

Purdue Weed Science

Two-Pass Herbicide Programs in Corn

Trial ID: 21S-TPAC-CORN-09 Location: TPAC Trial Year: 2021
 Protocol ID: 21S-TPAC-CORN-09 Investigator (Creator): Dr. Bill Johnson
 Project ID: FMC, Syngenta, Valent Study Director: Brent Mansfield
 Sponsor Contact: FMC, Syngenta, Valent

General Trial Information

Study Director: Brent Mansfield **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor
Discipline: H herbicide
Trial Status: E established **Trial Reliability:** 1 usable data
ARM Trial Created On: 5/15/2021
Initiation Date: 5/15/2021

Trial Location

City: Lafayette **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47907

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Brent Mansfield **Title:** Research Associate
Organization: Purdue University
Address 1: 915 W. State Street
Country: USA United States **E-mail:** brentmansfield@purdue.edu
City: West Lafayette **State/Prov:** IN **Postal Code:** 47907
Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address 1: 915 W. State Street
Country: USA United States **E-mail:** wj@purdue.edu
City: West Lafayette **State/Prov:** IN **Postal Code:** 47907
Sponsor: FMC, Syngenta, Valent
Cooperator: Jay Young **Title:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S **Phone No.:** 765-538-3422
Country: USA United States **E-mail:** jayyoung@purdue.edu
City: Lafayette **State/Prov:** IN **Postal Code:** 47909

Crop Description

Crop 1: C ZEAMX Zea mays corn **Stage Scale:** BBCH
Variety: DKC 62-52 RIB
Attributes: GLY-R, GLU-R
Planting Date: 5/15/2021 **Planting Rate:** 34000 S/A
Depth: 1.75 IN
Rows per Plot: 4 **Planting Method:** PLANTD planted
Row Spacing: 30 IN **Planting Equipment:** PP plot planter
Soil Temperature: 69 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: 5/23/2021
Harvest Date: 10/19/2021
Harvested Width: 10 FT
Harvested Length: 27 FT
% Standard Moisture: 15.5

Pest Description

Pest 1 Type: W **Code:** AMBTR Ambrosia trifida **Entry Date:** 12/8/2021
Common Name: Giant ragweed **Stage Scale:** BBCH
Pest 2 Type: W **Code:** ECHCG Echinochloa crus-galli **Entry Date:** 12/8/2021
Common Name: common barnyardgrass **Stage Scale:** BBCH

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: 300.0 FT2 **Treatments:** 8 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** RACOB� Randomized Complete Block (RCB)

Maintenance

No.	Date	Type	Maintenance Product Name	Description	Rate	Rate Unit
1.	5/12/2021	FERT	UAN	180 LBS N	180	LB A/A

Soil Description**Description Name:** TPAC - Field 4BE

% Sand: 21 **% OM:** 3.4 **Texture:** SIL silt loam
% Silt: 54 **pH:** 5.8 **Soil Name:** Toronto-Millbrook complex
% Clay: 25 **CEC:** 13.5 **Fert. Level:** G good

