

# Purdue Weed Science

## Short Corn Weed Control Systems

Trial ID: 23-TPAC-Corn-09  
 Protocol ID: 23-TPAC-Corn-09 Location: Throckmorton-Purdue Ag Center Trial Year: 2023  
 Study Director: Dr. Bill Johnson Sponsor Contact: John Schramski

Investigator: Dr. Bill Johnson

### General Trial Information

**Study Director:** Dr. Bill Johnson **Title:** Professor  
**Investigator:** Dr. Bill Johnson **Title:** Professor

**Discipline:** H herbicide  
**Status:** F one-year/final

**ARM Trial Created On:** Mar-30-2023 **Meets All Objectives:** Y **Reliability:** HIGH high quality  
**Initiation Date:** May-17-2023 **Planned Completion Date:** Oct-15-2023

### Trial Location

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

**Latitude of LL Corner** °: 40.29259 N  
**Longitude of LL Corner** °: -86.90863 W

### Regulations

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Role:** STYDIR study director  
**Study Director:** Dr. Bill Johnson **Title:** Professor  
**Organization:** Purdue University  
**Address 1:** 915 W. State Street  
**Country:** USA United States **E-mail:** wgj@purdue.edu  
**City:** West Lafayette **State/Prov:** IN

**Role:** INVEST investigator  
**Investigator:** Dr. Bill Johnson **Title:** Professor  
**Organization:** Purdue University  
**Address 1:** 915 W. State Street  
**Country:** USA United States **E-mail:** wgj@purdue.edu  
**City:** West Lafayette **State/Prov:** IN

**Role:** SPONSR sponsor  
**Sponsor:** John Schramski  
**Organization:** Bayer

**Role:** COOPER cooperater  
**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

### Crop Description

**Crop 1:** C ZEAMX Zea mays Corn  
**Entry Date:** Jun-8-2023 **Stage Scale:** BBCH  
**Variety:** Short Corn  
**Planting Date:** May-17-2023 **Planting Rate:** 40000 S/A  
**Depth:** 1.5 IN  
**Rows per Plot:** 4 **Planting Method:** PLANTD planted  
**Row Spacing:** 30 IN **Planting Equipment:** PP plot planter  
**Soil Moisture:** NORMAL normal, adequate  
**Emergence Date:** May-26-2023

**Crop 2:** C ZEAMX Zea mays Corn  
**Entry Date:** Jun-8-2023 **Stage Scale:** BBCH  
**Variety:** Tall Corn  
**Planting Date:** May-17-2023 **Planting Rate:** 40000 S/A  
**Depth:** 1.5 IN  
**Rows per Plot:** 4 **Planting Method:** PLANTD planted  
**Row Spacing:** 30 IN **Planting Equipment:** PP plot planter  
**Soil Moisture:** NORMAL normal, adequate  
**Emergence Date:** May-26-2023

<b>Pest Description</b>			
<b>Pest 1 Type:</b> W	<b>Code:</b> AMBTR Ambrosia trifida	<b>Entry Date:</b> Jun-8-2023	
	<b>Common Name:</b> Giant ragweed	<b>Stage Scale:</b> BBCH	
	<b>Attributes:</b> ALS-R		
<b>Pest 2 Type:</b> W	<b>Code:</b> ECHCG Echinochloa crus-galli	<b>Entry Date:</b> Jun-8-2023	
	<b>Common Name:</b> common barnyardgrass	<b>Stage Scale:</b> BBCH	
<b>Pest 3 Type:</b> W	<b>Code:</b> CHEAL Chenopodium album	<b>Entry Date:</b> Mar-12-2024	
	<b>Common Name:</b> common lambsquarters	<b>Stage Scale:</b> BBCH	
<b>Pest 4 Type:</b> W	<b>Code:</b> AMATU Amaranthus tuberculatus	<b>Entry Date:</b> Mar-12-2024	
	<b>Common Name:</b> tall waterhemp	<b>Stage Scale:</b> BBCH	

<b>Site and Design</b>			
<b>Treated Plot Width:</b> 10 FT		<b>Site Type:</b> FIELD field	
<b>Treated Plot Length:</b> 35 FT		<b>Experimental Unit:</b> 1 PLOT plot	
<b>Treated Plot Area:</b> 350.0 FT2		<b>Tillage Type:</b> CONTIL conventional-till	
<b>Replications:</b> 3	<b>Treatments:</b> 12	<b>Plots:</b> 36	<b>Study Design:</b> SPLPLO Split-Plot
<b>Trial Initiation Comments:</b>			
180 lbs of N applied as 28% UAN on 5/5/23 then tilled in.			
A Blanket of Gramoxone was sprayed on 05/16/2023 prior to planting.			
Trial area was weed-free at planting.			

<b>Soil Description</b>		
<b>Description Name:</b> TPAC - Field 4BW		
<b>% Sand:</b> 15	<b>% OM:</b> 5	<b>Texture:</b> SIC silty clay
<b>% Silt:</b> 44		<b>Soil Name:</b> Drummer
<b>% Clay:</b> 41		<b>Fert. Level:</b> G good
	<b>pH:</b> 7	<b>CEC:</b> 19.3

<b>Weather Conditions</b>	
<b>Overall Moisture Conditions:</b> DRY dry	
<b>Irrigation Type:</b> RAIN rain	

