

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

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 °: 86.90846 W

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Dustin Johnson **Title:** Research Associate
Organization: Purdue University
Address: 915 W. State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** john1357@purdue.edu
Country: USA United States

Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address: 915 W. State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Country: USA United States

Cooperator/Landowner

Cooperator: Jay Young **Role:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S
City: Lafayette **Phone No.:** 765-538-3422
State/Prov: IN **Fax No.:** 765-538-3423
Postal Code: 47909
Country: USA United States **E-mail:** jayyoung@purdue.edu

Crop Description

Crop 1: ZEAMX Zea mays 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
Soil Temperature, Unit: 70 F **Emergence Date:** May-16-2017
Soil Moisture: DRY dry

Crop 2: ZEAMX Zea mays Corn
Variety: P1417AMX

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
Soil Temperature, Unit: 70 F **Emergence Date:** May-16-2017
Soil Moisture: DRY dry

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

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Site and Design

Treated Plot Width: 10 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 300 FT² **Treatments:** 16 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Study Design:** RACOBL Randomized Complete Block (RCB)

Field Prep./Maintenance:

171 lbs of N as UAN on 4/18/17

Soil Description

Description Name: TPAC- Field 4B
 % OM: 2.9 **Texture:** SIL silt loam
 pH: 6.2 **Soil Name:** Toronto-Millbrook
 CEC: 13.3

Application Description

	A	B	C
Application Date:	Apr-25-2017	May-22-2017	Jun-12-2017
Appl. Start Time:	2:50 PM	12:00 PM	9:20 AM
Appl. Stop Time:	3:30 PM	12:30 PM	9:25 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PREPLA	POSPOS	POSPOS
Application Placement:	BROADC	BROADC	BROADC
Applied By:	M. ZIMMER	J. HARMON	D. JOHNSON
Air Temperature, Unit:	78 F	64 F	83 F
% Relative Humidity:	44	50	59
Wind Velocity, Unit:	9 MPH	3 MPH	8 MPH
Wind Direction:	SSE	SW	SW
Dew Presence (Y/N):	N no	N no	N no
Soil Temperature, Unit:	70 F	66 F	79 F
Soil Moisture:	DRY	VERWET	SLIWET
% Cloud Cover:	40	70	70

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH	BBCH
Stage Majority, Percent:	0	11	16
Stage Minimum, Percent:		12	15
Stage Maximum, Percent:		13	17
Height, Unit:			10 IN
Height Minimum, Maximum:			8 12
Crop 2 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH	

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Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	00	33	14
Stage Minimum, Percent:	00	32	10
Stage Maximum, Percent:	00	34	18
Height, Unit:		3.5 IN	2.5 IN
Height Minimum, Maximum:		2 4	0.5 4.5
Density, Unit:		100 YD2	6 FT2
Pest 2 Code, Type, Scale:	ECHSS W	ECHSS W	ECHSS W
Stage Majority, Percent:	0	11	14
Stage Minimum, Percent:	0	11	12
Stage Maximum, Percent:	0	12	16
Height, Unit:		1.25 IN	1.5 IN
Height Minimum, Maximum:		0.5 2	0.5 3
Density, Unit:		100 YD2	

Application Equipment

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

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Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 liters (1.5642 liters calculated mix size)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Growth Stage	Appl Code	Amt to Measure	Rep 1	Rep 2	Rep 3	Rep 4
1	UNTREATED CHECK									101	306	604	805
2	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	102	305	508	806
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 oz/a		EAPOCR B		30.0 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
3	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	103	308	601	703
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	36 fl oz/a		EAPOCR B		33.75 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
4	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	104	407	606	804
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	43 fl oz/a		EAPOCR B		40.31 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
5	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	105	307	501	803
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a		EAPOCR B		30.0 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	AATREX	4	LB/GAL	L	2 pt/a		EAPOCR B		30.0 ml/mx				
6	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	106	406	504	801
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	36 fl oz/a		EAPOCR B		33.75 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	AATREX	4	LB/GAL	L	2 pt/a		EAPOCR B		30.0 ml/mx				
7	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	107	303	507	707
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	43 fl oz/a		EAPOCR B		40.31 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	AATREX	4	LB/GAL	L	2 pt/a		EAPOCR B		30.0 ml/mx				
8	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	108	408	506	705
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	22 fl oz/a		EAPOCR B		20.62 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	LAUDIS	3.5	LB/GAL	L	3 fl oz/a		EAPOCR B		2.812 ml/mx				
9	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	201	304	605	807
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a		EAPOCR B		30.0 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	LAUDIS	3.5	LB/GAL	L	3 fl oz/a		EAPOCR B		2.812 ml/mx				
10	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	202	403	602	808
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	43 fl oz/a		EAPOCR B		40.31 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	LAUDIS	3.5	LB/GAL	L	3 fl oz/a		EAPOCR B		2.812 ml/mx				
11	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	203	301	502	706
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	22 fl oz/a		EAPOCR B		20.62 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	DIFLEXX	4	LBAE/GAL	SC	10 fl oz/a		EAPOCR B		9.375 ml/mx				
12	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a		PREMCR A		2.812 ml/mx	204	405	608	702
	AATREX	4	LB/GAL	L	2 pt/a		PREMCR A		30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a		EAPOCR B		30.0 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v		EAPOCR B		45.0 ml/mx				
	DIFLEXX	4	LBAE/GAL	SC	10 fl oz/a		EAPOCR B		9.375 ml/mx				

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Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1.8 liters (1.5642 liters calculated mix size)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Growth Stage	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
13	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a	PREMCR	A	2.812 ml/mx	205	401	505	802
	AATREX	4	LB/GAL	L	2 pt/a	PREMCR	A	30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	43 fl oz/a	EAPOCR	B	40.31 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	EAPOCR	B	45.0 ml/mx				
	DIFLEXX	4	LBAE/GAL	SC	10 fl oz/a	EAPOCR	B	9.375 ml/mx				
14	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a	PREMCR	A	2.812 ml/mx	206	302	503	704
	AATREX	4	LB/GAL	L	2 pt/a	PREMCR	A	30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	22 fl oz/a	EAPOCR	B	20.62 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	EAPOCR	B	45.0 ml/mx				
	AATREX	4	LB/GAL	L	2 pt/a	EAPOCR	B	30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a	MIPOCR	C	30.0 ml/mx				
N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	MIPOCR	C	45.0 ml/mx					
15	BALANCE FLEXX	2	LB/GAL	L	3 fl oz/a	PREMCR	A	2.812 ml/mx	207	402	607	701
	AATREX	4	LB/GAL	L	2 pt/a	PREMCR	A	30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a	EAPOCR	B	30.0 ml/mx				
	N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	EAPOCR	B	45.0 ml/mx				
	AATREX	4	LB/GAL	L	2 pt/a	EAPOCR	B	30.0 ml/mx				
	LIBERTY 280 SL	2.34	LB/GAL	SL	32 fl oz/a	MIPOCR	C	30.0 ml/mx				
N-PAK AMS	3.4	LBA/GAL	L	2.5 % v/v	MIPOCR	C	45.0 ml/mx					
16	UNTREATED CHECK 2								208	404	603	708

Sort Order: Replicate 1

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
49.219	ml	BALANCE FLEXX	2	LB/GAL	L	SP102000014305
712.499	ml	AATREX	4	LB/GAL	L	AEFDQM_970313066
625.781	ml	LIBERTY 280 SL	2.34	LB/GAL	SL	SP102000019730
899.902	ml	N-PAK AMS	3.4	LBA/GAL	L	AEFDQM_970313105
10.547	ml	LAUDIS	3.5	LB/GAL	L	AE 0172747 02 SC52 A1
35.156	ml	DIFLEXX	4	LBAE/GAL	SC	SP102000028522