Weather Conditions**Closest Weather Station:** TPAC **Distance:** 0.5 MI

No.	Date	Moisture Total	Unit	Min Temp	Max Temp	Temp Unit
1.	5/1/2021	0	IN	40	63	F
2.	5/2/2021	0	IN	49	74	F
3.	5/3/2021	0.26	IN	56	78	F
4.	5/4/2021	0.01	IN	55	66	F
5.	5/5/2021	0.04	IN	43	59	F
6.	5/6/2021	0	IN	42	61	F
7.	5/7/2021	0.25	IN	38	58	F
8.	5/8/2021	0	IN	32	63	F
9.	5/9/2021	1.43	IN	40	57	F
10.	5/10/2021	0.37	IN	37	47	F
11.	5/11/2021	0.09	IN	39	59	F
12.	5/12/2021	0	IN	36	61	F
13.	5/13/2021	0	IN	38	60	F
14.	5/14/2021	0	IN	41	66	F
15.	5/15/2021	0	IN	46	70	F
16.	5/16/2021	0	IN	53	71	F
17.	5/17/2021	0.35	IN	55	71	F
18.	5/18/2021	0.12	IN	58	63	F
19.	5/19/2021	0	IN	59	72	F
20.	5/20/2021	0	IN	64	75	F
21.	5/21/2021	0	IN	64	84	F
22.	5/22/2021	0	IN	63	83	F
23.	5/23/2021	0	IN	63	85	F
24.	5/24/2021	0	IN	68	85	F
25.	5/25/2021	0	IN	67	88	F
26.	5/26/2021	0.32	IN	66	87	F
27.	5/27/2021	0.19	IN	58	81	F
28.	5/28/2021	0.08	IN	60	80	F
29.	5/29/2021	0.47	IN	43	61	F
30.	5/30/2021	0	IN	41	63	F
31.	5/31/2021	0	IN	43	71	F
32.	6/1/2021	0	IN	57	71	F
33.	6/2/2021	0.04	IN	58	74	F
34.	6/3/2021	0.03	IN	59	87	F
35.	6/4/2021	0	IN	61	82	F
36.	6/5/2021	0	IN	63	88	F
37.	6/6/2021	0	IN	66	86	F
38.	6/7/2021	0.01	IN	69	83	F
39.	6/8/2021	0.1	IN	69	83	F
40.	6/9/2021	0	IN	70	85	F
41.	6/10/2021	0	IN	67	85	F
42.	6/11/2021	0	IN	69	85	F
43.	6/12/2021	0	IN	67	90	F
44.	6/13/2021	0	IN	69	93	F
45.	6/14/2021	0	IN	63	86	F
46.	6/15/2021	0	IN	57	83	F
47.	6/16/2021	0	IN	53	81	F
48.	6/17/2021	0	IN	53	82	F
49.	6/18/2021	0.01	IN	61	86	F
50.	6/19/2021	0.47	IN	67	93	F

51.	6/20/2021	0	IN	67	81	F
52.	6/21/2021	0.1	IN	70	86	F
53.	6/22/2021	0	IN	49	72	F
54.	6/23/2021	0	IN	54	74	F
55.	6/24/2021	0	IN	60	77	F
56.	6/25/2021	1.19	IN	63	79	F
57.	6/26/2021	0.83	IN	70	81	F
58.	6/27/2021	1.05	IN	69	85	F
59.	6/28/2021	0.11	IN	69	86	F
60.	6/29/2021	0	IN	72	88	F
61.	6/30/2021	0	IN	72	89	F
62.	7/1/2021	0.35	IN	70	78	F
63.	7/2/2021	0	IN	55	82	F
64.	7/3/2021	0	IN	53	75	F
65.	7/4/2021	0	IN	57	78	F
66.	7/5/2021	0	IN	67	85	F
67.	7/6/2021	0	IN	68	86	F
68.	7/7/2021	0	IN	71	86	F
69.	7/8/2021	1.29	IN	67	86	F
70.	7/9/2021	0.05	IN	59	80	F
71.	7/10/2021	0.03	IN	61	73	F
72.	7/11/2021	0.1	IN	65	76	F
73.	7/12/2021	1.3	IN	66	76	F
74.	7/13/2021	0.4	IN	67	82	F
75.	7/14/2021	0.08	IN	65	79	F
76.	7/15/2021	0	IN	66	82	F
77.	7/16/2021	0.16	IN	69	86	F
78.	7/17/2021	0.1	IN	66	78	F
79.	7/18/2021	0.01	IN	66	80	F
80.	7/19/2021	0	IN	61	83	F
81.	7/20/2021	0	IN	61	82	F
82.	7/21/2021	0	IN	64	83	F
83.	7/22/2021	0	IN	64	79	F
84.	7/23/2021	0	IN	67	83	F
85.	7/24/2021	0	IN	71	86	F
86.	7/25/2021	0	IN	69	87	F
87.	7/26/2021	0	IN	65	88	F
88.	7/27/2021	0	IN	62	87	F
89.	7/28/2021	0	IN	66	86	F
90.	7/29/2021	0	IN	70	87	F
91.	7/30/2021	0	IN	65	88	F
92.	7/31/2021	0	IN	62	78	F
93.	8/1/2021	0	IN	57	73	F
94.	8/2/2021	0	IN	52	80	F
95.	8/3/2021	0	IN	54	77	F
96.	8/4/2021	0	IN	55	80	F
97.	8/5/2021	0	IN	54	81	F
98.	8/6/2021	0	IN	61	83	F
99.	8/7/2021	0	IN	67	82	F
100.	8/8/2021	0	IN	67	85	F
101.	8/9/2021	0	IN	69	86	F
102.	8/10/2021	0	IN	71	80	F
103.	8/11/2021	0	IN	74	90	F
104.	8/12/2021	0.1	IN	75	88	F
105.	8/13/2021	0.24	IN	67	78	F
106.	8/14/2021	0	IN	60	86	F
107.	8/15/2021	0	IN	53	81	F