No.	Date	Moisture Total	Unit	Min Temp	Max Temp	Avg Temp	Temp Unit	Max Wind	Avg Wind	Unit	Avg Soil Temp	Unit
1.	May-15-2023	0.04	IN	55	75.6	63.1	F	15	3.6	MPH	64.2	F
2.	May-16-2023	0.01	IN	55.8	73.8	62.8	F	16.8	3.1	MPH	64.2	F
3.	May-17-2023	0	IN	50.7	72.7	61.3	F	17.9	5.4	MPH	63.9	F
4.	May-18-2023	0	IN	45.3	77.4	61.9	F	15	2.9	MPH	63.1	F
5.	May-19-2023	0.59	IN	55.8	83.1	65.8	F	30.4	7.6	MPH	63.3	F
6.	May-20-2023	0	IN	48.7	67.1	58.1	F	19	3.8	MPH	63.7	F
7.	May-21-2023	0	IN	45.9	81.1	64.2	F	14.3	1.1	MPH	63.9	F
8.	May-22-2023	0	IN	52.3	84	69.6	F	11.9	0.9	MPH	65.7	F
9.	May-23-2023	0	IN	55.8	86.2	72.3	F	15.4	1.3	MPH	67.1	F
10.	May-24-2023	0	IN	55.4	86.2	72.9	F	22.6	5.4	MPH	67.6	F
11.	May-25-2023	0	IN	48.9	71.6	59.7	F	23.3	9.2	MPH	65.1	F
12.	May-26-2023	0	IN	46.4	77	62.4	F	22.6	4.5	MPH	64.4	F
13.	May-27-2023	0	IN	48	78.4	65.8	F	7.2	0	MPH	64.2	F
14.	May-28-2023	0	IN	57.4	83.1	71.1	F	4.3	0	MPH	66.4	F
15.	Aug-29-2023	0	IN	57.7	88.7	74.8	F	6.5	0	MPH	69.1	F
16.	May-30-2023	0	IN	60.6	91	77.2	F	15.4	0.7	MPH	69.8	F
17.	May-31-2023	0	IN	66.4	90.7	78.3	F	20.4	3.6	MPH	71.6	F
18.	Jun-1-2023	0	IN	63.5	92.1	78.8	F	17.2	2.5	MPH	73.6	F
19.	Jun-2-2023	0	IN	61.9	92.3	79.3	F	13.2	0.7	MPH	74.5	F
20.	Jun-3-2023	0	IN	65.3	93.7	80.2	F	16.1	1.8	MPH	75.4	F
21.	Jun-4-2023	0	IN	64	84.4	74.3	F	17.9	6.5	MPH	75.4	F
22.	Jun-5-2023	0	IN	54.5	83.1	69.6	F	13.2	0	MPH	71.8	F
23.	Jun-6-2023	0	IN	54.3	88.3	71.1	F	7.2	0	MPH	71.6	F
24.	Jun-7-2023	0	IN	54.3	80.1	68.5	F	16.1	1.3	MPH	73.4	F
25.	Jun-8-2023	0	IN	46.9	80.2	64.9	F	1.8	0	MPH	72	F
26.	Jun-9-2023	0	IN	46.9	82	67.1	F	7.2	0	MPH	72.1	F
27.	Jun-10-2023	0	IN	55.2	86.5	72.7	F	13.2	0	MPH	74.1	F
28.	Jun-11-2023	0.38	IN	55.2	69.4	63.5	F	22.6	4	MPH	70.3	F
29.	Jun-12-2023	0	IN	54	69.1	62.8	F	25.1	5.6	MPH	70.5	F
30.	Jun-13-2023	0.05	IN	55.6	70.7	62.4	F	18.8	7.8	MPH	65.3	F
31.	Jun-14-2023	0	IN	59.4	78.8	68.4	F	14.1	2.9	MPH	68.9	F

32.	Jun-15-2023	0	IN	57.7	87.1	71.4	F	19.9	7.2	MPH	70.9	F
33.	Jun-16-2023	0	IN	51.3	75.6	62.6	F	14.1	4.3	MPH	69.3	F
34.	Jun-17-2023	0	IN	51.4	84.2	68.7	F	12.1	2.5	MPH	70.9	F
35.	Jun-18-2023	0	IN	57.9	86.4	72.7	F	18.1	4.5	MPH	73.4	F
36.	Jun-19-2023	0	IN	69.1	86.5	79.9	F	22.4	6.9	MPH	76.8	F
37.	Jun-20-2023	0	IN	65.5	89.4	76.1	F	27.1	8.9	MPH	76.8	F
38.	Jun-21-2023	0	IN	64.8	88.7	76.6	F	23.9	7.4	MPH	78.1	F
39.	Jun-22-2023	0	IN	63.5	83.7	73	F	21.5	5.4	MPH	77.9	F
40.	Jun-23-2023	0	IN	66.6	85.8	74.3	F	11.2	2.5	MPH	77.2	F
41.	Jun-24-2023	0	IN	60.6	91.6	77.5	F	15	3.6	MPH	77.7	F
42.	Jun-25-2023	0.93	IN	67.8	88.9	77.9	F	36	10.1	MPH	76.8	F
43.	Jun-26-2023	0	IN	66	77	71.1	F	26.6	8.9	MPH	72.9	F
44.	Jun-27-2023	0	IN	60.4	76.8	67.5	F	14.5	4	MPH	70.9	F
45.	Jun-28-2023	0	IN	53.8	82.8	68.5	F	17	2.5	MPH	70.9	F
46.	Jun-29-2023	0.38	IN	64.9	84.9	70.9	F	44.7	7.4	MPH	71.8	F
47.	Jun-30-2023	0	IN	62.8	86	75	F	21	3.6	MPH	73.4	F
48.	Jul-1-2023	0.45	IN	69.4	87.6	75.7	F	31.3	5.1	MPH	76.1	F
49.	Jul-2-2023	0.65	IN	66	83.3	73.6	F	28.6	6.9	MPH	75.7	F
50.	Jul-3-2023	0	IN	65.8	87.8	75	F	14.5	4.7	MPH	76.3	F
51.	Jul-4-2023	0	IN	65.1	90.9	77.9	F	14.1	2.9	MPH	78.1	F
52.	Jul-5-2023	0.01	IN	68.4	89.6	78.6	F	25.1	5.1	MPH	79.3	F
53.	Jul-6-2023	0.01	IN	68.4	84.2	74.8	F	16.6	3.8	MPH	78.6	F
54.	Jul-7-2023	0	IN	60.6	84	73.4	F	11.4	2.7	MPH	77.7	F
55.	Jul-8-2023	0.75	IN	61.5	76.3	68.5	F	17.7	3.1	MPH	75.6	F
56.	Jul-9-2023	0	IN	57	82.2	69.4	F	11.6	2.2	MPH	74.5	F
57.	Jul-10-2023	0	IN	58.8	82.2	71.6	F	12.5	4	MPH	75.4	F
58.	Jul-11-2023	0	IN	62.6	85.1	74.5	F	21.3	7.2	MPH	75.6	F
59.	Jul-12-2023	0	IN	69.1	86.4	76.8	F	23	6.3	MPH	76.3	F
60.	Jul-13-2023	0	IN	64	80	71	F	10.1	2.9	MPH	75.4	F
61.	Jul-14-2023	0	IN	61	88	76	F	14.8	4.5	MPH	76.1	F
62.	Jul-15-2023	1.59	IN	67	83	74	C	20.8	4	MPH	75.9	F
63.	Jul-16-2023	0	IN	63	83	73	C	17.4	4.9	MPH	75.4	F
64.	Jul-17-2023	0.14	IN	65	81	72	C	12.8	3.6	MPH	74.7	F
65.	Jul-18-2023	0	IN	63	82	72	C	9.6	2.2	MPH	74.8	F
66.	Jul-19-2023	0	IN	57	86	73	C	9.2	1.8	MPH	74.7	F
67.	Jul-20-2023	0	IN	67	88	76	C	22.1	5.4	MPH	76.5	F
68.	Jul-21-2023	0	IN	62	81	71	C	11.9	2.5	MPH	75	F
69.	Jul-22-2023	0	IN	58	83	71	C	9.2	1.8	MPH	73.9	F
70.	Jul-23-2023	0	IN	59	86	72	C	14.1	3.4	MPH	73.6	F
71.	Jul-24-2023	0	IN	64	88	76	C	9.6	2.2	MPH	75.2	F
72.	Jul-25-2023	0	IN	62	87	76	C	11.4	2.7	MPH	75.2	F
73.	Jul-26-2023	0.06	IN	71	89	80	C	25.1	8.5	MPH	76.1	F
74.	Jul-27-2023	0	IN	74	95	83	C	11.6	3.4	MPH	78.4	F
75.	Jul-28-2023	0.48	IN	70	90	81	C	36.2	6.3	MPH	79.2	F
76.	Jul-29-2023	0.73	IN	67	85	75	F	32	4.5	MPH	78.1	F
77.	Jul-30-2023	0	IN	62	85	73	F	15.7	2.9	MPH	76.3	F
78.	Jul-31-2023	0	IN	57	81	69	F	11.9	2.5	MPH	74.7	F
79.	Aug-1-2023	0	IN	56	82	71	F	10.3	2	MPH	73.4	F
80.	Aug-2-2023	0	IN	62	84	72	F	12.3	3.6	MPH	74.7	F
81.	Aug-3-2023	0	IN	64	89	75	F	11.6	1.8	MPH	77.5	F
82.	Aug-4-2023	0	IN	61	91	77	F	8.5	1.8	MPH	78.8	F
83.	Aug-5-2023	0.05	IN	69	80	74	F	29.8	5.6	MPH	76.8	F
84.	Aug-6-2023	0.73	IN	64	78	69	F	18.1	5.8	MPH	74.3	F
85.	Aug-7-2023	0	IN	65	78	70	F	17.2	3.4	MPH	74.3	F
86.	Aug-8-2023	0	IN	60	82	69	F	22.1	4	MPH	74.5	F
87.	Aug-9-2023	0	IN	61	81	69	F	19.9	2.7	MPH	73.9	F
88.	Aug-10-2023	0	IN	63	80	71	F	15.4	3.8	MPH	75	F
89.	Aug-11-2023	0	IN	64	84	74	F	22.1	5.6	MPH	75.2	F
90.	Aug-12-2023	0	IN	65	85	75	F	20.1	5.6	MPH	76.1	F