* '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

4/25/17
 Planted 2-Corn Varieties
 Facing stake:
 DK62-08- 2 left rows
 Pioneer-2 right rows

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 Sponsor Contact: A. Kurtz - Bayer

Pest Type	ZEAMX		W Weed		W Weed	
Pest Code	Corn-Dekalb		Giant ragweed		Barnyardgrass	
Pest Name	Corn-Pioneer		ZEAMX		ZEAMX	
Crop Code	Corn		ZEAMX		ZEAMX	
Crop Name	Corn		Corn		Corn	
Part Rated	PLOT -		PLOT -		PLOT -	
Rating Date	May-22-2017		May-22-2017		May-30-2017	
Rating Type	PHYGEN		CONTROL		PHYGEN	
Rating Unit	%		%		%	
Number of Subsamples	1		1		1	
Assessed By	J. IKLEY		J. IKLEY		J. IKLEY	
Rating Timing	A1		A1		A2	
Days After First/Last Applic.	27 27		27 27		35 8	
Days After Emergence	6 DE-1		6 DE-1		14 DE-1	
ARM Action Codes	P		P		P	
Number of Decimals	0		0		0	
Trt Treatment	Rate	Appl	3		5	
No. Name	Rate	Unit Code	1	2	4	6
1 UNTREATED CHECK			0 a	0 a	0 b	0 a
2 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	94 a	0 a
AATREX	2 pt/a	A			86 a	0 a
LIBERTY 280 SL	32 oz/a	B				
N-PAK AMS	2.5 % v/v	B				
3 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	87 a	0 a
AATREX	2 pt/a	A			90 a	0 a
LIBERTY 280 SL	36 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
4 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	89 a	0 a
AATREX	2 pt/a	A			88 a	0 a
LIBERTY 280 SL	43 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
5 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	89 a	0 a
AATREX	2 pt/a	A			86 a	0 a
LIBERTY 280 SL	32 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
AATREX	2 pt/a	B				
6 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	95 a	0 a
AATREX	2 pt/a	A			94 a	0 a
LIBERTY 280 SL	36 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
AATREX	2 pt/a	B				
7 BALANCE FLEXX	3 fl oz/a	A	1 a	0 a	92 a	1 a
AATREX	2 pt/a	A			66 a	1 a
LIBERTY 280 SL	43 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
AATREX	2 pt/a	B				
8 BALANCE FLEXX	3 fl oz/a	A	0 a	0 a	92 a	0 a
AATREX	2 pt/a	A			64 a	0 a
LIBERTY 280 SL	22 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
LAUDIS	3 fl oz/a	B				
9 BALANCE FLEXX	3 fl oz/a	A	1 a	0 a	88 a	1 a
AATREX	2 pt/a	A			90 a	1 a
LIBERTY 280 SL	32 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
LAUDIS	3 fl oz/a	B				
10 BALANCE FLEXX	3 fl oz/a	A	4 a	0 a	90 a	0 a
AATREX	2 pt/a	A			98 a	0 a
LIBERTY 280 SL	43 fl oz/a	B				
N-PAK AMS	2.5 % v/v	B				
LAUDIS	3 fl oz/a	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: Yates=1,2,3,4
 Could not calculate LSD (% mean diff) for columns 9,10 because error mean square = 0.

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Project ID: HP17USAWGIUEFI	Study Director: Dustin Johnson	
Sponsor Contact: A. Kurtz - Bayer		

Pest Type	ZEAMX Corn-Dekalb		ZEAMX Corn-Pioneer		W Weed AMBTR Giant ragweed	W Weed ECHSS Barnyardgrass	ZEAMX Corn-Dekalb	ZEAMX Corn-Pioneer
Pest Code	PLOT -		PLOT -		PLOT -	PLOT -	PLOT -	PLOT -
Pest Name	May-22-2017		May-22-2017		May-22-2017	May-22-2017	May-30-2017	May-30-2017
Crop Code	PHYGEN		PHYGEN		CONTROL	CONTROL	PHYGEN	PHYGEN
Crop Name	%		%		%	%	%	%
Part Rated	1		1		1	1	1	1
Rating Date	J. IKLEY		J. IKLEY		J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY
Rating Type	A1		A1		A1	A1	A2	A2
Rating Unit	27 27		27 27		27 27	27 27	35 8	35 8
Number of Subsamples	6 DE-1		6 DE-1		6 DE-1	6 DE-1	14 DE-1	14 DE-1
Assessed By	P		P		P	P	P	P
Rating Timing	0		0		0	0	0	0
Days After First/Last Applic.								
Days After Emergence								
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	1	2	3	4	5	6
11 BALANCE FLEXX	3 fl oz/a A		1 a	0 a	80 a	90 a	0 a	1 a
AATREX	2 pt/a A							
LIBERTY 280 SL	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
12 BALANCE FLEXX	3 fl oz/a A		1 a	0 a	92 a	93 a	0 a	0 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
13 BALANCE FLEXX	3 fl oz/a A		2 a	2 a	88 a	91 a	1 a	1 a
AATREX	2 pt/a A							
LIBERTY 280 SL	43 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
14 BALANCE FLEXX	3 fl oz/a A		3 a	0 a	88 a	100 a	0 a	1 a
AATREX	2 pt/a A							
LIBERTY 280 SL	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
15 BALANCE FLEXX	3 fl oz/a A		1 a	0 a	86 a	75 a	1 a	1 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
16 UNTREATED CHECK 2			0 a	0 a	0 b	0 b	0 a	0 a
LSD P=.05	2.7		2.7	0.9	10.4	25.2	1.5	1.4
Standard Deviation	1.9		1.9	0.6	7.3	17.7	1.0	1.0
CV	251.42		251.42	600.02	9.33	23.36	327.9	337.13
Bartlett's X2	1.85		1.85	0.0	6.945	21.304	3.192	5.858
P(Bartlett's X2)	0.604		0.604	.	0.861	0.046*	0.526	0.32
Skewness	3.7146*		3.7146*	7.6811*	-2.0607*	-1.4217*	3.6736*	3.7387*
Kurtosis	13.5551*		13.5551*	59.0*	2.7443*	0.6086	12.5009*	14.008*
Replicate F	5.620		5.620	0.889	0.848	1.068	5.952	2.719
Replicate Prob(F)	0.0026		0.0026	0.4552	0.4749	0.3726	0.0017	0.0556
Treatment F	1.477		1.477	1.778	70.995	12.457	1.000	0.806
Treatment Prob(F)	0.1605		0.1605	0.0739	0.0001	0.0001	0.4718	0.6653

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 Missing data estimates are included in columns: Yates=1,2,3,4
 Could not calculate LSD (% mean diff) for columns 9,10 because error mean square = 0.