Application Description		
	A	B
Application Date	5/15/2021	6/11/2021
Appl. Start Time	11:00 AM	4:00 PM
Appl. Stop Time	11:18 AM	4:20 PM
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROFOL
Applied By	J. HAARMANN	J. HAARMANN
Air Temperature Start, Stop	70, 70 F	92, 92 F
% Relative Humidity Start, Stop	40, 40	48, 48
Wind Velocity+Dir. Start	8 MPH, S	6 MPH, N
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	65 F	105 F
Soil Moisture	NORMAL	DRY
% Cloud Cover	50	50

Crop Stage At Each Application		
	A	B
Crop 1 Code, BBCH Scale	ZEAMX, BCOR	ZEAMX, BCOR
Days after Emergence	-8	19
Stage Majority, Percent	00, -	14, -
Stage Minimum, Percent	00, -	14, -
Stage Maximum, Percent	00, -	15, -
Height Average	0 IN	12 IN

Pest Stage At Each Application		
	A	B
Pest 1 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH
Stage Majority, Percent	00, -	19, -
Stage Minimum, Percent	00, -	14, -
Stage Maximum, Percent	00, -	19, -
Height Average	0 IN	12 IN
Density Average		8 FT2
Pest 2 Code, Type, Scale	ECHCG, W, BBCH	ECHCG, W, BBCH
Stage Majority, Percent	00, -	13, -
Stage Minimum, Percent	00, -	13, -
Stage Maximum, Percent	00, -	15, -
Height Average	0 IN	4 IN
Density Average		2 FT2

Application Equipment		
	A	B
Appl. Equipment	CO2 BACKPACK	CO2 BACKPACK
Equipment Type	BACSPR	BACSPR
Operation Pressure	17 PSI	30 PSI
Nozzle Model	XR	AIXR
Nozzle Type	FLAFXR	FLAFAI
Nozzle TradeName	TEEJET	TEEJET
Nozzle Tip Size, Color	11002, YELLOW	110015, GREEN
Nozzle Spacing	15 IN	15 IN
Nozzles/Row	8	8
Boom Length	10 FT	10 FT
Boom Height	17 IN	29.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	1.8 L	1.8 L
Propellant	COMCO2	COMCO2

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Trial ID: 21S-TPAC-CORN-09	Location: TPAC	Trial Year: 2021
Protocol ID: 21S-TPAC-CORN-09	Investigator (Creator): Dr. Bill Johnson	
Project ID: FMC, Syngenta, Valent	Study Director: Brent Mansfield	
	Sponsor Contact: FMC, Syngenta, Valent	

