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Evaluate burndown and residual efficacy of Corvus, Balance Flexx, and Liberty in notill corn

Trial ID: 12S-SEP-NTC-07 Protocol ID: 12S-SEP-NTC-07
Location: SEPAC Study Director: Paul Marquardt
Project ID: HP12NARBLL 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: Butlerville
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
Phone No.: 812-458-6977
City: Butlerville **Fax No.:** 812-458-6979
State/Prov: IN **Mobile No.:** 812-592-8426
Postal Code: 47223 **E-mail:** biehled@purdue.edu
Country: USA United States

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: 33W84 **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

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Pest Description

Pest 1 Type: W **Code:** ERICA Conyza canadensis
Common Name: Canada horseweed

Pest 2 Type: W **Code:** BROTE Bromus tectorum
Common Name: Downy brome

Pest 3 Type: W **Code:** ALLVI Allium vineale
Common Name: Wild garlic

Pest 4 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Pest 5 Type: W **Code:** XANST Xanthium strumarium
Common Name: Heart-leaf cocklebur

Pest 6 Type: W **Code:** TAROF Taraxacum officinale
Common Name: Common dandelion

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: RACOBL Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description

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

Application Description

	A
Application Date:	5-3-2012
Time of Day:	10:30 AM
Application Method:	SPRAY
Application Timing:	PREPOS
Application Placement:	FOLIAR
Applied By:	JR
Air Temperature, Unit:	78 F
% Relative Humidity:	79
Wind Velocity, Unit:	4.8 MPH
Wind Direction:	W
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	70 F
Soil Moisture:	MOIST
% Cloud Cover:	75

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMX BCOR
Stage Scale Used:	BBCH
Stage Majority, Percent:	00 100

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Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	ERICA W
Stage Majority, Percent:	30 100
Height, Unit:	4 IN
Height Minimum, Maximum:	1 7
Density, Unit:	15 YD2
Pest 2 Code, Type, Scale:	BROTE W
Stage Majority, Percent:	23 100
Height, Unit:	2.5 IN
Height Minimum, Maximum:	1 4
Density, Unit:	50 YD2
Pest 3 Code, Type, Scale:	ALLVI W
Stage Majority, Percent:	21 100
Height, Unit:	12 IN
Height Minimum, Maximum:	6 18
Density, Unit:	20 IN
Pest 4 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	11 100
Height, Unit:	1 IN
Height Minimum, Maximum:	1 1
Density, Unit:	2.5 YD2
Pest 5 Code, Type, Scale:	XANST W
Stage Majority, Percent:	09 100
Height, Unit:	1 IN
Height Minimum, Maximum:	1 1
Density, Unit:	1 YD2
Pest 6 Code, Type, Scale:	TAROF W
Stage Majority, Percent:	61 100
Height, Unit:	2.5 IN
Height Minimum, Maximum:	1 4
Density, Unit:	2.5 YD2

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Application Equipment

	A
Appl. Equipment:	CO2 Backpack
Equipment Type:	SPRBAC
Operation Pressure, Unit:	17 PSI
Nozzle Type:	Flat Fan
Nozzle Size:	XR11002
Nozzle Spacing, Unit:	15 IN
Nozzles/Row:	6
Boom Length, Unit:	7.5 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Carrier:	H2O
Water Hardness (ppm CaCO3):	150
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	1.8 Liters
Propellant:	CO2
Tank Mix (Y/N):	N no