91.	Aug-13-2023	1.27	IN	63	85	74	F	11.4	3.1	MPH	76.1	F
92.	Aug-14-2023	0	IN	65	77	70	F	18.3	5.1	MPH	74.7	F
93.	Aug-15-2023	0.15	IN	59	75	66	F	19	5.6	MPH	71.8	F
94.	Aug-16-2023	0.46	IN	55	80	68	F	9.8	2.7	MPH	71.6	F
95.	Aug-17-2023	0.5	IN	60	78	68	F	24.2	7.2	MPH	71.2	F
96.	Aug-18-2023	0	IN	53	77	65	F	12.8	2.2	MPH	70.5	F
97.	Aug-19-2023	0	IN	57	81	69	F	16.1	4.3	MPH	70.9	F
98.	Aug-20-2023	0.35	IN	66	91	78	F	11.9	3.4	MPH	73.6	F
99.	Aug-21-2023	0	IN	73	91	82	F	11.9	3.4	MPH	76.8	F
100.	Aug-22-2023	0.08	IN	71	88	78	F	11.2	3.8	MPH	77.5	F
101.	Aug-23-2023	0	IN	70	91	80	F	17	6	MPH	77.5	F
102.	Aug-24-2023	0	IN	76	92	84	F	19.5	6.5	MPH	79.2	F
103.	Aug-25-2023	0.25	IN	76	92	82	F	11	3.4	MPH	80.1	F
104.	Aug-26-2023	0	IN	68	84	75	F	13.9	3.4	MPH	78.6	F
105.	Aug-27-2023	0	IN	60	78	70	F	14.1	5.1	MPH	75.9	F
106.	Aug-28-2023	0	IN	56	80	67	F	12.3	2.9	MPH	73.4	F
107.	Aug-29-2023	0	IN	52	81	68	F	14.1	3.1	MPH	72.5	F
108.	Aug-30-2023	0	IN	56	75	65	F	17.4	4.7	MPH	72.1	F
109.	Aug-31-2023	0	IN	50	76	64	F	15.2	4.5	MPH	70.5	F
110.	Sep-1-2023	0	IN	53	84	68	F	12.3	3.1	MPH	70.7	F
111.	Sep-2-2023	0	IN	56	87	72	F	19.2	3.6	MPH	72	F
112.	Sep-3-2023	0	IN	68	88	77	F	16.8	5.8	MPH	74.5	F
113.	Sep-4-2023	0	IN	66	89	78	F	16.6	5.1	MPH	74.7	F
114.	Sep-5-2023	0	IN	70	90	78	F	20.6	6.5	MPH	75.9	F
115.	Sep-6-2023	0.29	IN	65	84	74	F	19.7	7.4	MPH	75.4	F
116.	Sep-7-2023	0	IN	65	74	68	F	13	4.5	MPH	73.2	F
117.	Sep-8-2023	0	IN	59	73	65	F	15.9	3.1	MPH	71.2	F
118.	Sep-9-2023	0	IN	60	78	67	F	13.2	4	MPH	70.5	F
119.	Sep-10-2023	0	IN	51	83	66	F	8.5	1.6	MPH	69.8	F
120.	Sep-11-2023	0.04	IN	57	82	68	F	12.1	3.4	MPH	70.2	F
121.	Sep-12-2023	0.02	IN	51	75	65	F	13.6	3.1	MPH	70.3	F
122.	Sep-13-2023	0	IN	45	75	60	F	17.2	2.9	MPH	67.3	F
123.	Sep-14-2023	0	IN	46	78	62	F	12.8	2.7	MPH	66.4	F
124.	Sep-15-2023	0	IN	48	82	64	F	11.9	2.5	MPH	66.6	F
125.	Sep-16-2023	0	IN	50	80	63	F	9.8	2.7	MPH	66.4	F
126.	Sep-17-2023	0.22	IN	54	72	61	F	12.1	2.5	MPH	66.6	F
127.	Sep-18-2023	0	IN	49	74	61	F	16.1	2.7	MPH	65.5	F
128.	Sep-19-2023	0	IN	52	79	65	F	16.6	4.7	MPH	64.9	F
129.	Sep-20-2023	0	IN	53	83	69	F	14.8	3.8	MPH	66	F
130.	Sep-21-2023	0	IN	60.1	80.4	69.3	F	15.2	2.9	MPH	67.3	F
131.	Sep-22-2023	0	IN	59.2	85.6	71.4	F	13.2	3.4	MPH	67.8	F
132.	Sep-23-2023	0	IN	54.1	80.8	67.5	F	16.6	4	MPH	67.6	F
133.	Sep-24-2023	0	IN	50.9	85.3	66	F	19.2	3.1	MPH	67.3	F
134.	Sep-25-2023	0	IN	54.3	85.5	68.7	F	14.5	3.1	MPH	68	F
135.	Sep-26-2023	0.18	IN	60.4	76.6	66	F	20.6	4.3	MPH	68	F
136.	Sep-27-2023	0.14	IN	61.2	76.3	65.7	F	15.2	3.4	MPH	67.1	F
137.	Sep-28-2023	0	IN	58.3	74.8	66.2	F	8.9	2.2	MPH	67.6	F
138.	Sep-29-2023	0	IN	54.3	82.8	66.6	F	14.3	2.2	MPH	67.6	F
139.	Sep-30-2023	0	IN	54	86.2	68.7	F	13.9	2.5	MPH	67.3	F
140.	Oct-1-2023	0	IN	55.8	87.1	70.9	F	14.8	2.2	MPH	67.5	F
141.	Oct-2-2023	0	IN	56.7	89.8	72	F	12.1	2.2	MPH	68.2	F
142.	Oct-3-2023	0	IN	57.2	88.9	73.8	F	15	3.8	MPH	68.7	F
143.	Oct-4-2023	0	IN	64.9	86.5	73.9	F	24.6	5.8	MPH	69.3	F
144.	Oct-5-2023	0.38	IN	60.4	70.9	65.8	F	21.7	6.3	MPH	67.8	F
145.	Oct-6-2023	0	IN	44.2	68	54.3	F	28.2	6	MPH	64.2	F
146.	Oct-7-2023	0	IN	42.4	61.3	50.5	F	22.1	6.9	MPH	59.9	F
147.	Oct-8-2023	0	IN	40.1	56.5	48.6	F	15.2	3.8	MPH	57.2	F