Pest Type				W, Weed AMBTR	W, Weed ECHCG	W, Weed AMBTR		
Pest Code				Giant ragweed	common barnyard>	Giant ragweed		
Pest Name								
Crop Type, Code	C, ZEAMX	C, ZEAMX	C, ZEAMX					
BBCH Scale	BCOR	BCOR	BCOR					
Crop Scientific Name	Zea mays	Zea mays	Zea mays					
Crop Name	Corn	Corn	Corn					
Rating Date	5/29/2021	6/11/2021	6/25/2021	5/29/2021	5/29/2021	6/11/2021		
Part Rated	PLANT, C	PLANT, C	PLANT, C	PLANT, P	PLANT, P	PLANT, P		
Rating Type	PHYGEN	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100	% , 0, 100		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	12/8/2021	12/8/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021		
Rating Timing	14 DA-A	0 DAB	14 DAB	14 DA-A	14 DA-A	0 DAB		
Days After First/Last Applic.	14, 14	27, 27	41, 14	14, 14	14, 14	27, 27		
Trt-Eval Interval	14 DA-A	27 DA-A	41 DA-A					
Plant-Eval Interval	14 DP-1	27 DP-1	41 DP-1	14 DP-1	14 DP-1	27 DP-1		
Days After Emergence	6 DE-1	19 DE-1	33 DE-1	6 DE-1	6 DE-1	19 DE-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	Appl	1	2	3	4	5	6
No. Name	Rate Unit	Code						
1 NONTREATED			0.0	0.0	0.0	0.0	0.0	0.0
2 ANTHEM MAXX	4 FL OZ/A	A	0.0 -	0.0 -	0.0 -	93.0 ab	100.0 -	93.5 a
CALLISTO	6 FL OZ/A	A						
AATREX	2 QT/A	A						
ROUNDUP POWERMAX	32 FL OZ/A	B						
STATUS	3 OZ/A	B						
AMSOL	2.5 % V/V	B						
3 ACURON	1.5 QT/A	A	0.0 -	0.0 -	0.0 -	89.3 b	100.0 -	86.3 b
ACURON	1.5 QT/A	B						
ROUNDUP POWERMAX	28 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
4 HARNESS MAX	37.5 FL OZ/A	A	0.0 -	0.0 -	0.0 -	89.3 b	100.0 -	78.8 c
HARNESS MAX	37.5 FL OZ/A	B						
ROUNDUP POWERMAX	26.5 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
5 ACURON	1.5 QT/A	A	0.0 -	0.0 -	0.0 -	93.5 ab	100.0 -	94.8 a
ACURON	1.5 QT/A	B						
ROUNDUP POWERMAX	28 FL OZ/A	B						
AATREX	1 PT/A	B						
CLARITY	8 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
6 HARNESS MAX	37.5 FL OZ/A	A	0.0 -	0.0 -	1.0 -	88.8 b	100.0 -	81.3 bc
HARNESS MAX	37.5 FL OZ/A	B						
ROUNDUP POWERMAX	26.5 FL OZ/A	B						
AATREX	1 PT/A	B						
CLARITY	8 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
7 MAVERICK	1 QT/A	A	0.0 -	0.0 -	0.0 -	97.3 a	100.0 -	97.8 a
ROUNDUP POWERMAX	32 FL OZ/A	B						
AMSOL	5.9 % V/V	B						

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 1,2,5,7,9,11,12,13,14,15 because error mean square = 0.
 ^Calculated from residual.

Pest Type				W, Weed AMBTR	W, Weed ECHCG	W, Weed AMBTR		
Pest Code				Giant ragweed	common barnyard>	Giant ragweed		
Pest Name								
Crop Type, Code	C, ZEAMX	C, ZEAMX	C, ZEAMX					
BBCH Scale	BCOR	BCOR	BCOR					
Crop Scientific Name	Zea mays	Zea mays	Zea mays					
Crop Name	Corn	Corn	Corn					
Rating Date	5/29/2021	6/11/2021	6/25/2021	5/29/2021	5/29/2021	6/11/2021		
Part Rated	PLANT, C	PLANT, C	PLANT, C	PLANT, P	PLANT, P	PLANT, P		
Rating Type	PHYGEN	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	12/8/2021	12/8/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021		
Rating Timing	14 DA-A	0 DAB	14 DAB	14 DA-A	14 DA-A	0 DAB		
Days After First/Last Applic.	14, 14	27, 27	41, 14	14, 14	14, 14	27, 27		
Trt-Eval Interval	14 DA-A	27 DA-A	41 DA-A					
Plant-Eval Interval	14 DP-1	27 DP-1	41 DP-1	14 DP-1	14 DP-1	27 DP-1		
Days After Emergence	6 DE-1	19 DE-1	33 DE-1	6 DE-1	6 DE-1	19 DE-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	Appl	1	2	3	4	5	6
No. Name	Rate Unit	Code						
8 MAVERICK	1 QT/A	A	0.0 -	0.0 -	0.0 -	97.8 a	100.0 -	98.0 a
AATREX	1.5 PT/A	A						
ROUNDUP POWERMAX	32 FL OZ/A	B						
AMSOL	5.9 % V/V	B						
LSD P=.05					0.79	5.67		6.57
Standard Deviation			0.00	0.00	0.53	3.82	0.00	4.42
CV			0.0	0.0	374.17	4.12	0.0	4.91
Grand Mean			0.00	0.00	0.14	92.68	100.00	90.04
Levene's F^					2.381	0.245		0.529
Levene's Prob(F)					0.065	0.956		0.78
Rank X2								
P(Rank X2)								
Skewness^					1.7625*	0.0377		0.1014
Kurtosis^					9.0831*	-0.9446		-0.8654
Replicate F			0.000	0.000	1.000	3.805	0.000	1.176
Replicate Prob(F)			1.0000	1.0000	0.4155	0.0284	1.0000	0.3465
Treatment F			0.000	0.000	2.000	3.949	0.000	12.828
Treatment Prob(F)			1.0000	1.0000	0.1189	0.0108	1.0000	0.0001

