a A		0 a	84 b	100 a	100 a	0 a	63 b
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
3 ARMEZON PRO	16.0 fl oz/a A		1 a	85 b	99 ab	100 a	0 a	65 b
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
ACTIVATOR 90 NIS	0.25 % v/v A							
N-PAK AMS	2.5 % v/v A							
4 ARMEZON PRO	16.0 fl oz/a A		0 a	89 ab	94 ab	100 a	0 a	76 ab
ENGENIA	6.4 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
CLASS ACT RIDION	1 % v/v A							
5 ARMEZON PRO	16.0 fl oz/a A		1 a	96 a	96 ab	100 a	0 a	85 a
ENGENIA	6.4 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
ACTIVATOR 90 NIS	0.25 % v/v A							
CLASS ACT RIDION	1 % v/v A							
6 ACURON	48.0 fl oz/a A		0 a	91 ab	99 ab	100 a	0 a	81 ab
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
7 RESICORE	40.0 fl oz/a A		2 a	96 a	94 ab	100 a	0 a	87 a
AATREX	16.0 fl oz/a A							
ROUNDUP POWERMAX	32.0 fl oz/a A							
SUPERB HC	0.5 % v/v A							
N-PAK AMS	2.5 % v/v A							
8 HALEX GT	57.6 fl oz/a B		0 a	98 a	90 b	100 a	0 a	92 a
ROUNDUP POWERMAX	5.3 fl oz/a B							
ACTIVATOR 90 NIS	0.25 % v/v B							
N-PAK AMS	2.5 % v/v B							
9 ARMEZON PRO	16.0 fl oz/a B		1 a	98 a	96 ab	100 a	0 a	87 a
ROUNDUP POWERMAX	32.0 fl oz/a B							
MSO	1.0 % v/v B							
N-PAK AMS	2.5 % v/v B							

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 Could not calculate LSD (% mean diff) for columns: 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10	Location: TPAC	Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-10	Investigator: Dr. Bill Johnson	
Project ID: H17C38B	Study Director: Dustin Johnson	
Sponsor Contact: G. Welker - BASF		

		W Weed AMBTR	W Weed ECHSS	W Weed CHEAL	W Weed AMBTR
Pest Type		Giant ragweed	Barnyardgrass	common lambsqu>	Giant ragweed
Pest Code		ZEAMX	ZEAMX	ZEAMX	ZEAMX
Pest Name		Corn	Corn	Corn	Corn
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-12-2017	Jun-21-2017	Jun-21-2017	Jun-21-2017	Jun-21-2017
Rating Type	PHYGEN	CONTROL	CONTROL	CONTROL	PHYGEN
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A3	A4	A4	A4	A4
Days After First/Last Applic.	21 12	30 21	30 21	30 21	30 21
Days After Emergence	28 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code	12	13	14	15
10 ACURON FLEXI	36.0 fl oz/a B	1 a	97 a	93 ab	100 a
ROUNDUP POWERMAX	32.0 fl oz/a B				0 a
ACTIVATOR 90 NIS	0.25 % v/v B				
N-PAK AMS	2.5 % v/v B				90 a
LSD P=.05	2.1	6.9	5.8	.	.
Standard Deviation	1.4	4.7	4.0	0.0	0.0
CV	221.76	5.69	4.63	0.0	0.0
Bartlett's X2	0.944	33.037	9.856	0.0	0.0
P(Bartlett's X2)	0.918	0.001*	0.197	.	.
Skewness	2.2366*	-2.5219*	-2.652*	-2.7717*	.
Kurtosis	3.4275*	5.0419*	5.5521*	5.9791*	.
Replicate F	3.995	1.612	0.726	0.000	0.000
Replicate Prob(F)	0.0178	0.2098	0.5453	1.0000	1.0000
Treatment F	1.075	157.597	232.379	0.000	0.000
Treatment Prob(F)	0.4118	0.0001	0.0001	1.0000	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns: 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10
 Protocol ID: 17S-TPAC-CORN-10
 Project ID: H17C38B