<b>Application Description</b>		
	<b>A</b>	<b>B</b>
<b>Date</b>	May-17-2023	Jun-8-2023
<b>Start Time</b>	3:50 PM	9:40 AM
<b>Stop Time</b>	4:20 PM	9:58 AM
<b>Method</b>	SPRAY	SPRAY
<b>Timing</b>	PRE	POST
<b>Placement</b>	BROSOI	2-4"WEEDS
<b>Applied By</b>	L. MAIA	L. MAIA
<b>Entry Date</b>	Jun-8-2023	Jun-8-2023
<b>Air Temperature Start, Stop</b>	77.8, 77.8 F	77, 77 F
<b>% Relative Humidity Start, Stop</b>	35.2, 35.2	30, 30
<b>Wind Velocity+Dir. Start</b>	7 MPH, W	4 MPH, SE
<b>Wind Velocity+Dir. Stop</b>	3 MPH, W	1 MPH, SE
<b>Wind Velocity+Dir. Max</b>	7 MPH, W	4 MPH, SE
<b>Wet Leaves (Y/N)</b>	N, no	N, no
<b>Soil Temperature</b>	80 F	80 F
<b>Soil Moisture</b>	ADEQUATE	DRY
<b>% Cloud Cover</b>	0	0

<b>Crop Stage At Each Application</b>		
	<b>A</b>	<b>B</b>
<b>Crop 1 Code, BBCH Scale</b>	ZEAMX, BCOR	ZEAMX, BCOR
<b>Days after Emergence</b>	-9	13
<b>Stage Majority, Percent</b>	0, -	V4, -
<b>Stage Minimum, Percent</b>	0, -	V3, -
<b>Stage Maximum, Percent</b>	0, -	V4, -
<b>Height Average</b>	0 IN	11 IN
<b>Height Minimum, Maximum</b>	0, 0	9, 12
<b>Crop 2 Code, BBCH Scale</b>	ZEAMX, BCOR	ZEAMX, BCOR
<b>Days after Emergence</b>	-9	13
<b>Stage Majority, Percent</b>	0, -	V4, -
<b>Stage Minimum, Percent</b>	0, -	V3, -
<b>Stage Maximum, Percent</b>	0, -	V4, -
<b>Height Average</b>	0 IN	11 IN
<b>Height Minimum, Maximum</b>	0, 0	10, 14

<b>Pest Stage At Each Application</b>		
	<b>A</b>	<b>B</b>
<b>Pest 1 Code, Type, Scale</b>	AMBTR, W, BBCH	AMBTR, W, BBCH
<b>Height Average</b>	0 IN	1 IN
<b>Height Minimum, Maximum</b>	0, 0	1, 2
<b>Density Average</b>	0 FT2	1 FT2
<b>Density Minimum, Maximum</b>	0, 0	0, 2
<b>Pest 2 Code, Type, Scale</b>	ECHCG, W, 0	ECHCG, W, BBCH
<b>Stage Majority, Percent</b>	0, -	
<b>Height Average</b>	0 IN	1 IN
<b>Height Minimum, Maximum</b>	0, 0	1, 3
<b>Density Average</b>	0 FT2	2 FT2
<b>Density Minimum, Maximum</b>	0, 0	0, 7
<b>Pest 3 Code, Type, Scale</b>	CHEAL, W, BBCH	CHEAL, W, BBCH
<b>Pest 4 Code, Type, Scale</b>	AMATU, W, BBCH	AMATU, W, BBCH

**Application Equipment**

	<b>A</b>	<b>B</b>
<b>Equipment Name</b>	CO2 BACKPACK	CO2 BACKPACK
<b>Equipment Type</b>	BACSPR	BACSPR
<b>Operation Pressure</b>	28 PSI	19 PSI
<b>Nozzle Model</b>	AIXR	XR
<b>Nozzle Type</b>	FLAFAI	FLAFXR
<b>Nozzle TradeName</b>	TEEJET	TEEJET
<b>Nozzle Tip Size, Color</b>	110015, GREEN	11002, YELLOW
<b>Nozzle Spacing</b>	15.0 IN	15.0 IN
<b>Boom Length</b>	10.0 FT	10.0 FT
<b>Ground Speed</b>	3 MPH	3 MPH
<b>Application Amount</b>	15 GAL/AC	15 GAL/AC
<b>Mix Overage</b>	236.0 mL	236.0 mL
<b>Mix Size</b>	1605.0 mL	1605.0 mL
<b>Propellant</b>	COMCO2	COMCO2

## Purdue Weed Science

### Short Corn Weed Control Systems

Trial ID: 23-TPAC-Corn-09  
 Protocol ID: 23-TPAC-Corn-09 Location: Throckmorton-Purdue Ag Center Trial Year: 2023  
 Study Director: Dr. Bill Johnson Sponsor Contact: John Schramski