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Untreated treatment(s) 1 excluded from analysis.
Could not calculate LSD (% mean diff) for columns 1,2,5,7,9,11,12,13,14,15 because error mean square = 0.
^Calculated from residual.

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	ECHCG	AMBTR	ECHCG	AMBTR	ECHCG		
Pest Name	common barnyard>	Giant ragweed	common barnyard>	Giant ragweed	common barnyard>		
Crop Type, Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Rating Date	6/11/2021	6/25/2021	6/25/2021	7/9/2021	7/9/2021		
Part Rated	PLANT, P	PLANT, P	PLANT, P	PLANT, P	PLANT, P		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100		
Number of Subsamples	1	1	1	1	1		
Data Entry Date	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021		
Rating Timing	0 DAB	14 DAB	14 DAB	28 DAB	28 DAB		
Days After First/Last Applic.	27, 27	41, 14	41, 14	55, 28	55, 28		
Trt-Eval Interval							
Plant-Eval Interval	27 DP-1	41 DP-1	41 DP-1	55 DP-1	55 DP-1		
Days After Emergence	19 DE-1	33 DE-1	33 DE-1	47 DE-1	47 DE-1		
ARM Action Codes							
Number of Decimals							
Trt Treatment	Rate	Appl	7	8	9	10	11
No. Name	Rate Unit	Code					
1 NONTREATED			0.0	0.0	0.0	0.0	0.0
2 ANTHEM MAXX	4 FL OZ/A	A	100.0 -	95.0 -	100.0 -	100.0 -	100.0 -
CALLISTO	6 FL OZ/A	A					
AATREX	2 QT/A	A					
ROUNDUP POWERMAX	32 FL OZ/A	B					
STATUS	3 OZ/A	B					
AMSOL	2.5 % V/V	B					
3 ACURON	1.5 QT/A	A	100.0 -	95.5 -	100.0 -	99.3 -	100.0 -
ACURON	1.5 QT/A	B					
ROUNDUP POWERMAX	28 FL OZ/A	B					
AMSOL	2.5 % V/V	B					
4 HARNESS MAX	37.5 FL OZ/A	A	100.0 -	94.3 -	100.0 -	98.5 -	100.0 -
HARNESS MAX	37.5 FL OZ/A	B					
ROUNDUP POWERMAX	26.5 FL OZ/A	B					
AMSOL	2.5 % V/V	B					
5 ACURON	1.5 QT/A	A	100.0 -	95.5 -	100.0 -	100.0 -	100.0 -
ACURON	1.5 QT/A	B					
ROUNDUP POWERMAX	28 FL OZ/A	B					
AATREX	1 PT/A	B					
CLARITY	8 FL OZ/A	B					
AMSOL	2.5 % V/V	B					
6 HARNESS MAX	37.5 FL OZ/A	A	100.0 -	96.0 -	100.0 -	100.0 -	100.0 -
HARNESS MAX	37.5 FL OZ/A	B					
ROUNDUP POWERMAX	26.5 FL OZ/A	B					
AATREX	1 PT/A	B					
CLARITY	8 FL OZ/A	B					
AMSOL	2.5 % V/V	B					
7 MAVERICK	1 QT/A	A	100.0 -	93.8 -	100.0 -	98.5 -	100.0 -
ROUNDUP POWERMAX	32 FL OZ/A	B					
AMSOL	5.9 % V/V	B					

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 1,2,5,7,9,11,12,13,14,15 because error mean square = 0.
^Calculated from residual.