Location: TPAC Trial Year: 2017
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

W Weed	W Weed	W Weed	W Weed	
ECHSS	CHEAL	AMBTR	ECHSS	
Barnyardgrass	common lambsqu>	Giant ragweed	Barnyardgrass	
ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Corn	Corn	Corn	Corn	Corn
PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Jul-3-2017	Jul-3-2017	Jul-12-2017	Jul-12-2017	Oct-21-2017
CONTROL	CONTROL	CONTROL	CONTROL	YIELD
%	%	%	%	LB
1	1	1	1	1
D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	T. CAMPBELL
Rating Timing	A5	A5	A6	A6
Days After First/Last Applic.	42 33	42 33	51 42	51 42
Days After Emergence	49 DE-1	49 DE-1	58 DE-1	58 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	18	19
1 UNTREATED CHECK			0 b	0 b
2 ARMEZON PRO	16.0 fl oz/a A		94 a	100 a
AATREX	16.0 fl oz/a A			30 b
ROUNDUP POWERMAX	32.0 fl oz/a A			
SUPERB HC	0.5 % v/v A			
N-PAK AMS	2.5 % v/v A			85 a
3 ARMEZON PRO	16.0 fl oz/a A		91 a	100 a
AATREX	16.0 fl oz/a A			35 b
ROUNDUP POWERMAX	32.0 fl oz/a A			
ACTIVATOR 90 NIS	0.25 % v/v A			
N-PAK AMS	2.5 % v/v A			83 a
4 ARMEZON PRO	16.0 fl oz/a A		84 a	100 a
ENGENIA	6.4 fl oz/a A			59 a
ROUNDUP POWERMAX	32.0 fl oz/a A			
SUPERB HC	0.5 % v/v A			
CLASS ACT RIDION	1 % v/v A			75 a
5 ARMEZON PRO	16.0 fl oz/a A		86 a	100 a
ENGENIA	6.4 fl oz/a A			68 a
ROUNDUP POWERMAX	32.0 fl oz/a A			
ACTIVATOR 90 NIS	0.25 % v/v A			
CLASS ACT RIDION	1 % v/v A			74 a
6 ACURON	48.0 fl oz/a A		90 a	100 a
ROUNDUP POWERMAX	32.0 fl oz/a A			66 a
SUPERB HC	0.5 % v/v A			
N-PAK AMS	2.5 % v/v A			81 a
7 RESICORE	40.0 fl oz/a A		80 a	100 a
AATREX	16.0 fl oz/a A			76 a
ROUNDUP POWERMAX	32.0 fl oz/a A			
SUPERB HC	0.5 % v/v A			
N-PAK AMS	2.5 % v/v A			66 a
8 HALEX GT	57.6 fl oz/a B		78 a	100 a
ROUNDUP POWERMAX	5.3 fl oz/a B			82 a
ACTIVATOR 90 NIS	0.25 % v/v B			
N-PAK AMS	2.5 % v/v B			61 a
9 ARMEZON PRO	16.0 fl oz/a B		88 a	100 a
ROUNDUP POWERMAX	32.0 fl oz/a B			71 a
MSO	1.0 % v/v B			
N-PAK AMS	2.5 % v/v B			71 a