Investigator: Dr. Bill Johnson

Assessed By	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo			
Rating Date	Jun-8-2023	Jun-15-2023	Jun-8-2023	Jul-6-2023	Oct-8-2023			
SE Description	PLOT, C	PLOT, C	PLOT, C	PLOT, C	PLOT, C			
Part Rated	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO			
Rating Type	%	%	%	%	%			
Rating Unit	0, 100, -	0, 100, -	0, 100, -	0, 100, -	0, 100, -			
Rating Min/Max/Interval	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT			
Collection Basis	C, ZEAMD	C, ZEAMD						
Crop Type, Code	Zea mays indent>	Zea mays indent>						
Crop Scientific Name	Dent corn	Dent corn						
Crop Name								
Pest Code			AMBTR	AMBTR	AMBTR			
Pest Scientific Name			Ambrosia trifida	Ambrosia trifida	Ambrosia trifida			
Pest Name			Giant ragweed	Giant ragweed	Giant ragweed			
Rating Timing	21 DAA	7 DAB	21 DAA	28 DAB	AT HARVEST			
ARM Action Codes	EC	EC	EC	EC	EC			
Trt No.	Treatment Name	Rate	Appl Code	1*	6*	2*	8*	16*
Rate Unit								
1	SHORT HYBRID NONTREATED			0.0	0.0	0.0	0.0	0.0
2	SHORT HYBRID TRIVOLT AATREX	20 fl oz/a 1 qt/a	A A	0.0 a	0.0 c	91.7 ab	73.3 c	63.3 c
3	SHORT HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a 1 qt/a 30 fl oz/a 2.5 % v/v	B B B B	0.0 a	5.0 a	0.0 c	99.0 a	99.0 a
4	SHORT HYBRID TRIVOLT AATREX LAUDIS AATREX ROUNDUP POWERMAX 3 AMSOL	20 fl oz/a 1 qt/a 3 fl oz/a 0.5 qt/a 30 fl oz/a 2.5 % v/v	A A B B B B	0.0 a	0.0 c	91.7 ab	99.0 a	99.0 a
5	SHORT HYBRID HARNESS XTRA BALANCE FLEXX CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	2 qt/a 3 fl oz/a 3 fl oz/a 0.5 qt/a 30 fl oz/a 2.5 % v/v	A A B B B B	0.0 a	4.3 ab	86.0 b	99.0 a	98.3 a
6	SHORT HYBRID ACURON ACURON ROUNDUP POWERMAX 3 AMSOL	1.5 qt/a 1.5 qt/a 30 fl oz/a 2.5 % v/v	A B B B	0.0 a	0.0 c	86.7 b	99.0 a	99.0 a
7	TALL HYBRID NONTREATED			0.0 a	0.0 c	0.0 c	0.0 d	0.0 d
8	TALL HYBRID TRIVOLT AATREX	20 fl oz/a 1 qt/a	A A	0.0 a	0.0 c	91.7 ab	83.3 b	75.0 b
9	TALL HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a 1 qt/a 30 fl oz/a 2.5 % v/v	B B B B	0.0 a	3.7 b	0.0 c	99.0 a	99.0 a

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

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By	Zimmer, Marcelo				
Rating Date	Jun-8-2023	Jun-15-2023	Jun-8-2023	Jul-6-2023	Oct-8-2023
SE Description					
Part Rated	PLOT, C				
Rating Type	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Rating Min/Max/Interval	0, 100, -	0, 100, -	0, 100, -	0, 100, -	0, 100, -
Collection Basis	1 PLOT				
Crop Type, Code	C, ZEAMD	C, ZEAMD			
Crop Scientific Name	Zea mays indent>	Zea mays indent>			
Crop Name	Dent corn	Dent corn			
Pest Code			AMBTR	AMBTR	AMBTR
Pest Scientific Name			Ambrosia trifida	Ambrosia trifida	Ambrosia trifida
Pest Name			Giant ragweed	Giant ragweed	Giant ragweed
Rating Timing	21 DAA	7 DAB	21 DAA	28 DAB	AT HARVEST
ARM Action Codes	EC	EC	EC	EC	EC
Trt Treatment					
No. Name					
Rate					
Appl					
Code					
	1*	6*	2*	8*	16*
10 TALL HYBRID	0.0 a	0.0 c	93.3 ab	99.0 a	99.0 a
TRIVOLT	20 fl oz/a A				
AATREX	1 qt/a A				
LAUDIS	3 fl oz/a B				
AATREX	0.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
11 TALL HYBRID	0.0 a	4.3 ab	91.7 ab	98.7 a	98.7 a
HARNES XTRA	2 qt/a A				
BALANCE FLEXX	3 fl oz/a A				
CAPRENO	3 fl oz/a B				
AATREX	0.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
12 TALL HYBRID	0.0 a	0.0 c	95.0 a	99.0 a	99.0 a
ACURON	1.5 qt/a A				
ACURON	1.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
LSD P=.05	.	1.06	7.88	4.85	7.40
Standard Deviation	0.00	0.62	4.62	2.85	4.35
CV	0.0	39.52	6.99	3.3	5.15
Levene's Prob(F)	.	0.76	0.794	0.204	0.442
P(Shapiro-Wilk)^	.	0.0*	0.3162	0.0*	0.0002*
P(Skewness)^	.	0.8194	0.0923	0.8405	0.0109*
P(Kurtosis)^	.	0.0009*	0.2169	0.0*	0.0*
Analyzed as	RCB	RCB	RCB	RCB	RCB
Replicate F	0.000	0.313	0.665	1.350	2.436
Replicate Prob(F)	1.0000	0.7351	0.5254	0.2820	0.1130
Treatment F	0.000	37.656	254.244	329.624	148.152
Treatment Prob(F)	1.0000	0.0001	0.0001	0.0001	0.0001

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\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By				Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo
Rating Date				Jun-8-2023	Jul-6-2023	Oct-8-2023	Jun-8-2023
SE Description				PLOT, C	PLOT, C	PLOT, C	PLOT, C
Part Rated				CONTRO	CONTRO	CONTRO	CONTRO
Rating Type				%	%	%	%
Rating Unit				0, 100, -	0, 100, -	0, 100, -	0, 100, -
Rating Min/Max/Interval				1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis							
Crop Type, Code							
Crop Scientific Name							
Crop Name							
Pest Code				ECHCG	ECHCG	ECHCG	CHEAL
Pest Scientific Name				Echinochloa cru>	Echinochloa cru>	Echinochloa cru>	Chenopodium alb>
Pest Name				common barnyard>	common barnyard>	common barnyard>	common lambsqua>
Rating Timing				21 DAA	28 DAB	AT HARVEST	21 DAA
ARM Action Codes				EC	EC	EC	EC
Trt No.	Treatment Name	Rate	Appl Code	3*	9*	17*	4*
1	SHORT HYBRID NONTREATED			0.0	0.0	0.0	0.0
2	SHORT HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		90.0 bc	85.0 c	88.3 c	100.0 a
3	SHORT HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		0.0 e	96.0 ab	98.7 a	0.0 b
4	SHORT HYBRID TRIVOLT AATREX LAUDIS AATREX ROUNDUP POWERMAX 3 AMSOL	20 fl oz/a A 1 qt/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		95.0 ab	99.0 a	99.0 a	100.0 a
5	SHORT HYBRID HARNESS XTRA BALANCE FLEXX CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	2 qt/a A 3 fl oz/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		97.0 a	98.7 a	99.0 a	100.0 a
6	SHORT HYBRID ACURON ACURON ROUNDUP POWERMAX 3 AMSOL	1.5 qt/a A 1.5 qt/a B 30 fl oz/a B 2.5 % v/v B		81.7 d	97.3 ab	98.3 a	100.0 a
7	TALL HYBRID NONTREATED			0.0 e	0.0 d	0.0 d	0.0 b
8	TALL HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		96.0 a	93.3 b	91.7 b	100.0 a
9	TALL HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		0.0 e	97.7 ab	99.0 a	0.0 b