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	ECHCG	AMBTR	ECHCG	AMBTR	ECHCG
Pest Name	common barnyard>	Giant ragweed	common barnyard>	Giant ragweed	common barnyard>
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	6/11/2021	6/25/2021	6/25/2021	7/9/2021	7/9/2021
Part Rated	PLANT, P	PLANT, P	PLANT, P	PLANT, P	PLANT, P
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Number of Subsamples	1	1	1	1	1
Data Entry Date	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021
Rating Timing	0 DAB	14 DAB	14 DAB	28 DAB	28 DAB
Days After First/Last Applic.	27, 27	41, 14	41, 14	55, 28	55, 28
Trt-Eval Interval					
Plant-Eval Interval	27 DP-1	41 DP-1	41 DP-1	55 DP-1	55 DP-1
Days After Emergence	19 DE-1	33 DE-1	33 DE-1	47 DE-1	47 DE-1
ARM Action Codes					
Number of Decimals					
Trt Treatment					
No. Name					
Rate					
Rate Unit					
Appl Code					
	7	8	9	10	11
8 MAVERICK	100.0 -	96.0 -	100.0 -	100.0 -	100.0 -
AATREX					
ROUNDUP POWERMAX					
AMSOL					
LSD P=.05	.	2.63	.	1.71	.
Standard Deviation	0.00	1.77	0.00	1.15	0.00
CV	0.0	1.86	0.0	1.16	0.0
Grand Mean	100.00	95.14	100.00	99.46	100.00
Levene's F^	.	0.625	.	4.539	.
Levene's Prob(F)	.	0.708	.	0.004*	.
Rank X2	.	.	.	.	.
P(Rank X2)	.	.	.	.	.
Skewness^	.	-1.1288*	.	-0.5781	.
Kurtosis^	.	2.2237*	.	0.5004	.
Replicate F	0.000	0.335	0.000	0.243	0.000
Replicate Prob(F)	1.0000	0.8005	1.0000	0.8650	1.0000
Treatment F	0.000	0.954	0.000	1.541	0.000
Treatment Prob(F)	1.0000	0.4823	1.0000	0.2216	1.0000

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 1,2,5,7,9,11,12,13,14,15 because error mean square = 0.
^Calculated from residual.

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed				
Pest Code	AMBTR	ECHCG	AMBTR	ECHCG				
Pest Name	Giant ragweed	common barnyard>	Giant ragweed	common barnyard>				
Crop Type, Code					C, ZEAMX	C, ZEAMX		
BBCH Scale					BCOR	BCOR		
Crop Scientific Name					Zea mays	Zea mays		
Crop Name					Corn	Corn		
Rating Date	7/23/2021	7/23/2021	8/6/2021	8/6/2021	10/19/2021	10/19/2021		
Part Rated	PLANT, P	PLANT, P	PLANT, P	PLANT, P	PLANT, C	PLANT, C		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	WEIGHT	MOICON		
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	LB, -, -	%, 0, 100		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021		
Rating Timing	42 DAB	42 DAB	56 DAB	56 DAB	HARVEST	HARVEST		
Days After First/Last Applic.	69, 42	69, 42	83, 56	83, 56	157, 130	157, 130		
Trt-Eval Interval								
Plant-Eval Interval	69 DP-1	69 DP-1	83 DP-1	83 DP-1	157 DP-1	157 DP-1		
Days After Emergence	61 DE-1	61 DE-1	75 DE-1	75 DE-1	149 DE-1	149 DE-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	Appl	12	13	14	15	16	17
No. Name	Rate Unit	Code						
1 NONTREATED			0.0	0.0	0.0	0.0	27.020	16.30
2 ANTHEM MAXX	4 FL OZ/A	A	100.0 -	100.0 -	100.0 -	100.0 -	66.708 a	16.20 -
CALLISTO	6 FL OZ/A	A						
AATREX	2 QT/A	A						
ROUNDUP POWERMAX	32 FL OZ/A	B						
STATUS	3 OZ/A	B						
AMSOL	2.5 % V/V	B						
3 ACURON	1.5 QT/A	A	100.0 -	100.0 -	100.0 -	100.0 -	65.225 ab	16.38 -
ACURON	1.5 QT/A	B						
ROUNDUP POWERMAX	28 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
4 HARNESS MAX	37.5 FL OZ/A	A	100.0 -	100.0 -	100.0 -	100.0 -	67.718 a	16.75 -
HARNESS MAX	37.5 FL OZ/A	B						
ROUNDUP POWERMAX	26.5 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
5 ACURON	1.5 QT/A	A	100.0 -	100.0 -	100.0 -	100.0 -	58.898 b	16.28 -
ACURON	1.5 QT/A	B						
ROUNDUP POWERMAX	28 FL OZ/A	B						
AATREX	1 PT/A	B						
CLARITY	8 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
6 HARNESS MAX	37.5 FL OZ/A	A	100.0 -	100.0 -	100.0 -	100.0 -	66.538 a	16.40 -
HARNESS MAX	37.5 FL OZ/A	B						
ROUNDUP POWERMAX	26.5 FL OZ/A	B						
AATREX	1 PT/A	B						
CLARITY	8 FL OZ/A	B						
AMSOL	2.5 % V/V	B						
7 MAVERICK	1 QT/A	A	100.0 -	100.0 -	100.0 -	100.0 -	70.120 a	16.80 -
ROUNDUP POWERMAX	32 FL OZ/A	B						
AMSOL	5.9 % V/V	B						