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns: 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type	W Weed	W Weed	W Weed	W Weed	
Pest Code	ECHSS	CHEAL	AMBTR	ECHSS	
Pest Name	Barnyardgrass	common lambsqu	Giant ragweed	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-3-2017	Jul-3-2017	Jul-12-2017	Jul-12-2017	Oct-21-2017
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	YIELD
Rating Unit	%	%	%	%	LB
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	T. CAMPBELL
Rating Timing	A5	A5	A6	A6	
Days After First/Last Applic.	42 33	42 33	51 42	51 42	152 143
Days After Emergence	49 DE-1	49 DE-1	58 DE-1	58 DE-1	159 DE-1
ARM Action Codes	P	P	P	P	
Number of Decimals	0	0	0	0	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	18	19	20
10 ACURON FLEXI	36.0 fl oz/a B		80 a	100 a	84 a
ROUNDUP POWERMAX	32.0 fl oz/a B				71 a
ACTIVATOR 90 NIS	0.25 % v/v B				
N-PAK AMS	2.5 % v/v B				36.4 a
LSD P=.05	10.1	.	18.0	16.9	7.31
Standard Deviation	7.0	0.0	12.4	11.7	4.97
CV	9.05	0.0	21.84	17.5	16.66
Bartlett's X2	10.693	0.0	20.655	8.156	8.238
P(Bartlett's X2)	0.22	.	0.008*	0.418	0.51
Skewness	-2.3653*	-2.7717*	-0.9961*	-1.708*	-1.4959*
Kurtosis	4.542*	5.9791*	-0.26	2.4088*	2.2193*
Replicate F	0.725	0.000	6.530	1.105	2.350
Replicate Prob(F)	0.5460	1.0000	0.0018	0.3642	0.1015
Treatment F	62.654	0.000	18.793	17.699	14.737
Treatment Prob(F)	0.0001	1.0000	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10
 Protocol ID: 17S-TPAC-CORN-10
 Project ID: H17C38B

Location: TPAC Trial Year: 2017
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type			
Pest Code			
Pest Name			
Crop Code		ZEAMX	ZEAMX
Crop Name		Corn	Corn
Part Rated		PLOT -	PLOT -
Rating Date		Oct-21-2017	Oct-21-2017
Rating Type		MOICON	YIELD
Rating Unit		%	BU
Number of Subsamples		1	1
Assessed By		T. CAMPBELL	T. CAMPBELL
Rating Timing			
Days After First/Last Applic.		152 143	152 143
Days After Emergence		159 DE-1	159 DE-1
ARM Action Codes			TY6
Number of Decimals		1	1
Trt Treatment	Rate Appl		
No. Name	Rate Unit Code	23	24
1 UNTREATED CHECK		15.9 a	20.9 b
2 ARMEZON PRO	16.0 fl oz/a A	15.5 a	216.2 a
AATREX	16.0 fl oz/a A		
ROUNDUP POWERMAX	32.0 fl oz/a A		
SUPERB HC	0.5 % v/v A		
N-PAK AMS	2.5 % v/v A		
3 ARMEZON PRO	16.0 fl oz/a A	16.0 a	200.9 a
AATREX	16.0 fl oz/a A		
ROUNDUP POWERMAX	32.0 fl oz/a A		
ACTIVATOR 90 NIS	0.25 % v/v A		
N-PAK AMS	2.5 % v/v A		
4 ARMEZON PRO	16.0 fl oz/a A	15.2 a	184.7 a
ENGENIA	6.4 fl oz/a A		
ROUNDUP POWERMAX	32.0 fl oz/a A		
SUPERB HC	0.5 % v/v A		
CLASS ACT RIDION	1 % v/v A		
5 ARMEZON PRO	16.0 fl oz/a A	15.6 a	192.4 a
ENGENIA	6.4 fl oz/a A		
ROUNDUP POWERMAX	32.0 fl oz/a A		
ACTIVATOR 90 NIS	0.25 % v/v A		
CLASS ACT RIDION	1 % v/v A		
6 ACURON	48.0 fl oz/a A	15.3 a	206.5 a
ROUNDUP POWERMAX	32.0 fl oz/a A		
SUPERB HC	0.5 % v/v A		
N-PAK AMS	2.5 % v/v A		
7 RESICORE	40.0 fl oz/a A	15.9 a	217.1 a
AATREX	16.0 fl oz/a A		
ROUNDUP POWERMAX	32.0 fl oz/a A		
SUPERB HC	0.5 % v/v A		
N-PAK AMS	2.5 % v/v A		
8 HALEX GT	57.6 fl oz/a B	15.5 a	200.9 a
ROUNDUP POWERMAX	5.3 fl oz/a B		
ACTIVATOR 90 NIS	0.25 % v/v B		
N-PAK AMS	2.5 % v/v B		
9 ARMEZON PRO	16.0 fl oz/a B	15.5 a	189.6 a
ROUNDUP POWERMAX	32.0 fl oz/a B		
MSO	1.0 % v/v B		
N-PAK AMS	2.5 % v/v B		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns: 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10	Location: TPAC	Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-10	Investigator: Dr. Bill Johnson	
Project ID: H17C38B	Study Director: Dustin Johnson	
	Sponsor Contact: G. Welker - BASF	