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\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	
Rating Date	Jun-8-2023	Jul-6-2023	Oct-8-2023	Jun-8-2023	
SE Description					
Part Rated	PLOT, C	PLOT, C	PLOT, C	PLOT, C	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	
Rating Unit	%	%	%	%	
Rating Min/Max/Interval	0, 100, -	0, 100, -	0, 100, -	0, 100, -	
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Crop Type, Code					
Crop Scientific Name					
Crop Name					
Pest Code	ECHCG	ECHCG	ECHCG	CHEAL	
Pest Scientific Name	Echinochloa cru>	Echinochloa cru>	Echinochloa cru>	Chenopodium alb>	
Pest Name	common barnyard>	common barnyard>	common barnyard>	common lambsqua>	
Rating Timing	21 DAA	28 DAB	AT HARVEST	21 DAA	
ARM Action Codes	EC	EC	EC	EC	
Trt Treatment					
No. Name					
Rate					
Appl					
Code					
		3*	9*	17*	4*
10 TALL HYBRID		95.3 ab	99.0 a	99.0 a	100.0 a
TRIVOLT	20 fl oz/a A				
AATREX	1 qt/a A				
LAUDIS	3 fl oz/a B				
AATREX	0.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
11 TALL HYBRID		97.3 a	99.0 a	99.0 a	100.0 a
HARNESX XTRA	2 qt/a A				
BALANCE FLEXX	3 fl oz/a A				
CAPRENO	3 fl oz/a B				
AATREX	0.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
12 TALL HYBRID		85.0 cd	99.0 a	99.0 a	100.0 a
ACURON	1.5 qt/a A				
ACURON	1.5 qt/a B				
ROUNDUP POWERMAX 3	30 fl oz/a B				
AMSOL	2.5 % v/v B				
LSD P=.05	5.41	4.37	2.18	.	
Standard Deviation	3.17	2.57	1.28	0.00	
CV	4.74	2.93	1.45	0.0	
Levene's Prob(F)	0.307	0.643	0.692	.	
P(Shapiro-Wilk)^	0.0104*	0.0122*	0.0055*	.	
P(Skewness)^	0.8219	0.1606	0.8983	.	
P(Kurtosis)^	0.0004*	0.1447	0.0009*	.	
Analyzed as	RCB	RCB	RCB	RCB	
Replicate F	1.410	0.661	1.162	0.000	
Replicate Prob(F)	0.2674	0.5270	0.3330	1.0000	
Treatment F	559.085	392.104	1589.716	0.000	
Treatment Prob(F)	0.0001	0.0001	0.0001	1.0000	

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\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By			Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	
Rating Date			Jul-6-2023	Oct-8-2023	Jun-8-2023	Jul-6-2023	
SE Description			PLOT, C	PLOT, C	PLOT, C	PLOT, C	
Part Rated			CONTRO	CONTRO	CONTRO	CONTRO	
Rating Type			%	%	%	%	
Rating Unit			0, 100, -	0, 100, -	0, 100, -	0, 100, -	
Rating Min/Max/Interval			1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Collection Basis							
Crop Type, Code							
Crop Scientific Name							
Crop Name							
Pest Code			CHEAL	CHEAL	AMATU	AMATU	
Pest Scientific Name			Chenopodium alb>	Chenopodium alb>	Amaranthus tube>	Amaranthus tube>	
Pest Name			common lambsqua>	common lambsqua>	tall waterhemp	tall waterhemp	
Rating Timing			28 DAB	AT HARVEST	21 DAA	28 DAB	
ARM Action Codes			EC	EC	EC	EC	
Trt No.	Treatment Name	Rate	Appl Code	10*	18*	5*	11*
		Rate Unit					
1	SHORT HYBRID NONTREATED			0.0	0.0	0.0	0.0
2	SHORT HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		99.0 a	99.0 a	100.0 a	97.7 a
3	SHORT HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	99.0 a	0.0 c	91.0 b
4	SHORT HYBRID TRIVOLT AATREX LAUDIS AATREX ROUNDUP POWERMAX 3 AMSOL	20 fl oz/a A 1 qt/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	99.0 a	100.0 a	99.0 a
5	SHORT HYBRID HARNESS XTRA BALANCE FLEXX CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	2 qt/a A 3 fl oz/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	99.0 a	100.0 a	99.0 a
6	SHORT HYBRID ACURON ACURON ROUNDUP POWERMAX 3 AMSOL	1.5 qt/a A 1.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	99.0 a	96.7 b	99.0 a
7	TALL HYBRID NONTREATED			0.0 b	0.0 b	0.0 c	0.0 d
8	TALL HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		99.0 a	99.0 a	100.0 a	78.3 c
9	TALL HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	99.0 a	0.0 c	93.3 ab

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

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo
Rating Date	Jul-6-2023	Oct-8-2023	Jun-8-2023	Jul-6-2023
SE Description				
Part Rated	PLOT, C	PLOT, C	PLOT, C	PLOT, C
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Rating Min/Max/Interval	0, 100, -	0, 100, -	0, 100, -	0, 100, -
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Crop Type, Code				
Crop Scientific Name				
Crop Name				
Pest Code	CHEAL	CHEAL	AMATU	AMATU
Pest Scientific Name	Chenopodium alb>	Chenopodium alb>	Amaranthus tube>	Amaranthus tube>
Pest Name	common lambsqua>	common lambsqua>	tall waterhemp	tall waterhemp
Rating Timing	28 DAB	AT HARVEST	21 DAA	28 DAB
ARM Action Codes	EC	EC	EC	EC
Trt Treatment				
No. Name				
Rate	10*	18*	5*	11*
Appl Code				
Rate Unit				
10 TALL HYBRID	99.0 a	99.0 a	96.7 b	99.0 a
TRIVOLT	20 fl oz/a A			
AATREX	1 qt/a A			
LAUDIS	3 fl oz/a B			
AATREX	0.5 qt/a B			
ROUNDUP POWERMAX 3	30 fl oz/a B			
AMSOL	2.5 % v/v B			
11 TALL HYBRID	99.0 a	99.0 a	97.0 b	99.0 a
HARNESS XTRA	2 qt/a A			
BALANCE FLEXX	3 fl oz/a A			
CAPRENO	3 fl oz/a B			
AATREX	0.5 qt/a B			
ROUNDUP POWERMAX 3	30 fl oz/a B			
AMSOL	2.5 % v/v B			
12 TALL HYBRID	99.0 a	99.0 a	97.7 ab	99.0 a
ACURON	1.5 qt/a A			
ACURON	1.5 qt/a B			
ROUNDUP POWERMAX 3	30 fl oz/a B			
AMSOL	2.5 % v/v B			
LSD P=.05	.	.	2.42	6.10
Standard Deviation	0.00	0.00	1.42	3.58
CV	0.0	0.0	1.98	4.13
Levene's Prob(F)	.	.	0.82	0.476
P(Shapiro-Wilk)^	.	.	0.0338*	0.0021*
P(Skewness)^	.	.	0.1232	0.9738
P(Kurtosis)^	.	.	0.5513	0.0085*
Analyzed as	RCB	RCB	RCB	RCB
Replicate F	0.000	0.000	2.883	0.612
Replicate Prob(F)	1.0000	1.0000	0.0794	0.5519
Treatment F	0.000	0.000	3149.451	203.135
Treatment Prob(F)	1.0000	1.0000	0.0001	0.0001

