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Evaluate Corvus, Balance Flexx, Capreno, Laudis, and Liberty in a Two-pass corn system

Trial ID: 12S-SEP-NTC-06 Protocol ID: 12S-SEP-NTC-06
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: HP12NARBLN Investigator: Dr. Bill Johnson
 Sponsor Contact: Dave Lamore

General Trial Information

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

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-9-2012

Trial Location

City: Butleville
State/Prov.: IN
Postal Code: 47223
Country: USA

Personnel

Study Director: Paul Marquardt **Title:** Research Associate

Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** pmarquar@purdue.edu
Phone No.: 765-494-0891 **Mobile No.:** 765-409-6369

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

Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Don Biehle **Role:** Director
Organization: Southeast Purdue Agricultural Center **Org. Type:** University
Address 1: 4425 E. CR 350 N

City: Butleville **Phone No.:** 812-458-6977
State/Prov.: IN **Fax No.:** 812-458-6979
Postal Code: 47223 **Mobile No.:** 812-592-8426
Country: USA **E-mail:** biehled@purdue.edu
 United States

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: P33W84 **Description:** Roundup Ready/Liberty Link
BBCH Scale: BCOR **Planting Date:** 5-3-2012
Planting Method: DIRDRI direct drilled **Rate, Unit:** 32000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN **Spacing Within Row, Unit:** 6 IN
Seed Bed: MEDIUM medium **Soil Temperature, Unit:** 70 F
Soil Moisture: MOIST **Emergence Date:** 5-8-2012

Pest Description

Pest 1 Type: W **Code:** ALLVI Allium vineale
Common Name: Wild garlic

Pest 2 Type: W **Code:** AMBEL Ambrosia artemisiifolia
Common Name: Common ragweed

Pest 3 Type: W **Code:** XANST Xanthium strumarium
Common Name: Heart-leaf cocklebur

Pest 4 Type: W **Code:** ECHCG Echinochloa crus-galli
Common Name: Common barnyardgrass

Pest 5 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

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Site and Design

Plot Width, Unit: 10 FT
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT²
Replications: 4

Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB L Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Maintenance

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Description	Rate	Rate Unit	Tank Mix
1.	4-19-2012	Roundup PowerMAX	4.5	LB/GAL	L	BURNDOWN	22	OZ/A	yes
2.	4-19-2012	2,4-D LV4	4	LB/GAL	L	BURNDOWN	1	LB A/A	yes

Soil Description

Description Name: SEPAC-Field U41
% Sand: 20 **% OM:** 1.3 **Texture:** SIL silt loam
% Silt: 65 **pH:** 6.5 **Soil Name:** Avonburg
% Clay: 15 **CEC:** 5.7 **Fert. Level:** G good
Soil Drainage: P poor

Application Description

	A	B
Application Date:	5-3-2012	5-31-2012
Time of Day:	11 AM	11 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN	MIPOCR
Application Placement:	FOLIAR	FOLIAR
Applied By:	JR	JR
Air Temperature, Unit:	78 F	75 F
% Relative Humidity:	79	51
Wind Velocity, Unit:	4.8 MPH	3 MPH
Wind Direction:	W	S
Dew Presence (Y/N):	N no	Y yes
Soil Temperature, Unit:	70 F	
Soil Moisture:	MOIST	DRY
% Cloud Cover:	75	30

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	00 100	34 60
Stage Minimum, Percent:		34 60
Stage Maximum, Percent:		35 40
Height, Unit:		15 IN
Height Minimum, Maximum:		12 18

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	ALLVI W	ALLVI W
Stage Majority, Percent:	21 100	
Height, Unit:	7 IN	
Height Minimum, Maximum:	6 8	
Density, Unit:	10 M2	
Pest 2 Code, Type, Scale:	AMBEL W	AMBEL W
Stage Majority, Percent:	09 100	12 100
Height, Unit:	1 IN	3.5 IN
Height Minimum, Maximum:	1 1	1 6
Density, Unit:	0.5 M2	5 M2
Pest 3 Code, Type, Scale:	XANST W	XANST W
Stage Majority, Percent:		14 100
Height, Unit:		3.5 IN
Height Minimum, Maximum:		1 6
Density, Unit:		5.5 M2
Pest 4 Code, Type, Scale:	ECHCG W	ECHCG W
Stage Majority, Percent:		13 100
Height, Unit:		5.5 IN
Height Minimum, Maximum:		1 10
Density, Unit:		42.5 M2
Pest 5 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:		13 100
Height, Unit:		5.5 IN
Height Minimum, Maximum:		1 10
Density, Unit:		42.5 M2