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIUEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed			W Weed	W Weed		
Pest Code	AMBTR	ECHSS			AMBTR	ECHSS		
Pest Name	Giant ragweed	Barnyardgrass			Giant ragweed	Barnyardgrass		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn	Corn-Dekalb	Corn-Pioneer	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	May-30-2017	May-30-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017		
Rating Type	CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	J. IKLEY	J. IKLEY	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON		
Rating Timing	A2	A2	A3	A3	A3	A3		
Days After First/Last Applic.	35 8	35 8	48 21	48 21	48 21	48 21		
Days After Emergence	14 DE-1	14 DE-1	27 DE-1	27 DE-1	27 DE-1	27 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	7	8	9	10	11	12
1 UNTREATED CHECK			0 b	0 b	0 a	0 a	0 c	0 b
2 BALANCE FLEXX	3 fl oz/a A		96 a	93 a	0 a	0 a	74 ab	50 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 oz/a B							
N-PAK AMS	2.5 % v/v B							
3 BALANCE FLEXX	3 fl oz/a A		94 a	93 a	0 a	0 a	66 b	39 a
AATREX	2 pt/a A							
LIBERTY 280 SL	36 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
4 BALANCE FLEXX	3 fl oz/a A		94 a	93 a	0 a	0 a	74 ab	48 a
AATREX	2 pt/a A							
LIBERTY 280 SL	43 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
5 BALANCE FLEXX	3 fl oz/a A		94 a	95 a	0 a	0 a	80 ab	63 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
6 BALANCE FLEXX	3 fl oz/a A		95 a	95 a	0 a	0 a	81 ab	58 a
AATREX	2 pt/a A							
LIBERTY 280 SL	36 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
7 BALANCE FLEXX	3 fl oz/a A		94 a	96 a	0 a	0 a	78 ab	58 a
AATREX	2 pt/a A							
LIBERTY 280 SL	43 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
8 BALANCE FLEXX	3 fl oz/a A		93 a	91 a	0 a	0 a	78 ab	33 a
AATREX	2 pt/a A							
LIBERTY 280 SL	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
LAUDIS	3 fl oz/a B							
9 BALANCE FLEXX	3 fl oz/a A		92 a	95 a	0 a	0 a	76 ab	66 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
LAUDIS	3 fl oz/a B							
10 BALANCE FLEXX	3 fl oz/a A		93 a	98 a	0 a	0 a	76 ab	65 a
AATREX	2 pt/a A							
LIBERTY 280 SL	43 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
LAUDIS	3 fl oz/a B							

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Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20	Location: TPAC Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-20	Investigator: Dr. Bill Johnson
Project ID: HP17USAWGIEUFI	Study Director: Dustin Johnson
	Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed	ZEAMX	ZEAMX	W Weed	W Weed		
Pest Code	AMBTR	ECHSS			AMBTR	ECHSS		
Pest Name	Giant ragweed	Barnyardgrass			Giant ragweed	Barnyardgrass		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn	Corn-Dekalb	Corn-Pioneer	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	May-30-2017	May-30-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017		
Rating Type	CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	J. IKLEY	J. IKLEY	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON		
Rating Timing	A2	A2	A3	A3	A3	A3		
Days After First/Last Applic.	35 8	35 8	48 21	48 21	48 21	48 21		
Days After Emergence	14 DE-1	14 DE-1	27 DE-1	27 DE-1	27 DE-1	27 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	7	8	9	10	11	12
11 BALANCE FLEXX	3 fl oz/a A		94 a	95 a	0 a	0 a	81 ab	63 a
AATREX	2 pt/a A							
LIBERTY 280 SL	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
12 BALANCE FLEXX	3 fl oz/a A		97 a	95 a	0 a	0 a	91 a	58 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
13 BALANCE FLEXX	3 fl oz/a A		97 a	95 a	0 a	0 a	91 a	61 a
AATREX	2 pt/a A							
LIBERTY 280 SL	43 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
DIFLEXX	10 fl oz/a B							
14 BALANCE FLEXX	3 fl oz/a A		95 a	95 a	0 a	0 a	80 ab	64 a
AATREX	2 pt/a A							
LIBERTY 280 SL	22 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
15 BALANCE FLEXX	3 fl oz/a A		92 a	91 a	0 a	0 a	76 ab	65 a
AATREX	2 pt/a A							
LIBERTY 280 SL	32 fl oz/a B							
N-PAK AMS	2.5 % v/v B							
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
16 UNTREATED CHECK 2			0 b	0 b	0 a	0 a	0 c	0 b
LSD P=.05			3.8	6.2	.	.	12.4	23.7
Standard Deviation			2.6	4.4	0.0	0.0	8.7	16.6
CV			3.21	5.3	0.0	0.0	12.66	33.83
Bartlett's X2			7.618	11.473	0.0	0.0	13.306	7.953
P(Bartlett's X2)			0.868	0.571	.	.	0.424	0.847
Skewness			-2.2635*	-2.1797*	.	.	-1.6503*	0.1346
Kurtosis			3.3431*	3.1025*	.	.	1.7051*	-1.4369*
Replicate F			17.497	18.318	0.000	0.000	11.477	35.794
Replicate Prob(F)			0.0001	0.0001	1.0000	1.0000	0.0001	0.0001
Treatment F			594.246	217.757	0.000	0.000	39.936	6.666
Treatment Prob(F)			0.0001	0.0001	1.0000	1.0000	0.0001	0.0001

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Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIUEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	ZEAMX		W Weed	W Weed	W Weed	W Weed		
Pest Code	ZEAMX		AMBTR	ECHSS	SETPU	SETFA		
Pest Name	Corn-Dekalb		Giant ragweed	Barnyardgrass	yellow foxtail	Giant foxtail		
Crop Code	Corn-Pioneer		ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn		Corn	Corn	Corn	Corn		
Part Rated	PLOT -		PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	Jun-19-2017		Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017		
Rating Type	PHYGEN		CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit	%		%	%	%	%		
Number of Subsamples	1		1	1	1	1		
Assessed By	D. JOHNSON		D. JOHNSON	M. ZIMMER	M. ZIMMER	M. ZIMMER		
Rating Timing	A4		A4	A4	A4	A4		
Days After First/Last Applic.	55 7		55 7	55 7	55 7	55 7		
Days After Emergence	34 DE-1		34 DE-1	34 DE-1	34 DE-1	34 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	13	14	15	16	17	18
1 UNTREATED CHECK			0 b	0 b	0 d	0 b	0 b	0 c
2 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	54 bc	20 b	20 b	15 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	32 oz/a	B						
N-PAK AMS	2.5 % v/v	B						
3 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	34 c	18 b	20 b	13 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	36 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
4 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	41 c	23 b	23 b	20 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	43 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
5 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	51 bc	45 ab	43 ab	40 bc
AATREX	2 pt/a	A						
LIBERTY 280 SL	32 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
AATREX	2 pt/a	B						
6 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	54 bc	40 ab	40 ab	33 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	36 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
AATREX	2 pt/a	B						
7 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	51 bc	24 b	24 b	22 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	43 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
AATREX	2 pt/a	B						
8 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	56 bc	0 b	0 b	0 c
AATREX	2 pt/a	A						
LIBERTY 280 SL	22 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
LAUDIS	3 fl oz/a	B						
9 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	58 bc	50 ab	50 ab	47 bc
AATREX	2 pt/a	A						
LIBERTY 280 SL	32 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
LAUDIS	3 fl oz/a	B						
10 BALANCE FLEXX	3 fl oz/a	A	1 b	1 b	50 bc	63 ab	66 ab	58 abc
AATREX	2 pt/a	A						
LIBERTY 280 SL	43 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
LAUDIS	3 fl oz/a	B						