Pest Type		
Pest Code		
Pest Name		
Crop Code	ZEAMX	ZEAMX
Crop Name	Corn	Corn
Part Rated	PLOT -	PLOT -
Rating Date	Oct-21-2017	Oct-21-2017
Rating Type	MOICON	YIELD
Rating Unit	%	BU
Number of Subsamples	1	1
Assessed By	T. CAMPBELL	T. CAMPBELL
Rating Timing		
Days After First/Last Applic.	152 143	152 143
Days After Emergence	159 DE-1	159 DE-1
ARM Action Codes		TY6
Number of Decimals	1	1
Trt Treatment	Rate	Appl
No. Name	Rate Unit Code	23 24
10 ACURON FLEXI	36.0 fl oz/a B	16.8 a
ROUNDUP POWERMAX	32.0 fl oz/a B	222.7 a
ACTIVATOR 90 NIS	0.25 % v/v B	
N-PAK AMS	2.5 % v/v B	
LSD P=.05	1.12	45.13
Standard Deviation	0.76	30.69
CV	4.85	16.57
Bartlett's X2	13.735	7.882
P(Bartlett's X2)	0.132	0.546
Skewness	0.203	-1.5312*
Kurtosis	0.7214	2.2587*
Replicate F	4.662	2.290
Replicate Prob(F)	0.0120	0.1078
Treatment F	1.441	14.816
Treatment Prob(F)	0.2337	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=22,23,24
 Could not calculate LSD (% mean diff) for columns 2,3,7,11,15,16,19 because error mean square = 0.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10	Location: TPAC Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-10	Investigator: Dr. Bill Johnson
Project ID: H17C38B	Study Director: Dustin Johnson
	Sponsor Contact: G. Welker - BASF

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

ECHSS, Echinochloa sp., Barnyardgrass = US

CHEAL, Chenopodium album, common lambsquarters = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

PLANT = plant

Rating Type

PHYGEN = phytotoxicity - general / injury

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

LB = pound

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)

TY6 = $6.222857 * [22] * (100 - @MVAVGREP([23])) / 84.5$

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type	W Weed	W Weed	W Weed		W Weed
Pest Code	AMBTR	ECHSS	CHEAL		AMBTR
Pest Name	Giant ragweed	Barnyardgrass	common lambsqu>		Giant ragweed
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	May-29-2017	May-29-2017	May-29-2017	May-29-2017	Jun-7-2017
Rating Type	CONTROL	CONTROL	CONTROL	PHYGEN	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER
Rating Timing	A1	A1	A1	A1	A2
Days After First/Last Applic.	7 7	7 7	7 7	7 7	16 7
Days After Emergence	14 DE-1	14 DE-1	14 DE-1	14 DE-1	23 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot	1	2	3
10 ACURON FLEXI	36.0 fl oz/a B	205			
ROUNDUP POWERMAX	32.0 fl oz/a B	304			80
ACTIVATOR 90 NIS	0.25 % v/v B	604			85
N-PAK AMS	2.5 % v/v B	803			88
Mean =			.	.	.

