

The Ohio State University

Liberty Link Corn, Liberty with Auxins and Different Nozzles

Trial ID: 13LLC1 Location: WESTERN BRANCH F-8 W Trial Year: 2013
 Protocol ID: 13LLC1 Investigator: Dr. Mark M. Loux
 Project ID: HP13USANHE Study Director: Anthony F. Dobbels
 Sponsor Contact: Dave Lamore, Bayer CropScience

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: Seed Consultants SCS11HR21 **BBCH Scale:** BCOR
Description: RR/LL

Planting Rate, Unit: 32097 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN
Soil Temperature, Unit: 56 F
Soil Moisture: NORMAL normal, adequate
Seed Bed: MEDIUM medium

Planting Date: May-6-2013
Planting Method: PLANTD planted
Planting Equipment: FPP Finger Pickup Planter
Emergence Date: May-17-2013

Pest Description

- Pest 1 Type:** W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
- Pest 2 Type:** W **Code:** ABUTH Abutilon theophrasti
Common Name: velvetleaf
- Pest 3 Type:** W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
- Pest 4 Type:** W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Site and Design

Treated Plot Width: 6.67 FT
Treated Plot Length: 30 FT
Treated Plot Area: 200.1 FT2 **Treatments:** 14
Replications: 3

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOB� Randomized Complete Block (RCB)

Soil Description

Description Name: G-6
% OM: 2.2 **Texture:** SIL silt loam
pH: 6.3 **Soil Name:** Crosby
CEC: 13.6 **Fert. Level:** G good
Soil Drainage: G good

Application Description

	A	B	C
Application Date:	May-6-2013	Jun-4-2013	Jun-4-2013
Appl. Start Time:	11:30 AM	9:00 AM	9:00 AM
Appl. Stop Time:	12:00 PM	9:30 AM	9:30 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	POST	POST
Application Placement:	BROSOI	BROFOL	BROFOL
Air Temperature, Unit:	60 F	61 F	61 F
% Relative Humidity:	100	58	58
Wind Velocity, Unit:	7 MPH	1 MPH	1 MPH
Wind Direction:	SE	SE	SE
Dew Presence (Y/N):	N no	Y yes	Y yes
Soil Temperature, Unit:	56 F	58 F	58 F
Soil Moisture:	NORMAL	NORMAL	NORMAL
% Cloud Cover:	100	10	10
Next Moisture Occurred On:	May-6-2013	Jun-6-2013	Jun-6-2013
Time to Next Moisture, Unit:	1 HR	2 DAY	2 DAY

Crop Stage At Each Application

	A		B		C	
Crop 1 Code, BBCH Scale:	ZEAMX	BCOR	ZEAMX	BCOR	ZEAMX	BCOR
Stage Scale Used:			BBCH		BBCH	
Stage Majority, Percent:			14	100	14	100
Height, Unit:			12 IN		12 IN	
Height Minimum, Maximum:			12 13		12 13	

The Ohio State University

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:	19	100	19 100
Height, Unit:	3 IN	3 IN	3 IN
Height Minimum, Maximum:	3 12	3 12	3 12
Density, Unit:	16 M2	16 M2	16 M2
Pest 2 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:	15	100	15 100
Height, Unit:	2 IN	2 IN	2 IN
Height Minimum, Maximum:	2 4	2 4	2 4
Density, Unit:	16 M2	16 M2	16 M2
Pest 3 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Stage Majority, Percent:	19	100	19 100
Height, Unit:	2 IN	2 IN	2 IN
Height Minimum, Maximum:	2 4	2 4	2 4
Density, Unit:	4 M2	4 M2	4 M2
Pest 4 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:	12	100	12 100
Height, Unit:	6 IN	6 IN	6 IN
Height Minimum, Maximum:	6 6	6 6	6 6
Density, Unit:	52 M2	52 M2	52 M2

Application Equipment

	A	B	C
Appl. Equipment:	6 foot boom	XR	TWIN
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	46 PSI	48 PSI	48 PSI
Nozzle Type:	AI XR	DG TeeJet	Turbotwin
Nozzle Size:	110015	11002	11002
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Boom Length, Unit:	6 FT	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	15 GAL/AC	20 GAL/AC	20 GAL/AC
Mix Size, Unit:	1 Liters	2 liters	2 Liters
Propellant:	CO2	CO2	COW