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Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type			W Weed	W Weed	W Weed	W Weed		
Pest Code			AMBTR	ECHSS	SETPU	SETFA		
Pest Name			Giant ragweed	Barnyardgrass	yellow foxtail	Giant foxtail		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn-Dekalb	Corn-Pioneer	Corn	Corn	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017		
Rating Type	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER	M. ZIMMER	M. ZIMMER		
Rating Timing	A4	A4	A4	A4	A4	A4		
Days After First/Last Applic.	55 7	55 7	55 7	55 7	55 7	55 7		
Days After Emergence	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 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	13	14	15	16	17	18
11 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	55 bc	48 ab	48 ab	43 bc
AATREX	2 pt/a	A						
LIBERTY 280 SL	22 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
DIFLEXX	10 fl oz/a	B						
12 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	82 ab	46 ab	44 ab	41 bc
AATREX	2 pt/a	A						
LIBERTY 280 SL	32 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
DIFLEXX	10 fl oz/a	B						
13 BALANCE FLEXX	3 fl oz/a	A	0 b	0 b	80 ab	44 ab	46 ab	43 bc
AATREX	2 pt/a	A						
LIBERTY 280 SL	43 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
DIFLEXX	10 fl oz/a	B						
14 BALANCE FLEXX	3 fl oz/a	A	2 a	2 ab	93 a	97 a	97 a	95 ab
AATREX	2 pt/a	A						
LIBERTY 280 SL	22 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
AATREX	2 pt/a	B						
LIBERTY 280 SL	32 fl oz/a	C						
N-PAK AMS	2.5 % v/v	C						
15 BALANCE FLEXX	3 fl oz/a	A	2 a	2 a	95 a	98 a	98 a	98 a
AATREX	2 pt/a	A						
LIBERTY 280 SL	32 fl oz/a	B						
N-PAK AMS	2.5 % v/v	B						
AATREX	2 pt/a	B						
LIBERTY 280 SL	32 fl oz/a	C						
N-PAK AMS	2.5 % v/v	C						
16 UNTREATED CHECK 2			0 b	0 b	0 d	0 b	0 b	0 c
LSD P=.05			0.8	0.9	21.7	39.6	40.3	36.3
Standard Deviation			0.5	0.6	15.2	27.8	28.3	25.5
CV			169.5	239.44	28.47	72.57	73.39	72.1
Bartlett's X2			3.236	2.224	39.537	32.901	32.764	30.165
P(Bartlett's X2)			0.198	0.329	0.001*	0.001*	0.001*	0.003*
Skewness			2.5195*	3.7654*	-0.416	0.3861	0.3827	0.4735
Kurtosis			4.8518*	16.3561*	-1.094	-1.7886*	-1.8029*	-1.6597*
Replicate F			1.040	0.451	10.262	15.164	14.760	14.223
Replicate Prob(F)			0.3842	0.7181	0.0001	0.0001	0.0001	0.0001
Treatment F			7.663	4.241	12.840	4.674	4.535	5.464
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Trt No.	Treatment Name	Rate	Appl Unit	Code	19	20	21	22
1	UNTREATED CHECK				0 d	0 b	0 b	0 b
2	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS	3 fl oz/a 2 pt/a 32 oz/a 2.5 % v/v	A A B B		33 cd	10 b	10 b	5 b
3	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS	3 fl oz/a 2 pt/a 36 fl oz/a 2.5 % v/v	A A B B		11 cd	13 b	15 b	13 b
4	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS	3 fl oz/a 2 pt/a 43 fl oz/a 2.5 % v/v	A A B B		13 cd	18 b	18 b	15 b
5	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS AATREX	3 fl oz/a 2 pt/a 32 fl oz/a 2.5 % v/v 2 pt/a	A A B B B		39 c	31 b	34 b	31 b
6	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS AATREX	3 fl oz/a 2 pt/a 36 fl oz/a 2.5 % v/v 2 pt/a	A A B B B		28 cd	25 b	24 b	16 b
7	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS AATREX	3 fl oz/a 2 pt/a 43 fl oz/a 2.5 % v/v 2 pt/a	A A B B B		31 cd	20 b	20 b	19 b
8	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS LAUDIS	3 fl oz/a 2 pt/a 22 fl oz/a 2.5 % v/v 3 fl oz/a	A A B B B		25 cd	0 b	0 b	0 b
9	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS LAUDIS	3 fl oz/a 2 pt/a 32 fl oz/a 2.5 % v/v 3 fl oz/a	A A B B B		29 cd	41 ab	41 ab	39 b
10	BALANCE FLEXX AATREX LIBERTY 280 SL N-PAK AMS LAUDIS	3 fl oz/a 2 pt/a 43 fl oz/a 2.5 % v/v 3 fl oz/a	A A B B B		25 cd	40 ab	40 ab	38 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: Yates=1,2,3,4
 Could not calculate LSD (% mean diff) for columns 9,10 because error mean square = 0.

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20
 Protocol ID: 17S-TPAC-CORN-20
 Project ID: HP17USAWGIEFI

Location: TPAC Trial Year: 2017
 Investigator: Dr. Bill Johnson
 Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	ECHSS	SETPU	SETFA
Pest Name	Giant ragweed	Barnyardgrass	yellow foxtail	Giant foxtail
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jul-3-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A5	A5	A5	A5
Days After First/Last Applic.	69 21	69 21	69 21	69 21
Days After Emergence	48 DE-1	48 DE-1	48 DE-1	48 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	19	20
11 BALANCE FLEXX	3 fl oz/a A		30 cd	40 ab
AATREX	2 pt/a A			
LIBERTY 280 SL	22 fl oz/a B			
N-PAK AMS	2.5 % v/v B			
DIFLEXX	10 fl oz/a B			35 b
12 BALANCE FLEXX	3 fl oz/a A		74 ab	29 b
AATREX	2 pt/a A			
LIBERTY 280 SL	32 fl oz/a B			
N-PAK AMS	2.5 % v/v B			
DIFLEXX	10 fl oz/a B			28 b
13 BALANCE FLEXX	3 fl oz/a A		60 b	38 ab
AATREX	2 pt/a A			
LIBERTY 280 SL	43 fl oz/a B			
N-PAK AMS	2.5 % v/v B			
DIFLEXX	10 fl oz/a B			40 ab
14 BALANCE FLEXX	3 fl oz/a A		86 a	84 a
AATREX	2 pt/a A			
LIBERTY 280 SL	22 fl oz/a B			
N-PAK AMS	2.5 % v/v B			
AATREX	2 pt/a B			
LIBERTY 280 SL	32 fl oz/a C			
N-PAK AMS	2.5 % v/v C			84 a
15 BALANCE FLEXX	3 fl oz/a A		90 a	84 a
AATREX	2 pt/a A			
LIBERTY 280 SL	32 fl oz/a B			
N-PAK AMS	2.5 % v/v B			
AATREX	2 pt/a B			
LIBERTY 280 SL	32 fl oz/a C			
N-PAK AMS	2.5 % v/v C			84 a
16 UNTREATED CHECK 2			0 d	0 b
LSD P=.05			20.3	31.9
Standard Deviation			14.3	22.4
CV			39.92	76.07
Bartlett's X2			28.869	21.934
P(Bartlett's X2)			0.007*	0.038*
Skewness			0.4375	0.5775
Kurtosis			-1.0959	-1.5731*
Replicate F			9.393	16.359
Replicate Prob(F)			0.0001	0.0001
Treatment F			15.135	5.232
Treatment Prob(F)			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: Yates=1,2,3,4
 Could not calculate LSD (% mean diff) for columns 9,10 because error mean square = 0.