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type	W Weed	W Weed		W Weed	W Weed
Pest Code	ECHSS	CHEAL		AMBTR	ECHSS
Pest Name	Barnyardgrass	common lambsqu>		Giant ragweed	Barnyardgrass
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLANT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-7-2017	Jun-7-2017	Jun-7-2017	Jun-12-2017	Jun-12-2017
Rating Type	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	M. ZIMMER	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON
Rating Timing	A2	A2	A2	A3	A3
Days After First/Last Applic.	16 7	16 7	16 7	21 12	21 12
Days After Emergence	23 DE-1	23 DE-1	23 DE-1	28 DE-1	28 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot	6	7	8
1 UNTREATED CHECK		101	0	0	0
		405	0	0	0
		601	0	0	0
		804	0	0	0
		Mean =	0	0	0
2 ARMEZON PRO	16.0 fl oz/a A	102	100	100	0
AATREX	16.0 fl oz/a A	303	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	501	100	100	0
SUPERB HC	0.5 % v/v A	703	100	100	0
N-PAK AMS	2.5 % v/v A				
		Mean =	100	100	0
3 ARMEZON PRO	16.0 fl oz/a A	103	100	100	0
AATREX	16.0 fl oz/a A	301	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	603	100	100	5
ACTIVATOR 90 NIS	0.25 % v/v A	704	100	100	0
N-PAK AMS	2.5 % v/v A				
		Mean =	100	100	1
4 ARMEZON PRO	16.0 fl oz/a A	104	100	100	0
ENGENIA	6.4 fl oz/a A	401	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	505	100	100	0
SUPERB HC	0.5 % v/v A	805	100	100	0
CLASS ACT RIDION	1 % v/v A				
		Mean =	100	100	0
5 ARMEZON PRO	16.0 fl oz/a A	105	100	100	0
ENGENIA	6.4 fl oz/a A	305	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	602	100	100	5
ACTIVATOR 90 NIS	0.25 % v/v A	701	100	100	0
CLASS ACT RIDION	1 % v/v A				
		Mean =	100	100	1
6 ACURON	48.0 fl oz/a A	201	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	403	100	100	0
SUPERB HC	0.5 % v/v A	504	100	100	0
N-PAK AMS	2.5 % v/v A	702	100	100	0
		Mean =	100	100	0
7 RESICORE	40.0 fl oz/a A	202	100	100	3
AATREX	16.0 fl oz/a A	402	100	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	605	100	100	5
SUPERB HC	0.5 % v/v A	801	100	100	0
N-PAK AMS	2.5 % v/v A				
		Mean =	100	100	2
8 HALEX GT	57.6 fl oz/a B	203	60	100	0
ROUNDUP POWERMAX	5.3 fl oz/a B	302	70	100	0
ACTIVATOR 90 NIS	0.25 % v/v B	503	70	100	0
N-PAK AMS	2.5 % v/v B	802	70	100	5
		Mean =	68	100	1
9 ARMEZON PRO	16.0 fl oz/a B	204	60	100	0
ROUNDUP POWERMAX	32.0 fl oz/a B	404	90	100	0
MSO	1.0 % v/v B	502	80	100	0
N-PAK AMS	2.5 % v/v B	705	90	100	0
		Mean =	80	100	0

Purdue Weed Science

Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type	W Weed	W Weed		W Weed	W Weed
Pest Code	ECHSS	CHEAL		AMBTR	ECHSS
Pest Name	Barnyardgrass	common lambsqu>		Giant ragweed	Barnyardgrass
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLANT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-7-2017	Jun-7-2017	Jun-7-2017	Jun-12-2017	Jun-12-2017
Rating Type	CONTROL	CONTROL	PHYGEN	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	M. ZIMMER	M. ZIMMER	M. ZIMMER	D. JOHNSON	D. JOHNSON
Rating Timing	A2	A2	A2	A3	A3
Days After First/Last Applic.	16 7	16 7	16 7	21 12	21 12
Days After Emergence	23 DE-1	23 DE-1	23 DE-1	28 DE-1	28 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot	6	7	8
10 ACURON FLEXI	36.0 fl oz/a B	205	70	100	0
ROUNDUP POWERMAX	32.0 fl oz/a B	304	75	100	0
ACTIVATOR 90 NIS	0.25 % v/v B	604	90	100	5
N-PAK AMS	2.5 % v/v B	803	75	100	0
Mean =			78	100	1
					85
					90
					92
					85
					88
					95
					85
					95
					85
					90