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^Calculated from residual.

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed				
Pest Code	AMBTR	ECHCG	AMBTR	ECHCG				
Pest Name	Giant ragweed	common barnyard>	Giant ragweed	common barnyard>				
Crop Type, Code					C, ZEAMX	C, ZEAMX		
BBCH Scale					BCOR	BCOR		
Crop Scientific Name					Zea mays	Zea mays		
Crop Name					Corn	Corn		
Rating Date	7/23/2021	7/23/2021	8/6/2021	8/6/2021	10/19/2021	10/19/2021		
Part Rated	PLANT, P	PLANT, P	PLANT, P	PLANT, P	PLANT, C	PLANT, C		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	WEIGHT	MOICON		
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	LB, -, -	%, 0, 100		
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021		
Rating Timing	42 DAB	42 DAB	56 DAB	56 DAB	HARVEST	HARVEST		
Days After First/Last Applic.	69, 42	69, 42	83, 56	83, 56	157, 130	157, 130		
Trt-Eval Interval								
Plant-Eval Interval	69 DP-1	69 DP-1	83 DP-1	83 DP-1	157 DP-1	157 DP-1		
Days After Emergence	61 DE-1	61 DE-1	75 DE-1	75 DE-1	149 DE-1	149 DE-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	Appl	12	13	14	15	16	17
No. Name	Rate Unit	Code						
8 MAVERICK	1 QT/A	A	100.0 -	100.0 -	100.0 -	100.0 -	71.455 a	16.03 -
AATREX	1.5 PT/A	A						
ROUNDUP POWERMAX	32 FL OZ/A	B						
AMSOL	5.9 % V/V	B						
LSD P=.05							7.0104	0.876
Standard Deviation			0.00	0.00	0.00	0.00	4.7190	0.589
CV			0.0	0.0	0.0	0.0	7.08	3.59
Grand Mean			100.00	100.00	100.00	100.00	66.6657	16.404
Levene's F^			.	.	.	.	0.688	0.194
Levene's Prob(F)			.	.	.	.	0.662	0.975
Rank X2			.	.	.	.	.	.
P(Rank X2)			.	.	.	.	.	.
Skewness^			.	.	.	.	-0.0442	-0.0372
Kurtosis^			.	.	.	.	-0.4238	-0.7983
Replicate F			0.000	0.000	0.000	0.000	4.931	5.102
Replicate Prob(F)			1.0000	1.0000	1.0000	1.0000	0.0113	0.0099
Treatment F			0.000	0.000	0.000	0.000	2.946	0.920
Treatment Prob(F)			1.0000	1.0000	1.0000	1.0000	0.0350	0.5038

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Untreated treatment(s) 1 excluded from analysis.
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^Calculated from residual.