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20	Location: TPAC Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-20	Investigator: Dr. Bill Johnson
Project ID: HP17USAWGIUEFI	Study Director: Dustin Johnson
	Sponsor Contact: A. Kurtz - Bayer

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

SETPU, Setaria pumila, yellow foxtail = US

SETFA, Setaria faberi, Giant foxtail = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn-Dekalb = US

ZEAMX, BCOR, Zea mays, Corn-Pioneer = US

ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

Rating Timing

A1 = 1st Assessment According to Trial Schedule

A2 = 2nd Assessment According to trial Schedule

A3 = 3rd Assessment According to Trial Schedule

A4 = 4th Assessment According to Trial Schedule

A5 = 5th Assessment According to Trial Schedule

ARM Action Codes

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

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIUEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type			W Weed	W Weed				
Pest Code			AMBTR	ECHSS				
Pest Name			Giant ragweed	Barnyardgrass				
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn-Dekalb	Corn-Pioneer	Corn	Corn	Corn-Dekalb	Corn-Pioneer		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	May-22-2017	May-22-2017	May-22-2017	May-22-2017	May-30-2017	May-30-2017		
Rating Type	PHYGEN	PHYGEN	CONTROL	CONTROL	PHYGEN	PHYGEN		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY		
Rating Timing	A1	A1	A1	A1	A2	A2		
Days After First/Last Applic.	27 27	27 27	27 27	27 27	35 8	35 8		
Days After Emergence	6 DE-1	6 DE-1	6 DE-1	6 DE-1	14 DE-1	14 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 Plot	1	2	3	4	5	6
1 UNTREATED CHECK		101	0	0	0	0	0	0
		306	0	0	0	0	0	0
		604	0	0	0	0	0	0
		805	0	0	0	0	0	0
	Mean =		0	0	0	0	0	0
2 BALANCE FLEXX	3 fl oz/a A	102	0	0	85	100	0	0
AATREX	2 pt/a A	305	0	0	95	100	0	0
LIBERTY 280 SL	32 oz/a B	508	0	0	100	60	0	0
N-PAK AMS	2.5 % v/v B	806	0	0	95	85	0	0
	Mean =		0	0	94	86	0	0
3 BALANCE FLEXX	3 fl oz/a A	103	0	0	85	100	0	0
AATREX	2 pt/a A	308	0	0	97	60	0	0
LIBERTY 280 SL	36 fl oz/a B	601	0	0	85	100	0	0
N-PAK AMS	2.5 % v/v B	703	0	0	80	100	0	0
	Mean =		0	0	87	90	0	0
4 BALANCE FLEXX	3 fl oz/a A	104	0	0	97	100	0	0
AATREX	2 pt/a A	407	0	0	97	80	0	0
LIBERTY 280 SL	43 fl oz/a B	606	0	0	80	80	0	0
N-PAK AMS	2.5 % v/v B	804	0	0	80	90	0	0
	Mean =		0	0	89	88	0	0
5 BALANCE FLEXX	3 fl oz/a A	105	0	0	99	100	0	0
AATREX	2 pt/a A	307	0	0	97	90	0	0
LIBERTY 280 SL	32 fl oz/a B	501	0	0	80	70	0	0
N-PAK AMS	2.5 % v/v B	803	0	0	80	85	0	0
AATREX	2 pt/a B							
	Mean =		0	0	89	86	0	0
6 BALANCE FLEXX	3 fl oz/a A	106	0	0	99	100	0	0
AATREX	2 pt/a A	406	0	0	97	90	0	0
LIBERTY 280 SL	36 fl oz/a B	504	0	0	95	90	0	0
N-PAK AMS	2.5 % v/v B	801	0	0	90	95	0	0
AATREX	2 pt/a B							
	Mean =		0	0	95	94	0	0
7 BALANCE FLEXX	3 fl oz/a A	107	0	0	90	20	0	0
AATREX	2 pt/a A	303	2*	0*	85	100	3	2
LIBERTY 280 SL	43 fl oz/a B	507	0	0	97	65	0	0
N-PAK AMS	2.5 % v/v B	707	0	0	95	80	0	0
AATREX	2 pt/a B							
	Mean =		1	0	92	66	1	1
8 BALANCE FLEXX	3 fl oz/a A	108	0	0	90	30	0	0
AATREX	2 pt/a A	408	0	0	99	75	0	0
LIBERTY 280 SL	22 fl oz/a B	506	0	0	90	70	0	0
N-PAK AMS	2.5 % v/v B	705	0	0	90	80	0	0
LAUDIS	3 fl oz/a B							
	Mean =		0	0	92	64	0	0
9 BALANCE FLEXX	3 fl oz/a A	201	0	0	95	100	0	0
AATREX	2 pt/a A	304	2*	0*	95	100	2	2
LIBERTY 280 SL	32 fl oz/a B	605	0	0	70	80	0	0
N-PAK AMS	2.5 % v/v B	807	0	0	90	80	0	0
LAUDIS	3 fl oz/a B							
	Mean =		1	0	88	90	1	1

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type			W Weed	W Weed				
Pest Code			AMBTR	ECHSS				
Pest Name			Giant ragweed	Barnyardgrass				
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn-Dekalb	Corn-Pioneer	Corn	Corn	Corn-Dekalb	Corn-Pioneer		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	May-22-2017	May-22-2017	May-22-2017	May-22-2017	May-30-2017	May-30-2017		
Rating Type	PHYGEN	PHYGEN	CONTROL	CONTROL	PHYGEN	PHYGEN		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY	J. IKLEY		
Rating Timing	A1	A1	A1	A1	A2	A2		
Days After First/Last Applic.	27 27	27 27	27 27	27 27	35 8	35 8		
Days After Emergence	6 DE-1	6 DE-1	6 DE-1	6 DE-1	14 DE-1	14 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 Plot	1	2	3	4	5	6
10 BALANCE FLEXX	3 fl oz/a A	202	5	0	95	100	0	0
AATREX	2 pt/a A	403	10	0	80	100	5	0
LIBERTY 280 SL	43 fl oz/a B	602	0	0	85	100	0	0
N-PAK AMS	2.5 % v/v B	808	0	0	100	90	0	0
LAUDIS	3 fl oz/a B							
	Mean =		4	0	90	98	1	0
11 BALANCE FLEXX	3 fl oz/a A	203	0	0	80	100	0	2
AATREX	2 pt/a A	301	2*	0*	80*	95*	0	0
LIBERTY 280 SL	22 fl oz/a B	502	0	0	80	95	0	0
N-PAK AMS	2.5 % v/v B	706	0	0	80	70	0	0
DIFLEXX	10 fl oz/a B							
	Mean =		1	0	80	90	0	1
12 BALANCE FLEXX	3 fl oz/a A	204	0	0	90	100	0	0
AATREX	2 pt/a A	405	5	0	97	100	0	0
LIBERTY 280 SL	32 fl oz/a B	608	0	0	95	70	0	0
N-PAK AMS	2.5 % v/v B	702	0	0	85	100	0	0
DIFLEXX	10 fl oz/a B							
	Mean =		1	0	92	93	0	0
13 BALANCE FLEXX	3 fl oz/a A	205	5	5	95	100	0	0
AATREX	2 pt/a A	401	4*	2*	75	100	5	5
LIBERTY 280 SL	43 fl oz/a B	505	0	0	90	70	0	0
N-PAK AMS	2.5 % v/v B	802	0	0	90	95	0	0
DIFLEXX	10 fl oz/a B							
	Mean =		2	2	88	91	1	1
14 BALANCE FLEXX	3 fl oz/a A	206	0	0	95	100	0	3
AATREX	2 pt/a A	302	10	0	80	100	0	0
LIBERTY 280 SL	22 fl oz/a B	503	0	0	95	100	0	0
N-PAK AMS	2.5 % v/v B	704	0	0	80	100	0	0
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
	Mean =		3	0	88	100	0	1
15 BALANCE FLEXX	3 fl oz/a A	207	0	0	90	20	0	0
AATREX	2 pt/a A	402	2*	0*	75	100	5	5
LIBERTY 280 SL	32 fl oz/a B	607	0	0	90	80	0	0
N-PAK AMS	2.5 % v/v B	701	0	0	90	100	0	0
AATREX	2 pt/a B							
LIBERTY 280 SL	32 fl oz/a C							
N-PAK AMS	2.5 % v/v C							
	Mean =		1	0	86	75	1	1
16 UNTREATED CHECK 2		208	0	0	0	0	0	0
		404	0	0	0	0	0	0
		603	0	0	0	0	0	0
		708	0	0	0	0	0	0
	Mean =		0	0	0	0	0	0