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

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Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By			Zimmer, Marcelo					
Rating Date			Oct-8-2023	Jul-10-2023	Jun-26-2023	Jul-17-2023	Oct-8-2023	
SE Description			PLOT, C	CANOPY COVER	PLOT, C	PLOT, C	PLOT, C	
Part Rated			CONTRO	PLOT, C	GREENSNAP	GREENSNAP	LODGIN	
Rating Type			%	%AREA	NUMBER	NUMBER	SCALE	
Rating Unit			0, 100, -	1 PLOT	1 PLOT	1 PLOT	1, 9, -	
Rating Min/Max/Interval			1 PLOT	C, ZEAMD	C, ZEAMD	C, ZEAMD	C, ZEAMD	
Collection Basis				Zea mays indent>	Zea mays indent>	Zea mays indent>	Zea mays indent>	
Crop Type, Code				Dent corn	Dent corn	Dent corn	Dent corn	
Crop Scientific Name								
Crop Name								
Pest Code			AMATU					
Pest Scientific Name			Amaranthus tube>					
Pest Name			tall waterhemp					
Rating Timing			AT HARVEST		V7-V8	R1	AT HARVEST	
ARM Action Codes			EC			EC		
Trt No.	Treatment	Rate	Appl	19*	12*	7*	13*	20*
	Name	Rate Unit	Code					
1	SHORT HYBRID NONTREATED			0.0	96.7 a	0.0 a	0.0	1.0 a
2	SHORT HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		93.0 b	89.0 cd	0.0 a	0.0 a	1.0 a
3	SHORT HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		98.0 a	83.0 d	0.0 a	0.0 a	1.0 a
4	SHORT HYBRID TRIVOLT AATREX LAUDIS AATREX ROUNDUP POWERMAX 3 AMSOL	20 fl oz/a A 1 qt/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	85.3 cd	0.0 a	0.0 a	1.0 a
5	SHORT HYBRID HARNESS XTRA BALANCE FLEXX CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	2 qt/a A 3 fl oz/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	86.0 cd	0.0 a	0.0 a	1.0 a
6	SHORT HYBRID ACURON ACURON ROUNDUP POWERMAX 3 AMSOL	1.5 qt/a A 1.5 qt/a B 30 fl oz/a B 2.5 % v/v B		99.0 a	87.3 cd	0.0 a	0.0 a	1.0 a
7	TALL HYBRID NONTREATED			0.0 d	96.3 ab	0.0 a	0.0 a	1.0 a
8	TALL HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		88.3 c	88.3 cd	0.0 a	0.0 a	1.0 a
9	TALL HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		98.3 a	87.3 cd	0.0 a	0.0 a	1.0 a

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

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	
Rating Date	Oct-8-2023	Jul-10-2023	Jun-26-2023	Jul-17-2023	Oct-8-2023	
SE Description		CANOPY COVER				
Part Rated	PLOT, C	PLOT, C	PLOT, C	PLOT, C	PLOT, C	
Rating Type	CONTRO	CANOPY	GREENSNAP	GREENSNAP	LODGIN	
Rating Unit	%	%AREA	NUMBER	NUMBER	SCALE	
Rating Min/Max/Interval	0, 100, -				1, 9, -	
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Crop Type, Code		C, ZEAMD	C, ZEAMD	C, ZEAMD	C, ZEAMD	
Crop Scientific Name		Zea mays indent>	Zea mays indent>	Zea mays indent>	Zea mays indent>	
Crop Name		Dent corn	Dent corn	Dent corn	Dent corn	
Pest Code						
Pest Scientific Name	AMATU					
Pest Name	Amaranthus tube>					
Pest Name	tall waterhemp					
Rating Timing	AT HARVEST		V7-V8	R1	AT HARVEST	
ARM Action Codes	EC			EC		
Trt Treatment		19*	12*	7*	13*	20*
No. Name	Rate Appl Rate Unit Code					
10 TALL HYBRID		99.0 a	89.7 bcd	0.0 a	0.0 a	1.0 a
TRIVOLT	20 fl oz/a A					
AATREX	1 qt/a A					
LAUDIS	3 fl oz/a B					
AATREX	0.5 qt/a B					
ROUNDUP POWERMAX 3	30 fl oz/a B					
AMSOL	2.5 % v/v B					
11 TALL HYBRID		99.0 a	88.3 cd	0.0 a	0.0 a	1.0 a
HARNESX XTRA	2 qt/a A					
BALANCE FLEXX	3 fl oz/a A					
CAPRENO	3 fl oz/a B					
AATREX	0.5 qt/a B					
ROUNDUP POWERMAX 3	30 fl oz/a B					
AMSOL	2.5 % v/v B					
12 TALL HYBRID		99.0 a	90.0 abc	0.0 a	0.0 a	1.0 a
ACURON	1.5 qt/a A					
ACURON	1.5 qt/a B					
ROUNDUP POWERMAX 3	30 fl oz/a B					
AMSOL	2.5 % v/v B					
LSD P=.05		3.79	6.80	.	.	.
Standard Deviation		2.23	4.02	0.00	0.00	0.00
CV		2.52	4.52	0.0	0.0	0.0
Levene's Prob(F)		0.282	0.884	.	.	.
P(Shapiro-Wilk)^		0.0*	0.6032	.	.	.
P(Skewness)^		0.0395*	0.5483	.	.	.
P(Kurtosis)^		0.0*	0.6632	.	.	.
Analyzed as		RCB	RCB	RCB	RCB	RCB
Replicate F		3.028	1.500	0.000	0.000	0.000
Replicate Prob(F)		0.0710	0.2452	1.0000	1.0000	1.0000
Treatment F		525.865	3.023	0.000	0.000	0.000
Treatment Prob(F)		0.0001	0.0131	1.0000	1.0000	1.0000