Application Equipment

	A	B
Appl. Equipment:	CO2 Backpack	CO2 Backpack
Equipment Type:	SPRBAC	SPRBAC
Operation Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	8	
Boom Length, Unit:	10 FT	10 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	H2O	H2O
Water Hardness (ppm CaCO3):	150	150
Spray Volume, Unit:	15 GAL/AC	15 gal/ac
Mix Size, Unit:	1.8 Liters	1.8 liters
Propellant:	CO2	CO2
Tank Mix (Y/N):	N no	N no

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Trial ID: 12S-SEP-NTC-06 Protocol ID: 12S-SEP-NTC-06
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: HP12NARBLN Investigator: Dr. Bill Johnson
 Sponsor Contact: Dave Lamore

Pest Type	W Weed		W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	XANST		XANST	GGGAN	AMBEL	XANST	GGGAN
Pest Scientific Name	Xanthium strum>		Xanthium strum>	Annual grasses	Ambrosia artem>	Xanthium strum>	Annual grasses
Pest Name	Heart-leaf coc>		Heart-leaf coc>	Annual grasses	Common ragweed	Heart-leaf coc>	Annual grasses
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays		Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn		Corn	Corn	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description						18-30 IN	18-30 IN
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	5-10-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	6-7-2012	6-7-2012
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority	09	34	34	34	34	35	35
Pest Stage Majority	1 IN		1-6 IN	1-10 IN	1-6 IN	2-8 IN	1-18 IN
Pest Density, Unit	2.5 M2		5.5 M2	42.5M2	5 M2	5 M2	55 M2
Assessed By	PM	PM/JS	PM/JS	PM/JS	PM/JS	PM	PM
Days After First/Last Applic.	7 7	28 28	28 28	28 28	28 28	35 7	35 7
Trt-Eval Interval	7 DA-A						
Plant-Eval Interval	7 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	35 DP-1	35 DP-1
Days After Emergence	2 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	30 DE-1	30 DE-1
Trt No.	1		3	4	5	6	7
Treatment Name	UNTREATED						
Rate	0.0 b		0.0 b	0.0 b	0.0 b	0.0 b	0.0 b
Rate Unit	b		a	a	a	a	a
Appl Code	A		A	A	A	A	A
2	Corvus		Corvus	Corvus	Corvus	Corvus	Corvus
Rate	69 g ai/ha		69 g ai/ha	69 g ai/ha	69 g ai/ha	69 g ai/ha	69 g ai/ha
Rate Unit	ai/ha		ai/ha	ai/ha	ai/ha	ai/ha	ai/ha
Appl Code	A		A	A	A	A	A
3	Atrazine		Atrazine	Atrazine	Atrazine	Atrazine	Atrazine
Rate	1120 g ai/ha		1120 g ai/ha	1120 g ai/ha	1120 g ai/ha	1120 g ai/ha	1120 g ai/ha
Rate Unit	ai/ha		ai/ha	ai/ha	ai/ha	ai/ha	ai/ha
Appl Code	A		A	A	A	A	A
4	Ignite		Ignite	Ignite	Ignite	Ignite	Ignite
Rate	450 g ai/ha		450 g ai/ha	450 g ai/ha	450 g ai/ha	450 g ai/ha	450 g ai/ha
Rate Unit	ai/ha		ai/ha	ai/ha	ai/ha	ai/ha	ai/ha
Appl Code	B		B	B	B	B	B
5	Laudis		Laudis	Laudis	Laudis	Laudis	Laudis
Rate	92 g ai/ha		92 g ai/ha	92 g ai/ha	92 g ai/ha	92 g ai/ha	92 g ai/ha
Rate Unit	ai/ha		ai/ha	ai/ha	ai/ha	ai/ha	ai/ha
Appl Code	B		B	B	B	B	B
6	Clarity		Clarity	Clarity	Clarity	Clarity	Clarity
Rate	280 g ai/ha		280 g ai/ha	280 g ai/ha	280 g ai/ha	280 g ai/ha	280 g ai/ha
Rate Unit	ai/ha		ai/ha	ai/ha	ai/ha	ai/ha	ai/ha
Appl Code	B		B	B	B	B	B
7	N-Pak AMS		N-Pak AMS	N-Pak AMS	N-Pak AMS	N-Pak AMS	N-Pak AMS
Rate	8.5 % v/v		8.5 % v/v	8.5 % v/v	8.5 % v/v	8.5 % v/v	8.5 % v/v
Rate Unit	v/v		v/v	v/v	v/v	v/v	v/v
Appl Code	B		B	B	B	B	B