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed			W Weed
Pest Code	AMBTR	ECHSS			AMBTR
Pest Name	Giant ragweed	Barnyardgrass			Giant ragweed
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn-Dekalb	Corn-Pioneer	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	May-30-2017	May-30-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017
Rating Type	CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	J. IKLEY	J. IKLEY	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A2	A2	A3	A3	A3
Days After First/Last Applic.	35 8	35 8	48 21	48 21	48 21
Days After Emergence	14 DE-1	14 DE-1	27 DE-1	27 DE-1	27 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	7	8	9
1 UNTREATED CHECK		101	0	0	0
		306	0	0	0
		604	0	0	0
		805	0	0	0
		Mean =	0	0	0
2 BALANCE FLEXX	3 fl oz/a A	102	95	100	0
AATREX	2 pt/a A	305	99	100	0
LIBERTY 280 SL	32 oz/a B	508	95	85	0
N-PAK AMS	2.5 % v/v B	806	95	85	0
		Mean =	96	93	0
3 BALANCE FLEXX	3 fl oz/a A	103	97	100	0
AATREX	2 pt/a A	308	99	90	0
LIBERTY 280 SL	36 fl oz/a B	601	90	90	0
N-PAK AMS	2.5 % v/v B	703	90	90	0
		Mean =	94	93	0
4 BALANCE FLEXX	3 fl oz/a A	104	97	100	0
AATREX	2 pt/a A	407	97	90	0
LIBERTY 280 SL	43 fl oz/a B	606	90	90	0
N-PAK AMS	2.5 % v/v B	804	90	90	0
		Mean =	94	93	0
5 BALANCE FLEXX	3 fl oz/a A	105	97	100	0
AATREX	2 pt/a A	307	99	100	0
LIBERTY 280 SL	32 fl oz/a B	501	90	90	0
N-PAK AMS	2.5 % v/v B	803	90	90	0
AATREX	2 pt/a B				
		Mean =	94	95	0
6 BALANCE FLEXX	3 fl oz/a A	106	99	100	0
AATREX	2 pt/a A	406	99	100	0
LIBERTY 280 SL	36 fl oz/a B	504	90	90	0
N-PAK AMS	2.5 % v/v B	801	90	90	0
AATREX	2 pt/a B				
		Mean =	95	95	0
7 BALANCE FLEXX	3 fl oz/a A	107	95	100	0
AATREX	2 pt/a A	303	95	100	0
LIBERTY 280 SL	43 fl oz/a B	507	95	95	0
N-PAK AMS	2.5 % v/v B	707	90	90	0
AATREX	2 pt/a B				
		Mean =	94	96	0
8 BALANCE FLEXX	3 fl oz/a A	108	95	95	0
AATREX	2 pt/a A	408	97	90	0
LIBERTY 280 SL	22 fl oz/a B	506	95	90	0
N-PAK AMS	2.5 % v/v B	705	85	90	0
LAUDIS	3 fl oz/a B				
		Mean =	93	91	0
9 BALANCE FLEXX	3 fl oz/a A	201	97	100	0
AATREX	2 pt/a A	304	97	100	0
LIBERTY 280 SL	32 fl oz/a B	605	85	90	0
N-PAK AMS	2.5 % v/v B	807	90	90	0
LAUDIS	3 fl oz/a B				
		Mean =	92	95	0

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIUEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed			W Weed
Pest Code	AMBTR	ECHSS			AMBTR
Pest Name	Giant ragweed	Barnyardgrass			Giant ragweed
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn	Corn-Dekalb	Corn-Pioneer	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	May-30-2017	May-30-2017	Jun-12-2017	Jun-12-2017	Jun-12-2017
Rating Type	CONTROL	CONTROL	PHYGEN	PHYGEN	CONTROL
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	J. IKLEY	J. IKLEY	D. JOHNSON	D. JOHNSON	D. JOHNSON
Rating Timing	A2	A2	A3	A3	A3
Days After First/Last Applic.	35 8	35 8	48 21	48 21	48 21
Days After Emergence	14 DE-1	14 DE-1	27 DE-1	27 DE-1	27 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	7	8	9
10 BALANCE FLEXX	3 fl oz/a A	202	97	100	0
AATREX	2 pt/a A	403	90	100	0
LIBERTY 280 SL	43 fl oz/a B	602	90	100	0
N-PAK AMS	2.5 % v/v B	808	95	90	0
LAUDIS	3 fl oz/a B				
	Mean =		93	98	0
11 BALANCE FLEXX	3 fl oz/a A	203	97	100	0
AATREX	2 pt/a A	301	97	100	0
LIBERTY 280 SL	22 fl oz/a B	502	90	90	0
N-PAK AMS	2.5 % v/v B	706	90	90	0
DIFLEXX	10 fl oz/a B				
	Mean =		94	95	0
12 BALANCE FLEXX	3 fl oz/a A	204	99	100	0
AATREX	2 pt/a A	405	99	100	0
LIBERTY 280 SL	32 fl oz/a B	608	95	85	0
N-PAK AMS	2.5 % v/v B	702	95	95	0
DIFLEXX	10 fl oz/a B				
	Mean =		97	95	0
13 BALANCE FLEXX	3 fl oz/a A	205	99	100	0
AATREX	2 pt/a A	401	99	100	0
LIBERTY 280 SL	43 fl oz/a B	505	95	90	0
N-PAK AMS	2.5 % v/v B	802	95	90	0
DIFLEXX	10 fl oz/a B				
	Mean =		97	95	0
14 BALANCE FLEXX	3 fl oz/a A	206	99	100	0
AATREX	2 pt/a A	302	95	100	0
LIBERTY 280 SL	22 fl oz/a B	503	95	90	0
N-PAK AMS	2.5 % v/v B	704	90	90	0
AATREX	2 pt/a B				
LIBERTY 280 SL	32 fl oz/a C				
N-PAK AMS	2.5 % v/v C				
	Mean =		95	95	0
15 BALANCE FLEXX	3 fl oz/a A	207	97	100	0
AATREX	2 pt/a A	402	90	100	0
LIBERTY 280 SL	32 fl oz/a B	607	90	70	0
N-PAK AMS	2.5 % v/v B	701	90	95	0
AATREX	2 pt/a B				
LIBERTY 280 SL	32 fl oz/a C				
N-PAK AMS	2.5 % v/v C				
	Mean =		92	91	0
16 UNTREATED CHECK 2		208	0	0	0
		404	0	0	0
		603	0	0	0
		708	0	0	0
	Mean =		0	0	0