Pest Type			
Pest Code			
Pest Name			
Crop Type, Code		C, ZEAMX	
BBCH Scale		BCOR	
Crop Scientific Name		Zea mays	
Crop Name		Corn	
Rating Date		10/19/2021	
Part Rated		PLANT, C	
Rating Type		YIELD	
Rating Unit/Min/Max		BU, -, -	
Number of Subsamples		1	
Data Entry Date			
Rating Timing		HARVEST	
Days After First/Last Applic.		157, 130	
Trt-Eval Interval			
Plant-Eval Interval		157 DP-1	
Days After Emergence		149 DE-1	
ARM Action Codes		TY1	
Number of Decimals		1	
Trt No.	Treatment Name	Rate Rate Unit	Appl Code
			18
1	NONTREATED		77.1
2	ANTHEM MAXX CALLISTO AATREX ROUNDUP POWERMAX STATUS AMSOL	4 FL OZ/A A 6 FL OZ/A A 2 QT/A A 32 FL OZ/A B 3 OZ/A B 2.5 % V/V B	190.5 a
3	ACURON ACURON ROUNDUP POWERMAX AMSOL	1.5 QT/A A 1.5 QT/A B 28 FL OZ/A B 2.5 % V/V B	185.9 ab
4	HARNESS MAX HARNESS MAX ROUNDUP POWERMAX AMSOL	37.5 FL OZ/A A 37.5 FL OZ/A B 26.5 FL OZ/A B 2.5 % V/V B	192.0 a
5	ACURON ACURON ROUNDUP POWERMAX AATREX CLARITY AMSOL	1.5 QT/A A 1.5 QT/A B 28 FL OZ/A B 1 PT/A B 8 FL OZ/A B 2.5 % V/V B	168.1 b
6	HARNESS MAX HARNESS MAX ROUNDUP POWERMAX AATREX CLARITY AMSOL	37.5 FL OZ/A A 37.5 FL OZ/A B 26.5 FL OZ/A B 1 PT/A B 8 FL OZ/A B 2.5 % V/V B	189.6 a
7	MAVERICK ROUNDUP POWERMAX AMSOL	1 QT/A A 32 FL OZ/A B 5.9 % V/V B	198.9 a

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^Calculated from residual.

Pest Type			
Pest Code			
Pest Name			
Crop Type, Code	C, ZEAMX		
BBCH Scale	BCOR		
Crop Scientific Name	Zea mays		
Crop Name	Corn		
Rating Date	10/19/2021		
Part Rated	PLANT, C		
Rating Type	YIELD		
Rating Unit/Min/Max	BU, -, -		
Number of Subsamples	1		
Data Entry Date			
Rating Timing	HARVEST		
Days After First/Last Applic.	157, 130		
Trt-Eval Interval			
Plant-Eval Interval	157 DP-1		
Days After Emergence	149 DE-1		
ARM Action Codes	TY1		
Number of Decimals	1		
Trt No.	Treatment Name	Rate Unit	Appl Code
			18
8	MAVERICK	1 QT/A	A
	AATREX	1.5 PT/A	A
	ROUNDUP POWERMAX	32 FL OZ/A	B
	AMSOL	5.9 % V/V	B
			204.4 a
LSD P=.05			19.24
Standard Deviation			12.95
CV			6.82
Grand Mean			189.93
Levene's F^			0.741
Levene's Prob(F)			0.623
Rank X2			.
P(Rank X2)			.
Skewness^			-0.0363
Kurtosis^			-0.5366
Replicate F			4.487
Replicate Prob(F)			0.0161
Treatment F			3.132
Treatment Prob(F)			0.0278

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Could not calculate LSD (% mean diff) for columns 1,2,5,7,9,11,12,13,14,15 because error mean square = 0.
^Calculated from residual.

Purdue Weed Science

Two-Pass Herbicide Programs in Corn

Trial ID: 21S-TPAC-CORN-09	Location: TPAC	Trial Year: 2021
Protocol ID: 21S-TPAC-CORN-09	Investigator (Creator): Dr. Bill Johnson	
Project ID: FMC, Syngenta, Valent	Study Director: Brent Mansfield	
	Sponsor Contact: FMC, Syngenta, Valent	

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

ECHCG, Echinochloa crus-galli, common barnyardgrass = US

Crop Type Code

C = EPPO species (Bayer) codes

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLANT = plant

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

WEIGHT = weight

MOICON = moisture content

YIELD = yield

Rating Unit/Min/Max

%, 0, 100 = percent

LB, , = pound

BU, , = bushel

Plant-Eval Interval

14 DP-1 = 1 ZEAMX 5/15/2021

27 DP-1 = 1 ZEAMX 5/15/2021

41 DP-1 = 1 ZEAMX 5/15/2021

55 DP-1 = 1 ZEAMX 5/15/2021

69 DP-1 = 1 ZEAMX 5/15/2021

83 DP-1 = 1 ZEAMX 5/15/2021

157 DP-1 = 1 ZEAMX 5/15/2021

ARM Action Codes

TY1 = 2.88095238*[16]*(100-[17])/84.5