Means followed by same letter do not significantly differ (P= .05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Type	W Weed		W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	XANST		XANST	GGGAN	AMBEL	XANST	GGGAN		
Pest Scientific Name	Xanthium strum>		Xanthium strum>	Annual grasses	Ambrosia artem>	Xanthium strum>	Annual grasses		
Pest Name	Heart-leaf coc>		Heart-leaf coc>	Annual grasses	Common ragweed	Heart-leaf coc>	Annual grasses		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR		
Crop Scientific Name	Zea mays		Zea mays	Zea mays	Zea mays	Zea mays	Zea mays		
Crop Name	Corn		Corn	Corn	Corn	Corn	Corn		
Crop Variety	P33W84		P33W84	P33W84	P33W84	P33W84	P33W84		
Description									
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	5-10-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	6-7-2012	6-7-2012		
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%		%	%	%	%	%		
Number of Subsamples	1		1	1	1	1	1		
Crop Stage Majority	09		34	34	34	35	35		
Pest Stage Majority	1 IN		1-6 IN	1-10 IN	1-6 IN	2-8 IN	1-18 IN		
Pest Density, Unit	2.5 M2		5.5 M2	42.5M2	5 M2	5 M2	55 M2		
Assessed By	PM		PM/JS	PM/JS	PM/JS	PM	PM		
Days After First/Last Applic.	7 7		28 28	28 28	28 28	35 7	35 7		
Trt-Eval Interval	7 DA-A								
Plant-Eval Interval	7 DP-1		28 DP-1	28 DP-1	28 DP-1	35 DP-1	35 DP-1		
Days After Emergence	2 DE-1		23 DE-1	23 DE-1	23 DE-1	30 DE-1	30 DE-1		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
7 Surestart	1190 g ai/ha	A	92.5 a	0.0 a	91.3 a	81.3 a	100.0 a	100.0 a	97.8 a
Durango DMA	770 g ae/ha	B							
N-Pak AMS	8.5 % v/v	B							
LSD (P=.05)	14.86	0.00	26.10	15.00	6.41	0.00	3.92		
Standard Deviation	10.00	0.00	17.49	10.10	4.31	0.00	2.64		
CV	12.41	0.0	24.57	14.18	5.13	0.0	3.19		
Bartlett's X2	19.307	0.0	21.289	11.423	15.139	0.0	1.651		
P(Bartlett's X2)	0.002*	.	0.001*	0.044*	0.004*	.	0.895		
Replicate F	1.384	0.000	1.238	0.443	1.339	0.000	0.417		
Replicate Prob(F)	0.2799	1.0000	0.3267	0.7250	0.2930	1.0000	0.7427		
Treatment F	51.062	0.000	15.215	39.450	296.145	0.000	766.314		
Treatment Prob(F)	0.0001	1.0000	0.0001	0.0001	0.0001	1.0000	0.0001		

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Pest Type	W Weed		W Weed	W Weed	W Weed		
Pest Code	AMBEL		XANST	GCGAN	AMBEL		
Pest Scientific Name	Ambrosia artem>		Xanthium strum>	Annual grasses	Ambrosia artem>		
Pest Name	Common ragweed		Heart-leaf coc>	Annual grasses	Common ragweed		
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR	
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn	
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	
Description	18-30 IN	18-30 IN	8 FT	8 FT	8 FT	8 FT	
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P	PLOT C	
Rating Date	6-7-2012	6-7-2012	7-12-2012	7-12-2012	7-12-2012	7-12-2012	
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	
Rating Unit	%	%	%	%	%	%	
Number of Subsamples	1	1	1	1	1	1	
Crop Stage Majority	35	35	61	61	61	61	
Pest Stage Majority	2-8 IN		4-36 IN	6-30 IN	4-48 IN		
Pest Density, Unit	2.5 M2		5 M2	80 M2	2.5 M2		
Assessed By	PM	PM	PM	PM	PM	PM	
Days After First/Last Applic.	35 7	35 7	70 42	70 42	70 42	70 42	
Trt-Eval Interval							
Plant-Eval Interval	35 DP-1	35 DP-1	70 DP-1	70 DP-1	70 DP-1	70 DP-1	
Days After Emergence	30 DE-1	30 DE-1	65 DE-1	65 DE-1	65 DE-1	65 DE-1	
Trt No.	8		9	10	11	12	13
Treatment Name	1 UNTREATED		2	3	4	5	6
	0.0 b	0.0 a	0.0 c	0.0 b	0.0 b	0.0 a	
2 Corvus	69 g ai/ha A	100.0 a	0.0 a	99.0 a	93.3 a	100.0 a	0.0 a
Atrazine	1120 g ai/ha A						
Ignite	450 g ai/ha B						
Laudis	92 g ai/ha B						
Clarity	280 g ai/ha B						
N-Pak AMS	8.5 % v/v B						
3 Corvus	69 g ai/ha A	100.0 a	0.0 a	100.0 a	95.3 a	100.0 a	0.0 a
Atrazine	1120 g ai/ha A						
Ignite	450 g ai/ha B						
Laudis	92 g ai/ha B						
Clarity	560 g ai/ha B						
N-Pak AMS	8.5 % v/v B						
4 Corvus	69 g ai/ha A	100.0 a	0.0 a	98.0 a	95.3 a	100.0 a	0.0 a
Atrazine	1120 g ai/ha A						
Ignite	450 g ai/ha B						
Capreno	91 g ai/ha B						
Clarity	280 g ai/ha B						
N-Pak AMS	8.5 % v/v B						
5 Corvus	69 g ai/ha A	100.0 a	0.0 a	100.0 a	96.5 a	100.0 a	0.0 a
Atrazine	1120 g ai/ha A						
Ignite	450 g ai/ha B						
Capreno	91 g ai/ha B						
Clarity	560 g ai/ha B						
N-Pak AMS	8.5 % v/v B						
6 Lumax	1680 g ai/ha A	100.0 a	0.0 a	98.0 a	98.5 a	100.0 a	0.0 a
Halex GT	2210 g ai/ha B						
NIS	0.25 % v/v B						