The Ohio State University

Liberty Link Corn, Liberty with Auxins and Different Nozzles

Trial ID: 13LLC1
 Protocol ID: 13LLC1
 Project ID: HP13USANHE

Location: WESTERN BRANCH F-8 W Trial Year: 2013
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony F. Dobbels
 Sponsor Contact: Dave Lamore, Bayer CropScience

Pest Code	ZEAMX			SETFA	AMBTR	CHEAL	ABUTH					
Crop Code	Jun-11-2013	Jun-11-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013					
Rating Date	3											
Rating Type	PHYLMA	PHYSTU	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%	%	%					
Days After First/Last Applic.	36 7	36 7	43 14	43 14	43 14	43 14	43 14					
Trt-Eval Interval	7 DA-B	7 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B					
Plant-Eval Interval	36 DP-1	36 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1					
Days After Emergence	25 DE-1	25 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1					
Trt No.	Treatment Name	Other Rate	Other Rate	Growth Unit	Appl Code	1	2	3	4	5	6	7
1	UTC					0 d	0 a	0 a	0 b	0	0 b	0 b
2	Harness	0.75 pt/a		PRE	A	0 d	2 a	0 a	100 a	87 ab	100 a	82 a
	2 Liberty	22 oz/a		POST	B							
	2 Clarity	8 oz/a		POST	B							
	2 N-PAK AMS	2 qt/a		POST	B							
3	Harness	0.75 pt/a		PRE	A	0 d	2 a	0 a	100 a	87 ab	100 a	97 a
	3 Liberty	22 oz/a		POST	B							
	3 Clarity	16 oz/a		POST	B							
	3 N-PAK AMS	2 qt/a		POST	B							
4	Harness	0.75 pt/a		PRE	A	3 cd	4 a	1 a	97 a	88 ab	100 a	97 a
	4 Liberty	29 oz/a		POST	B							
	4 Clarity	8 oz/a		POST	B							
	4 N-PAK AMS	2 qt/a		POST	B							
5	Harness	0.75 pt/a		PRE	A	17 ab	1 a	1 a	99 a	97 a	100 a	99 a
	5 Liberty	29 oz/a		POST	B							
	5 Clarity	16 oz/a		POST	B							
	5 N-PAK AMS	2 qt/a		POST	B							
6	Harness	0.75 pt/a		PRE	A	0 d	0 a	0 a	100 a	73 bc	99 a	72 a
	6 Liberty	22 oz/a		TWIN	C							
	6 N-PAK AMS	2 qt/a		TWIN	C							
7	Harness	0.75 pt/a		PRE	A	0 d	0 a	0 a	92 a	63 c	100 a	57 a
	7 Liberty	29 oz/a		TWIN	C							
	7 N-PAK AMS	2 qt/a		TWIN	C							
8	Harness	0.75 pt/a		PRE	A	0 d	1 a	0 a	87 a	90 ab	100 a	85 a
	8 Clarity	8 oz/a		POST	B							
	8 NIS	6.4 oz/a		POST	B							
	8 N-PAK AMS	2 qt/a		POST	B							
9	Harness	0.75 pt/a		PRE	A	7 bcd	4 a	0 a	98 a	98 a	100 a	87 a
	9 Clarity	16 oz/a		POST	B							
	9 NIS	6.4 oz/a		POST	B							
	9 N-PAK AMS	2 qt/a		POST	B							
10	Harness	0.75 pt/a		PRE	A	7 bcd	3 a	1 a	99 a	91 ab	100 a	90 a
	10 Liberty	29 oz/a		TWIN	C							
	10 Clarity	8 oz/a		TWIN	C							
	10 N-PAK AMS	2 qt/a		TWIN	C							
11	Harness	0.75 pt/a		PRE	A	11 abc	5 a	1 a	100 a	95 ab	100 a	97 a
	11 Liberty	29 oz/a		TWIN	C							
	11 Clarity	16 oz/a		TWIN	C							
	11 N-PAK AMS	2 qt/a		TWIN	C							

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
 t=Mean descriptions are reported in transformed data units, and are not de-transformed.
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