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEUFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed			W Weed	W Weed	W Weed		
Pest Code	ECHSS			AMBTR	ECHSS	SETPU		
Pest Name	Barnyardgrass			Giant ragweed	Barnyardgrass	yellow foxtail		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn-Dekalb	Corn-Pioneer	Corn	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	Jun-12-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017		
Rating Type	CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER	M. ZIMMER		
Rating Timing	A3	A4	A4	A4	A4	A4		
Days After First/Last Applic.	48 21	55 7	55 7	55 7	55 7	55 7		
Days After Emergence	27 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 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 Plot	12	13	14	15	16	17
1 UNTREATED CHECK		101	0	0	0	0	0	0
		306	0	0	0	0	0	0
		604	0	0	0	0	0	0
		805	0	0	0	0	0	0
		Mean =	0	0	0	0	0	0
2 BALANCE FLEXX	3 fl oz/a A	102	85	0	0	50	50	50
AATREX	2 pt/a A	305	80	0	0	75	30	30
LIBERTY 280 SL	32 oz/a B	508	15	0	0	70	0	0
N-PAK AMS	2.5 % v/v B	806	20	0	0	20	0	0
		Mean =	50	0	0	54	20	20
3 BALANCE FLEXX	3 fl oz/a A	103	80	0	0	50	70	80
AATREX	2 pt/a A	308	30	0	0	50	0	0
LIBERTY 280 SL	36 fl oz/a B	601	10	0	0	25	0	0
N-PAK AMS	2.5 % v/v B	703	35	0	0	10	0	0
		Mean =	39	0	0	34	18	20
4 BALANCE FLEXX	3 fl oz/a A	104	95	0	0	70	90	90
AATREX	2 pt/a A	407	35	0	0	50	0	0
LIBERTY 280 SL	43 fl oz/a B	606	30	0	0	20	0	0
N-PAK AMS	2.5 % v/v B	804	30	0	0	25	0	0
		Mean =	48	0	0	41	23	23
5 BALANCE FLEXX	3 fl oz/a A	105	85	0	0	70	90	90
AATREX	2 pt/a A	307	95	0	0	85	90	80
LIBERTY 280 SL	32 fl oz/a B	501	30	0	0	20	0	0
N-PAK AMS	2.5 % v/v B	803	40	0	0	30	0	0
AATREX	2 pt/a B							
		Mean =	63	0	0	51	45	43
6 BALANCE FLEXX	3 fl oz/a A	106	85	0	0	80	70	70
AATREX	2 pt/a A	406	85	0	0	75	90	90
LIBERTY 280 SL	36 fl oz/a B	504	30	0	0	30	0	0
N-PAK AMS	2.5 % v/v B	801	30	0	0	30	0	0
AATREX	2 pt/a B							
		Mean =	58	0	0	54	40	40
7 BALANCE FLEXX	3 fl oz/a A	107	80	0	0	60	0	0
AATREX	2 pt/a A	303	90	0	0	60	95	95
LIBERTY 280 SL	43 fl oz/a B	507	30	0	0	60	0	0
N-PAK AMS	2.5 % v/v B	707	30	0	0	25	0	0
AATREX	2 pt/a B							
		Mean =	58	0	0	51	24	24
8 BALANCE FLEXX	3 fl oz/a A	108	30	0	0	55	0	0
AATREX	2 pt/a A	408	30	0	0	60	0	0
LIBERTY 280 SL	22 fl oz/a B	506	30	0	0	60	0	0
N-PAK AMS	2.5 % v/v B	705	40	0	0	50	0	0
LAUDIS	3 fl oz/a B							
		Mean =	33	0	0	56	0	0
9 BALANCE FLEXX	3 fl oz/a A	201	95	0	0	80	99	99
AATREX	2 pt/a A	304	95	0	0	72	99	99
LIBERTY 280 SL	32 fl oz/a B	605	40	0	0	60	0	0
N-PAK AMS	2.5 % v/v B	807	35	0	0	20	0	0
LAUDIS	3 fl oz/a B							
		Mean =	66	0	0	58	50	50

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEUFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed			W Weed	W Weed	W Weed
Pest Code	ECHSS			AMBTR	ECHSS	SETPU
Pest Name	Barnyardgrass			Giant ragweed	Barnyardgrass	yellow foxtail
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name	Corn	Corn-Dekalb	Corn-Pioneer	Corn	Corn	Corn
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -
Rating Date	Jun-12-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017	Jun-19-2017
Rating Type	CONTROL	PHYGEN	PHYGEN	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Assessed By	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON	M. ZIMMER	M. ZIMMER
Rating Timing	A3	A4	A4	A4	A4	A4
Days After First/Last Applic.	48 21	55 7	55 7	55 7	55 7	55 7
Days After Emergence	27 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 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 Plot	12	13	14	15
10 BALANCE FLEXX	3 fl oz/a A	202	90	0	0	60
AATREX	2 pt/a A	403	90	0	0	60
LIBERTY 280 SL	43 fl oz/a B	602	50	3	2	20
N-PAK AMS	2.5 % v/v B	808	30	0	0	60
LAUDIS	3 fl oz/a B					
	Mean =		65	1	1	50
11 BALANCE FLEXX	3 fl oz/a A	203	90	0	0	70
AATREX	2 pt/a A	301	90	0	0	70
LIBERTY 280 SL	22 fl oz/a B	502	40	0	0	70
N-PAK AMS	2.5 % v/v B	706	30	0	0	10
DIFLEXX	10 fl oz/a B					
	Mean =		63	0	0	55
12 BALANCE FLEXX	3 fl oz/a A	204	90	0	0	88
AATREX	2 pt/a A	405	88	0	0	85
LIBERTY 280 SL	32 fl oz/a B	608	10	0	0	70
N-PAK AMS	2.5 % v/v B	702	45	0	0	85
DIFLEXX	10 fl oz/a B					
	Mean =		58	0	0	82
13 BALANCE FLEXX	3 fl oz/a A	205	90	0	0	95
AATREX	2 pt/a A	401	88	0	0	85
LIBERTY 280 SL	43 fl oz/a B	505	30	0	0	70
N-PAK AMS	2.5 % v/v B	802	35	0	0	70
DIFLEXX	10 fl oz/a B					
	Mean =		61	0	0	80
14 BALANCE FLEXX	3 fl oz/a A	206	90	0	0	90
AATREX	2 pt/a A	302	90	3	2	95
LIBERTY 280 SL	22 fl oz/a B	503	40	2	2	95
N-PAK AMS	2.5 % v/v B	704	35	3	2	92
AATREX	2 pt/a B					
LIBERTY 280 SL	32 fl oz/a C					
N-PAK AMS	2.5 % v/v C					
	Mean =		64	2	2	93
15 BALANCE FLEXX	3 fl oz/a A	207	98	2	5	96
AATREX	2 pt/a A	402	90	2	2	95
LIBERTY 280 SL	32 fl oz/a B	607	30	2	2	95
N-PAK AMS	2.5 % v/v B	701	40	3	0	95
AATREX	2 pt/a B					
LIBERTY 280 SL	32 fl oz/a C					
N-PAK AMS	2.5 % v/v C					
	Mean =		65	2	2	95
16 UNTREATED CHECK 2		208	0	0	0	0
		404	0	0	0	0
		603	0	0	0	0
		708	0	0	0	0
	Mean =		0	0	0	0