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Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10	Location: TPAC Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-10	Investigator: Dr. Bill Johnson
Project ID: H17C38B	Study Director: Dustin Johnson
	Sponsor Contact: G. Welker - BASF

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	AMBTBTR	ECHSS	CHEAL
Pest Name	common lambsqu>	Giant ragweed	Barnyardgrass	common lambsqu>
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-12-2017	Jun-12-2017	Jun-21-2017	Jun-21-2017
Rating Type	CONTROL	PHYGEN	CONTROL	CONTROL
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A3	A3	A4	A4
Days After First/Last Applic.	21 12	21 12	30 21	30 21
Days After Emergence	28 DE-1	28 DE-1	37 DE-1	37 DE-1
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	11	12
1 UNTREATED CHECK		101	0	0
		405	0	0
		601	0	0
		804	0	0
		Mean =	0	0
2 ARMEZON PRO	16.0 fl oz/a A	102	100	0
AATREX	16.0 fl oz/a A	303	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	501	100	0
SUPERB HC	0.5 % v/v A	703	100	0
N-PAK AMS	2.5 % v/v A			
		Mean =	100	0
3 ARMEZON PRO	16.0 fl oz/a A	103	100	0
AATREX	16.0 fl oz/a A	301	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	603	100	5
ACTIVATOR 90 NIS	0.25 % v/v A	704	100	0
N-PAK AMS	2.5 % v/v A			
		Mean =	100	1
4 ARMEZON PRO	16.0 fl oz/a A	104	100	0
ENGENIA	6.4 fl oz/a A	401	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	505	100	0
SUPERB HC	0.5 % v/v A	805	100	0
CLASS ACT RIDION	1 % v/v A			
		Mean =	100	0
5 ARMEZON PRO	16.0 fl oz/a A	105	100	0
ENGENIA	6.4 fl oz/a A	305	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	602	100	5
ACTIVATOR 90 NIS	0.25 % v/v A	701	100	0
CLASS ACT RIDION	1 % v/v A			
		Mean =	100	1
6 ACURON	48.0 fl oz/a A	201	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	403	100	0
SUPERB HC	0.5 % v/v A	504	100	0
N-PAK AMS	2.5 % v/v A	702	100	0
		Mean =	100	0
7 RESICORE	40.0 fl oz/a A	202	100	3
AATREX	16.0 fl oz/a A	402	100	0
ROUNDUP POWERMAX	32.0 fl oz/a A	605	100	5
SUPERB HC	0.5 % v/v A	801	100	0
N-PAK AMS	2.5 % v/v A			
		Mean =	100	2
8 HALEX GT	57.6 fl oz/a B	203	100	0
ROUNDUP POWERMAX	5.3 fl oz/a B	302	100	0
ACTIVATOR 90 NIS	0.25 % v/v B	503	100	0
N-PAK AMS	2.5 % v/v B	802	100	0
		Mean =	100	0
9 ARMEZON PRO	16.0 fl oz/a B	204	100	0
ROUNDUP POWERMAX	32.0 fl oz/a B	404	100	3
MSO	1.0 % v/v B	502	100	0
N-PAK AMS	2.5 % v/v B	705	100	0
		Mean =	100	1

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 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