The Ohio State University

Pest Code	ZEAMX			SETFA	AMBTR	CHEAL	ABUTH					
Crop Code	Jun-11-2013	Jun-11-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013	Jun-18-2013					
Rating Date												
Rating Type	PHYLMA	PHYSTU	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%	%	%	%					
Days After First/Last Applic.	36 7	36 7	43 14	43 14	43 14	43 14	43 14					
Trt-Eval Interval	7 DA-B	7 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B					
Plant-Eval Interval	36 DP-1	36 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1	43 DP-1					
Days After Emergence	25 DE-1	25 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1					
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
12	Harness	0.75	pt/a	PRE	A	20 ab	3 a	2 a	91 a	80 abc	100 a	83 a
	12 2,4-D Amine	16	oz/a	POST	B							
	12 NIS	6.4	oz/a	POST	B							
	12 N-PAK AMS	2	qt/a	POST	B							
13	Harness	0.75	pt/a	PRE	A	28 a	6 a	2 a	100 a	78 abc	100 a	100 a
	13 Liberty	29	oz/a	POST	B							
	13 2,4-D Amine	16	oz/a	POST	B							
	13 N-PAK AMS	2	qt/a	POST	B							
14	Harness	0.75	pt/a	PRE	A	23 ab	6 a	1 a	100 a	83 ab	100 a	100 a
	14 Liberty	29	oz/a	TWIN	C							
	14 2,4-D Amine	16	oz/a	TWIN	C							
	14 N-PAK AMS	2	qt/a	TWIN	C							
LSD (P=.05)		9.9t		8.7t		1.6		19.7t		12.9		25.1
Standard Deviation		5.9t		5.2t		0.9		11.7t		7.7		15.0
CV		46.58		62.77		172.64		15.17		8.97		18.32
Bartlett's X2		7.765		8.667		0.719		7.876		15.749		16.535
P(Bartlett's X2)		0.457		0.731		0.994		0.446		0.203		0.085
Skewness		0.2881		-0.1493		1.4715*		-2.3874*		-0.7333		-1.8128*
Kurtosis		-1.5483*		-1.2277		0.5298		5.1811*		0.5658		10.4073*
Replicate F		0.317		4.810		0.426		0.140		1.635		1.797
Replicate Prob(F)		0.7312		0.0167		0.6574		0.8700		0.2159		0.1857
Treatment F		12.524		2.162		1.584		11.890		4.942		9.431
Treatment Prob(F)		0.0001		0.0457		0.1541		0.0001		0.0004		0.0001

The Ohio State University

Pest Code	SETFA	AMBTR	CHEAL	ABUTH
Crop Code				
Rating Date	Jul-2-2013	Jul-2-201	Jul-2-201	Jul-2-2013
		3	3	
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Days After First/Last Applic.	57 28	57 28	57 28	57 28
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B
Plant-Eval Interval	57 DP-1	57 DP-1	57 DP-1	57 DP-1
Days After Emergence	46 DE-1	46 DE-1	46 DE-1	46 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate	Unit	Growth Stage	Appl Code	8	9	10	11
1	UTC						0 b	0	0 b	0 b
2	Harness	0.75 pt/a			PRE	A	97 a	86 a	100 a	81 a
	2 Liberty	22 oz/a			POST	B				
	2 Clarity	8 oz/a			POST	B				
	2 N-PAK AMS	2 qt/a			POST	B				
3	Harness	0.75 pt/a			PRE	A	95 a	88 a	98 a	89 a
	3 Liberty	22 oz/a			POST	B				
	3 Clarity	16 oz/a			POST	B				
	3 N-PAK AMS	2 qt/a			POST	B				
4	Harness	0.75 pt/a			PRE	A	93 a	88 a	100 a	100 a
	4 Liberty	29 oz/a			POST	B				
	4 Clarity	8 oz/a			POST	B				
	4 N-PAK AMS	2 qt/a			POST	B				
5	Harness	0.75 pt/a			PRE	A	95 a	93 a	100 a	98 a
	5 Liberty	29 oz/a			POST	B				
	5 Clarity	16 oz/a			POST	B				
	5 N-PAK AMS	2 qt/a			POST	B				
6	Harness	0.75 pt/a			PRE	A	94 a	82 a	92 a	78 a
	6 Liberty	22 oz/a			TWIN	C				
	6 N-PAK AMS	2 qt/a			TWIN	C				
7	Harness	0.75 pt/a			PRE	A	95 a	72 a	100 a	64 a
	7 Liberty	29 oz/a			TWIN	C				
	7 N-PAK AMS	2 qt/a			TWIN	C				
8	Harness	0.75 pt/a			PRE	A	88 a	83 a	100 a	77 a
	8 Clarity	8 oz/a			POST	B				
	8 NIS	6.4 oz/a			POST	B				
	8 N-PAK AMS	2 qt/a			POST	B				
9	Harness	0.75 pt/a			PRE	A	90 a	88 a	100 a	86 a
	9 Clarity	16 oz/a			POST	B				
	9 NIS	6.4 oz/a			POST	B				
	9 N-PAK AMS	2 qt/a			POST	B				
10	Harness	0.75 pt/a			PRE	A	96 a	88 a	100 a	95 a
	10 Liberty	29 oz/a			TWIN	C				
	10 Clarity	8 oz/a			TWIN	C				
	10 N-PAK AMS	2 qt/a			TWIN	C				
11	Harness	0.75 pt/a			PRE	A	95 a	93 a	99 a	100 a
	11 Liberty	29 oz/a			TWIN	C				
	11 Clarity	16 oz/a			TWIN	C				
	11 N-PAK AMS	2 qt/a			TWIN	C				