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Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By				Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Maia, Lucas
Rating Date				Oct-8-2023	Jul-24-2023	Jul-24-2023	Oct-8-2023
SE Description				PLOT, C	PLANT, C	PLANT, C	PLOT, C
Part Rated				LODGIN	EAR HEIGHT	PLT HEIGHT	YIELD
Rating Type				SCALE	cm	cm	bu/ac
Rating Unit				1, 9, -			
Rating Min/Max/Interval				1 PLOT	5 PLANT	5 PLANT	1 PLOT
Collection Basis				C, ZEAMD	C, ZEAMD	C, ZEAMD	C, ZEAMD
Crop Type, Code				Zea mays indent>	Zea mays indent>	Zea mays indent>	Zea mays indent>
Crop Scientific Name				Dent corn	Dent corn	Dent corn	Dent corn
Crop Name							
Pest Code							
Pest Scientific Name							
Pest Name							
Rating Timing				AT HARVEST	R1	R1	AT HARVEST
ARM Action Codes							
Trt No.	Treatment Name	Rate	Appl Code	21*	14*	15*	22*
		Rate Unit					
1	SHORT HYBRID NONTREATED			1.0 a	68.3 b	169.0 c	122.7 d
2	SHORT HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		1.0 a	67.3 b	175.5 bc	230.3 c
3	SHORT HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		1.0 a	70.2 b	176.0 bc	277.0 a
4	SHORT HYBRID TRIVOLT AATREX LAUDIS AATREX ROUNDUP POWERMAX 3 AMSOL	20 fl oz/a A 1 qt/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		1.0 a	71.2 b	179.1 bc	263.3 ab
5	SHORT HYBRID HARNESS XTRA BALANCE FLEXX CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	2 qt/a A 3 fl oz/a A 3 fl oz/a B 0.5 qt/a B 30 fl oz/a B 2.5 % v/v B		1.0 a	69.7 b	183.7 b	266.0 ab
6	SHORT HYBRID ACURON ACURON ROUNDUP POWERMAX 3 AMSOL	1.5 qt/a A 1.5 qt/a B 30 fl oz/a B 2.5 % v/v B		1.0 a	69.5 b	175.3 bc	288.3 a
7	TALL HYBRID NONTREATED			1.0 a	106.6 a	239.2 a	130.0 d
8	TALL HYBRID TRIVOLT AATREX	20 fl oz/a A 1 qt/a A		1.0 a	102.9 a	241.3 a	239.0 bc
9	TALL HYBRID CAPRENO AATREX ROUNDUP POWERMAX 3 AMSOL	3 fl oz/a B 1 qt/a B 30 fl oz/a B 2.5 % v/v B		1.0 a	104.4 a	240.5 a	269.0 ab

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\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

Assessed By	Zimmer, Marcelo	Zimmer, Marcelo	Zimmer, Marcelo	Maia, Lucas		
Rating Date	Oct-8-2023	Jul-24-2023	Jul-24-2023	Oct-8-2023		
SE Description						
Part Rated	PLOT, C	PLANT, C	PLANT, C	PLOT, C		
Rating Type	LODGIN	EAR HEIGHT	PLT HEIGHT	YIELD		
Rating Unit	SCALE	cm	cm	bu/ac		
Rating Min/Max/Interval	1, 9, -					
Collection Basis	1 PLOT	5 PLANT	5 PLANT	1 PLOT		
Crop Type, Code	C, ZEAMD	C, ZEAMD	C, ZEAMD	C, ZEAMD		
Crop Scientific Name	Zea mays indent>	Zea mays indent>	Zea mays indent>	Zea mays indent>		
Crop Name	Dent corn	Dent corn	Dent corn	Dent corn		
Pest Code						
Pest Scientific Name						
Pest Name						
Rating Timing	AT HARVEST	R1	R1	AT HARVEST		
ARM Action Codes						
Trt Treatment No. Name	Rate Rate Unit	Appl Code	21*	14*	15*	22*
10 TALL HYBRID TRIVOLT	20 fl oz/a	A	1.0 a	107.4 a	244.8 a	283.0 a
AATREX	1 qt/a	A				
LAUDIS	3 fl oz/a	B				
AATREX	0.5 qt/a	B				
ROUNDUP POWERMAX 3	30 fl oz/a	B				
AMSOL	2.5 % v/v	B				
11 TALL HYBRID HARNESS XTRA	2 qt/a	A	1.0 a	108.6 a	242.7 a	280.7 a
BALANCE FLEXX	3 fl oz/a	A				
CAPRENO	3 fl oz/a	B				
AATREX	0.5 qt/a	B				
ROUNDUP POWERMAX 3	30 fl oz/a	B				
AMSOL	2.5 % v/v	B				
12 TALL HYBRID ACURON	1.5 qt/a	A	1.0 a	105.5 a	237.8 a	276.7 a
ACURON	1.5 qt/a	B				
ROUNDUP POWERMAX 3	30 fl oz/a	B				
AMSOL	2.5 % v/v	B				
LSD P=.05	.			7.91	10.45	32.08
Standard Deviation	0.00			4.67	6.17	18.94
CV	0.0			5.33	2.96	7.77
Levene's Prob(F)	.			0.96	0.882	0.915
P(Shapiro-Wilk)^	.			0.0964	0.5092	0.163
P(Skewness)^	.			0.2613	0.7669	0.0441*
P(Kurtosis)^	.			0.4441	0.6481	0.072
Analyzed as	RCB			RCB	RCB	RCB
Replicate F	0.000			14.449	7.515	3.102
Replicate Prob(F)	1.0000			0.0001	0.0033	0.0650
Treatment F	0.000			50.433	90.796	27.666
Treatment Prob(F)	1.0000			0.0001	0.0001	0.0001

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

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Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 1,4,10,18,7,13,20,21 because error mean square = 0.

^Calculated from residual.

# Purdue Weed Science

## Short Corn Weed Control Systems

Trial ID: 23-TPAC-Corn-09  
Protocol ID: 23-TPAC-Corn-09 Location: Throckmorton-Purdue Ag Center Trial Year: 2023  
Study Director: Dr. Bill Johnson Sponsor Contact: John Schramski

Investigator: Dr. Bill Johnson

Assessed By

Zimmer, Marcelo = Marcelo Zimmer

Part Rated

PLOT = plot

PLANT = plant

C = Crop is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

CANOPY = canopy

LODGIN = lodging

YIELD = yield

Rating Unit

%, 0, 100, = percent

%AREA, , , = percent of area

NUMBER, , , = number

SCALE, 1, 9, = scale/index, min/max enabled, decimal interpolation possible

cm, , , = centimeter

bu/ac, , , = bushels per acre

PLOT = total plot

PLANT = plant/plant biomass/shrub

Crop Type, Code

C = EPPO species (Bayer) codes

ZEAMD, BCOR, Zea mays indentata, Dent corn = US

Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US

ECHCG, Echinochloa crus-galli, common barnyardgrass = US

CHEAL, Chenopodium album, common lambsquarters = US

AMATU, Amaranthus tuberculatus, tall waterhemp = US

ARM Action Codes

EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table