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Pest Type	W Weed		W Weed	W Weed	W Weed	
Pest Code	AMBEL		XANST	GGGAN	AMBEL	
Pest Scientific Name	Ambrosia artem>		Xanthium strum>	Annual grasses	Ambrosia artem>	
Pest Name	Common ragweed		Heart-leaf coc>	Annual grasses	Common ragweed	
Crop Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
BBCH Scale	BCOR	BCOR	BCOR	BCOR	BCOR	BCOR
Crop Scientific Name	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays	Zea mays
Crop Name	Corn	Corn	Corn	Corn	Corn	Corn
Crop Variety	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
Description	18-30 IN	18-30 IN	8 FT	8 FT	8 FT	8 FT
Part Rated	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P	PLOT C
Rating Date	6-7-2012	6-7-2012	7-12-2012	7-12-2012	7-12-2012	7-12-2012
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	35	35	61	61	61	61
Pest Stage Majority	2-8 IN		4-36 IN	6-30 IN	4-48 IN	
Pest Density, Unit	2.5 M2		5 M2	80 M2	2.5 M2	
Assessed By	PM	PM	PM	PM	PM	PM
Days After First/Last Applic.	35 7	35 7	70 42	70 42	70 42	70 42
Trt-Eval Interval						
Plant-Eval Interval	35 DP-1	35 DP-1	70 DP-1	70 DP-1	70 DP-1	70 DP-1
Days After Emergence	30 DE-1	30 DE-1	65 DE-1	65 DE-1	65 DE-1	65 DE-1
Trt No.	8	9	10	11	12	13
Treatment Name	7 Surestart					
Rate	1190 g ai/ha					
Unit	A					
Appl Code	Durango DMA					
	770 g ae/ha					
	B					
	N-Pak AMS					
	8.5 % v/v					
	B					
LSD (P=.05)	0.00	0.00	4.69	5.15	0.00	0.00
Standard Deviation	0.00	0.00	3.16	3.47	0.00	0.00
CV	0.0	0.0	3.77	4.23	0.0	0.0
Bartlett's X2	0.0	0.0	5.948	6.868	0.0	0.0
P(Bartlett's X2)	.	.	0.114	0.231	.	.
Replicate F	0.000	0.000	1.324	1.704	0.000	0.000
Replicate Prob(F)	1.0000	1.0000	0.2977	0.2020	1.0000	1.0000
Treatment F	0.000	0.000	551.549	436.341	0.000	0.000
Treatment Prob(F)	1.0000	1.0000	0.0001	0.0001	1.0000	1.0000

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 Location: SEPAC Study Director: Paul Marquardt
 Project ID: HP12NARBLN Investigator: Dr. Bill Johnson
 Sponsor Contact: Dave Lamore

Pest Type

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

Pest Code

XANST, Xanthium strumarium, = US

GCGAN, Annual grasses, = US

AMBEL, Ambrosia artemisiifolia, = US

Crop Code

ZEAMX, BCOR, Zea mays, = US

Part Rated

PLOT = plot

P = Pest is Part Rated

C = Crop is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

Crop Stage Majority

09 = Emergence: coleoptile penetrates soil surface (cracking stage)

34 = 4 nodes detectable

35 = 5 nodes detectable

61 = Male:stamens in mid. tassel visible. Female:tip of ear emerging from leaf sheath

M2 = per square meter

Plant-Eval Interval

7 DP-1 = 1 ZEAMX 5-3-2012

28 DP-1 = 1 ZEAMX 5-3-2012

35 DP-1 = 1 ZEAMX 5-3-2012

70 DP-1 = 1 ZEAMX 5-3-2012