W Weed	W Weed	W Weed	W Weed	W Weed			
CHEAL	AMBTR	ECHSS	CHEAL				
common lambsqu>	Giant ragweed	Barnyardgrass	common lambsqu>				
ZEAMX	ZEAMX	ZEAMX	ZEAMX				
Corn	Corn	Corn	Corn				
PLOT -	PLOT -	PLOT -	PLOT -				
Jun-12-2017	Jun-12-2017	Jun-21-2017	Jun-21-2017	Jun-21-2017			
CONTROL	PHYGEN	CONTROL	CONTROL	CONTROL			
%	%	%	%	%			
1	1	1	1	1			
D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON			
A3	A3	A4	A4	A4			
21 12	21 12	30 21	30 21	30 21			
28 DE-1	28 DE-1	37 DE-1	37 DE-1	37 DE-1			
P	P	P	P	P			
0	0	0	0	0			
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot	11	12	13	14	15
10 ACURON FLEXI	36.0 fl oz/a B	205	100	0	98	97	100
ROUNDUP POWERMAX	32.0 fl oz/a B	304	100	0	98	85	100
ACTIVATOR 90 NIS	0.25 % v/v B	604	100	5	99	98	100
N-PAK AMS	2.5 % v/v B	803	100	0	93	90	100
Mean =			100	1	97	93	100

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 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type		W Weed	W Weed	W Weed	W Weed
Pest Code		AMBTR	ECHSS	CHEAL	AMBTR
Pest Name		Giant ragweed	Barnyardgrass	common lambsqu>	Giant ragweed
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-21-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017	Jul-12-2017
Rating Type	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A4	A5	A5	A5	A6
Days After First/Last Applic.	30 21	42 33	42 33	42 33	51 42
Days After Emergence	37 DE-1	49 DE-1	49 DE-1	49 DE-1	58 DE-1
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code Plot	16	17	18	19
10 ACURON FLEXI	36.0 fl oz/a B 205	0	90	90	100
ROUNDUP POWERMAX	32.0 fl oz/a B 304	0	90	70	100
ACTIVATOR 90 NIS	0.25 % v/v B 604	0	90	90	100
N-PAK AMS	2.5 % v/v B 803	0	90	70	100
	Mean =	0	90	80	100

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Armerzon Pro Adjuvant Efficacy & Timing

Trial ID: 17S-TPAC-CORN-10 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-10 Investigator: Dr. Bill Johnson
 Project ID: H17C38B Study Director: Dustin Johnson
 Sponsor Contact: G. Welker - BASF