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIUEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ECHSS	SETPU	SETFA		
Pest Name	Giant foxtail	Giant ragweed	Barnyardgrass	yellow foxtail	Giant foxtail		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn	Corn	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	Jun-19-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017		
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Assessed By	M. ZIMMER	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON		
Rating Timing	A4	A5	A5	A5	A5		
Days After First/Last Applic.	55 7	69 21	69 21	69 21	69 21		
Days After Emergence	34 DE-1	48 DE-1	48 DE-1	48 DE-1	48 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	18	19	20	21	22
1 UNTREATED CHECK		101	0	0	0	0	0
		306	0	0	0	0	0
		604	0	0	0	0	0
		805	0	0	0	0	0
		Mean =	0	0	0	0	0
2 BALANCE FLEXX	3 fl oz/a A	102	30	20	30	30	10
AATREX	2 pt/a A	305	30	55	10	10	10
LIBERTY 280 SL	32 oz/a B	508	0	55	0	0	0
N-PAK AMS	2.5 % v/v B	806	0	0	0	0	0
		Mean =	15	33	10	10	5
3 BALANCE FLEXX	3 fl oz/a A	103	50	20	50	60	50
AATREX	2 pt/a A	308	0	25	0	0	0
LIBERTY 280 SL	36 fl oz/a B	601	0	0	0	0	0
N-PAK AMS	2.5 % v/v B	703	0	0	0	0	0
		Mean =	13	11	13	15	13
4 BALANCE FLEXX	3 fl oz/a A	104	80	20	70	70	60
AATREX	2 pt/a A	407	0	25	0	0	0
LIBERTY 280 SL	43 fl oz/a B	606	0	0	0	0	0
N-PAK AMS	2.5 % v/v B	804	0	5	0	0	0
		Mean =	20	13	18	18	15
5 BALANCE FLEXX	3 fl oz/a A	105	80	55	50	70	60
AATREX	2 pt/a A	307	80	70	75	65	65
LIBERTY 280 SL	32 fl oz/a B	501	0	20	0	0	0
N-PAK AMS	2.5 % v/v B	803	0	10	0	0	0
AATREX	2 pt/a B						
		Mean =	40	39	31	34	31
6 BALANCE FLEXX	3 fl oz/a A	106	50	60	60	55	35
AATREX	2 pt/a A	406	80	40	40	40	30
LIBERTY 280 SL	36 fl oz/a B	504	0	0	0	0	0
N-PAK AMS	2.5 % v/v B	801	0	10	0	0	0
AATREX	2 pt/a B						
		Mean =	33	28	25	24	16
7 BALANCE FLEXX	3 fl oz/a A	107	0	35	0	0	0
AATREX	2 pt/a A	303	88	30	80	80	75
LIBERTY 280 SL	43 fl oz/a B	507	0	35	0	0	0
N-PAK AMS	2.5 % v/v B	707	0	25	0	0	0
AATREX	2 pt/a B						
		Mean =	22	31	20	20	19
8 BALANCE FLEXX	3 fl oz/a A	108	0	30	0	0	0
AATREX	2 pt/a A	408	0	30	0	0	0
LIBERTY 280 SL	22 fl oz/a B	506	0	30	0	0	0
N-PAK AMS	2.5 % v/v B	705	0	10	0	0	0
LAUDIS	3 fl oz/a B						
		Mean =	0	25	0	0	0
9 BALANCE FLEXX	3 fl oz/a A	201	95	60	85	85	80
AATREX	2 pt/a A	304	93	45	80	80	75
LIBERTY 280 SL	32 fl oz/a B	605	0	10	0	0	0
N-PAK AMS	2.5 % v/v B	807	0	0	0	0	0
LAUDIS	3 fl oz/a B						
		Mean =	47	29	41	41	39

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20 Location: TPAC Trial Year: 2017
 Protocol ID: 17S-TPAC-CORN-20 Investigator: Dr. Bill Johnson
 Project ID: HP17USAWGIEFI Study Director: Dustin Johnson
 Sponsor Contact: A. Kurtz - Bayer

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	SETFA	AMBTR	ECHSS	SETPU	SETFA		
Pest Name	Giant foxtail	Giant ragweed	Barnyardgrass	yellow foxtail	Giant foxtail		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Crop Name	Corn	Corn	Corn	Corn	Corn		
Part Rated	PLOT -	PLOT -	PLOT -	PLOT -	PLOT -		
Rating Date	Jun-19-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017	Jul-3-2017		
Rating Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL		
Rating Unit	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1		
Assessed By	M. ZIMMER	D. JOHNSON	D. JOHNSON	D. JOHNSON	D. JOHNSON		
Rating Timing	A4	A5	A5	A5	A5		
Days After First/Last Applic.	55 7	69 21	69 21	69 21	69 21		
Days After Emergence	34 DE-1	48 DE-1	48 DE-1	48 DE-1	48 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	18	19	20	21	22
10 BALANCE FLEXX	3 fl oz/a A	202	90	35	80	80	75
AATREX	2 pt/a A	403	90	40	80	80	75
LIBERTY 280 SL	43 fl oz/a B	602	50	0	0	0	0
N-PAK AMS	2.5 % v/v B	808	0	25	0	0	0
LAUDIS	3 fl oz/a B						
	Mean =		58	25	40	40	38
11 BALANCE FLEXX	3 fl oz/a A	203	85	45	80	80	70
AATREX	2 pt/a A	301	85	40	80	80	70
LIBERTY 280 SL	22 fl oz/a B	502	0	35	0	0	0
N-PAK AMS	2.5 % v/v B	706	0	0	0	0	0
DIFLEXX	10 fl oz/a B						
	Mean =		43	30	40	40	35
12 BALANCE FLEXX	3 fl oz/a A	204	80	75	75	75	65
AATREX	2 pt/a A	405	55	80	40	35	35
LIBERTY 280 SL	32 fl oz/a B	608	0	70	0	0	0
N-PAK AMS	2.5 % v/v B	702	30	70	0	0	0
DIFLEXX	10 fl oz/a B						
	Mean =		41	74	29	28	25
13 BALANCE FLEXX	3 fl oz/a A	205	80	90	80	80	70
AATREX	2 pt/a A	401	90	65	70	80	75
LIBERTY 280 SL	43 fl oz/a B	505	0	55	0	0	0
N-PAK AMS	2.5 % v/v B	802	0	30	0	0	0
DIFLEXX	10 fl oz/a B						
	Mean =		43	60	38	40	36
14 BALANCE FLEXX	3 fl oz/a A	206	90	80	90	90	80
AATREX	2 pt/a A	302	97	88	85	85	85
LIBERTY 280 SL	22 fl oz/a B	503	95	90	80	80	80
N-PAK AMS	2.5 % v/v B	704	97	85	80	80	80
AATREX	2 pt/a B						
LIBERTY 280 SL	32 fl oz/a C						
N-PAK AMS	2.5 % v/v C						
	Mean =		95	86	84	84	81
15 BALANCE FLEXX	3 fl oz/a A	207	98	90	90	90	90
AATREX	2 pt/a A	402	99	85	85	85	85
LIBERTY 280 SL	32 fl oz/a B	607	95	88	80	80	80
N-PAK AMS	2.5 % v/v B	701	98	95	80	80	80
AATREX	2 pt/a B						
LIBERTY 280 SL	32 fl oz/a C						
N-PAK AMS	2.5 % v/v C						
	Mean =		98	90	84	84	84
16 UNTREATED CHECK 2		208	0	0	0	0	0
		404	0	0	0	0	0
		603	0	0	0	0	0
		708	0	0	0	0	0
	Mean =		0	0	0	0	0

Purdue Weed Science

Different rates of Liberty in two corn varieties.

Trial ID: 17S-TPAC-CORN-20	Location: TPAC Trial Year: 2017
Protocol ID: 17S-TPAC-CORN-20	Investigator: Dr. Bill Johnson
Project ID: HP17USAWGIUEFI	Study Director: Dustin Johnson
	Sponsor Contact: A. Kurtz - Bayer

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
 SETPU, Setaria pumila, yellow foxtail = US
 SETFA, Setaria faberi, Giant foxtail = US

Crop Code

ZEAMX, BCOR, Zea mays, Corn-Dekalb = US
 ZEAMX, BCOR, Zea mays, Corn-Pioneer = US
 ZEAMX, BCOR, Zea mays, Corn = US

Part Rated

PLOT = plot

Rating Type

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

Rating Timing

A1 = 1st Assessment According to Trial Schedule
 A2 = 2nd Assessment According to trial Schedule
 A3 = 3rd Assessment According to Trial Schedule
 A4 = 4th Assessment According to Trial Schedule
 A5 = 5th Assessment According to Trial Schedule

ARM Action Codes

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