The Ohio State University

Pest Code	SETFA	AMBTR	CHEAL	ABUTH					
Crop Code									
Rating Date	Jul-2-2013	Jul-2-201	Jul-2-201	Jul-2-2013					
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit	%	%	%	%					
Days After First/Last Applic.	57 28	57 28	57 28	57 28					
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B					
Plant-Eval Interval	57 DP-1	57 DP-1	57 DP-1	57 DP-1					
Days After Emergence	46 DE-1	46 DE-1	46 DE-1	46 DE-1					
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	8	9	10	11
12	Harness	0.75	pt/a	PRE	A	90 a	78 a	100 a	95 a
	12 2,4-D Amine	16	oz/a	POST	B				
	12 NIS	6.4	oz/a	POST	B				
	12 N-PAK AMS	2	qt/a	POST	B				
13	Harness	0.75	pt/a	PRE	A	97 a	83 a	95 a	99 a
	13 Liberty	29	oz/a	POST	B				
	13 2,4-D Amine	16	oz/a	POST	B				
	13 N-PAK AMS	2	qt/a	POST	B				
14	Harness	0.75	pt/a	PRE	A	97 a	79 a	97 a	98 a
	14 Liberty	29	oz/a	TWIN	C				
	14 2,4-D Amine	16	oz/a	TWIN	C				
	14 N-PAK AMS	2	qt/a	TWIN	C				
LSD (P=.05)						10.2	12.5	5.1	22.7t
Standard Deviation						6.1	7.4	3.0	13.5t
CV						6.96	8.75	3.32	19.71
Bartlett's X2						12.644	5.694	8.353	3.578
P(Bartlett's X2)						0.395	0.931	0.079	0.964
Skewness						-3.1584*	-0.203	-3.3425*	-1.2612*
Kurtosis						9.0241*	0.8041	9.8877*	1.301
Replicate F						1.726	0.316	3.362	7.064
Replicate Prob(F)						0.1978	0.7322	0.0503	0.0035
Treatment F						51.899	2.095	227.349	8.479
Treatment Prob(F)						0.0001	0.0595	0.0001	0.0001

The Ohio State University

Liberty Link Corn, Liberty with Auxins and Different Nozzles

Trial ID: 13LLC1 Location: WESTERN BRANCH F-8 W Trial Year: 2013
Protocol ID: 13LLC1 Investigator: Dr. Mark M. Loux
Project ID: HP13USANHE Study Director: Anthony F. Dobbels
Sponsor Contact: Dave Lamore, Bayer CropScience

Pest Code

SETFA, *Setaria faberi*, = US
AMBTR, *Ambrosia trifida*, = US
CHEAL, *Chenopodium album*, = US
ABUTH, *Abutilon theophrasti*, = US

Crop Code

ZEAMX, BCOR, *Zea mays*, = US

Rating Type

PHYLMA = phytotoxicity - leaf malformation
PHYSTU = phytotoxicity - stunting
PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

36 DP-1 = 1 ZEAMX May-6-2013
43 DP-1 = 1 ZEAMX May-6-2013
57 DP-1 = 1 ZEAMX May-6-2013