Pest Type	W Weed					
Pest Code	ECHSS					
Pest Name	Barnyardgrass					
Crop Code	ZEAMX					
Crop Name	Corn					
Part Rated	PLOT -					
Rating Date	Jul-12-2017	Oct-21-2017	Oct-21-2017	Oct-21-2017		
Rating Type	CONTROL	YIELD	MOICON	YIELD		
Rating Unit	%	LB	%	BU		
Number of Subsamples	1	1	1	1		
Assessed By	D. JOHNSON	T. CAMPBELL	T. CAMPBELL	T. CAMPBELL		
Rating Timing	A6					
Days After First/Last Applic.	51 42	152 143	152 143	152 143		
Days After Emergence	58 DE-1	159 DE-1	159 DE-1	159 DE-1		
ARM Action Codes	P			TY6		
Number of Decimals	0	1	1	1		
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	21	22	23	24
1 UNTREATED CHECK		101	0	1.6	15.7	9.7
		405	0	2.5	15.7	15.5
		601	0	1.5	15.7	9.1
		804	0	8.0	16.6	49.4
		Mean =	0	3.4	15.9	20.9
2 ARMEZON PRO	16.0 fl oz/a A	102	85	32.3	14.5	203.7
AATREX	16.0 fl oz/a A	303	80	38.4	16.4	236.1
ROUNDUP POWERMAX	32.0 fl oz/a A	501	85	34.8*	15.5*	216.2*
SUPERB HC	0.5 % v/v A	703	90	33.6	15.6	208.9
N-PAK AMS	2.5 % v/v A					
		Mean =	85	34.8	15.5	216.2
3 ARMEZON PRO	16.0 fl oz/a A	103	80	32.5*	16.0*	200.9*
AATREX	16.0 fl oz/a A	301	85	35.9	16.1	221.7
ROUNDUP POWERMAX	32.0 fl oz/a A	603	75	32.5*	16.0*	200.9*
ACTIVATOR 90 NIS	0.25 % v/v A	704	90	29.1	15.9	180.1
N-PAK AMS	2.5 % v/v A					
		Mean =	83	32.5	16.0	200.9
4 ARMEZON PRO	16.0 fl oz/a A	104	70	36.8	14.0	232.8
ENGENIA	6.4 fl oz/a A	401	70	28.0	16.4	172.4
ROUNDUP POWERMAX	32.0 fl oz/a A	505	70	22.0	14.4	138.5
SUPERB HC	0.5 % v/v A	805	90	31.6	16.0	195.2
CLASS ACT RIDION	1 % v/v A					
		Mean =	75	29.6	15.2	184.7
5 ARMEZON PRO	16.0 fl oz/a A	105	60	33.0	13.8	209.4
ENGENIA	6.4 fl oz/a A	305	70	32.0	16.2	197.3
ROUNDUP POWERMAX	32.0 fl oz/a A	602	70	25.5	16.9	156.1
ACTIVATOR 90 NIS	0.25 % v/v A	701	95	33.3	15.6	206.9
CLASS ACT RIDION	1 % v/v A					
		Mean =	74	30.9	15.6	192.4
6 ACURON	48.0 fl oz/a A	201	85	32.3	15.6	200.9
ROUNDUP POWERMAX	32.0 fl oz/a A	403	70	27.0	15.1	168.6
SUPERB HC	0.5 % v/v A	504	75	27.1	15.2	169.3
N-PAK AMS	2.5 % v/v A	702	95	46.1	15.4	287.3
		Mean =	81	33.1	15.3	206.5
7 RESICORE	40.0 fl oz/a A	202	80	38.5	15.2	240.2
AATREX	16.0 fl oz/a A	402	60	31.5	16.3	194.0
ROUNDUP POWERMAX	32.0 fl oz/a A	605	50	35.0*	15.9*	217.1*
SUPERB HC	0.5 % v/v A	801	75	35.2	16.3	217.0
N-PAK AMS	2.5 % v/v A					
		Mean =	66	35.0	15.9	217.1
8 HALEX GT	57.6 fl oz/a B	203	40	30.5	14.8	191.6
ROUNDUP POWERMAX	5.3 fl oz/a B	302	70	35.4	15.3	220.8
ACTIVATOR 90 NIS	0.25 % v/v B	503	75	29.6	15.5	183.9
N-PAK AMS	2.5 % v/v B	802	60	33.6	16.3	207.1
		Mean =	61	32.3	15.5	200.9
9 ARMEZON PRO	16.0 fl oz/a B	204	60	29.7	15.3	185.3
ROUNDUP POWERMAX	32.0 fl oz/a B	404	75	30.5*	15.5*	189.6*
MSO	1.0 % v/v B	502	70	27.4	16.1	169.2
N-PAK AMS	2.5 % v/v B	705	80	34.3	15.2	214.2
		Mean =	71	30.5	15.5	189.6

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Project ID: H17C38B	Study Director: Dustin Johnson
	Sponsor Contact: G. Welker - BASF

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

ECHSS, Echinochloa sp., Barnyardgrass = US

CHEAL, Chenopodium album, common lambsquarters = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

PLANT = plant

Rating Type

PHYGEN = phytotoxicity - general / injury

YIELD = yield

MOICON = moisture content

Rating Unit

% = percent

LB = pound

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)

TY6 = $6.222857 * [22] * (100 - @MVAVGREP([23])) / 84.5$