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Project ID: HP12NARBLL Investigator: Dr. Bill Johnson
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Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4	5	6	7
	Pest Type					W Weed	W Weed		W Weed	W Weed	W Weed
	Pest Code					ERICA	XANST		ERICA	GGGAN	XANST
	Pest Scientific Name					Conyza canaden>	Xanthium strum>		Conyza canaden>	Annual grasses	Xanthium strum>
	Pest Name					Canada horsewe>	Heart-leaf coc>		Canada horsewe>	Annual grasses	Heart-leaf coc>
	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	Zea mays
	Crop Name				Corn	Corn	Corn	Corn	Corn	Corn	Corn
	Crop Variety				P33W84	P33W84	P33W84	P33W84	P33W84	P33W84	P33W84
	Part Rated				PLOT C	PLOT C	PLOT C	PLOT C	PLOT P	PLOT P	PLOT P
	Rating Date				5-17-2012	5-17-2012	5-17-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012
	Rating Type				PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO
	Rating Unit				%	%	%	%	%	%	%
	Number of Subsamples				1	1	1	1	1	1	1
	Crop Stage Majority				12	12	12	34	34	34	34
	Pest Stage Majority					1-6"	1-3"		1-8 IN	1-12 IN	1-5 IN
	Pest Density, Unit					5 M2	2.5 M2		5 M2	25 M2	7.5 M2
	Assessed By				PM	PM	PM	PM	PM/JS	PM/JS	PM/JS
	Days After First/Last Applic.				14 14	14 14	14 14	28 28	28 28	28 28	28 28
	Trt-Eval Interval				14 DA-A	14 DA-A	14 DA-A	14 DA-A	28 DA-A	28 DA-A	28 DA-A
	Plant-Eval Interval				14 DP-1	14 DP-1	14 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1
	Days After Emergence				9 DE-1	9 DE-1	9 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1
1	UNTREATED				0.0 a	0.0 b	0.0 c	0.0 a	0.0 b	0.0 b	0.0 c
2	Corvus	129	g ai/ha	A	0.0 a	99.5 a	97.8 a	0.0 a	100.0 a	94.3 a	96.3 a
	Atrazine	1680	g ai/ha	A							
	Roundup PowerMAX	870	g ae/ha	A							
	N-Pak AMS	2.5	% v/v	A							
3	Corvus	129	g ai/ha	A	0.0 a	98.8 a	87.0 b	0.0 a	100.0 a	96.3 a	92.5 ab
	Atrazine	1680	g ai/ha	A							
	Ignite	450	g ai/ha	A							
	N-Pak AMS	2.5	% v/v	A							
4	Corvus	129	g ai/ha	A	0.0 a	100.0 a	100.0 a	0.0 a	100.0 a	92.0 a	97.8 a
	Sharpen	75	g ai/ha	A							
	MSO	1	% v/v	A							
5	Corvus	129	g ai/ha	A	0.0 a	100.0 a	92.5 ab	0.0 a	100.0 a	93.3 a	92.0 ab
	Atrazine	1680	g ai/ha	A							
	Clarity	280	g ai/ha	A							
	COC	1	% v/v	A							
6	Lumax	3370	g ai/ha	A	0.0 a	100.0 a	93.8 ab	0.0 a	100.0 a	98.5 a	88.8 b
	Touchdown Total	880	g ae/ha	A							
	N-Pak AMS	2.5	% v/v	A							
7	UNTREATED				0.0 a	0.0 b	0.0 c	0.0 a	0.0 b	0.0 b	0.0 c
	LSD (P=.05)				0.00	1.42	6.87	0.00	0.00	5.66	4.71
	Standard Deviation				0.00	0.96	4.62	0.00	0.00	3.81	3.17
	CV				0.0	1.35	6.87	0.0	0.0	5.62	4.75
	Bartlett's X2				0.0	2.178	8.308	0.0	0.0	15.419	4.135
	P(Bartlett's X2)				.	0.14	0.04*	.	.	0.004*	0.388
	Replicate F				0.000	1.909	1.841	0.000	0.000	2.585	1.395
	Replicate Prob(F)				1.0000	0.1643	0.1758	1.0000	1.0000	0.0851	0.2767
	Treatment F				0.000	10317.884	398.787	0.000	0.000	592.439	829.864
	Treatment Prob(F)				1.0000	0.0001	0.0001	1.0000	1.0000	0.0001	0.0001

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
Pest Code	AMBEL
Pest Scientific Name	Ambrosia artem>
Pest Name	Common ragweed
Crop Code	ZEAMX
BBCH Scale	BCOR
Crop Scientific Name	Zea mays
Crop Name	Corn
Crop Variety	P33W84
Part Rated	PLOT P
Rating Date	5-31-2012
Rating Type	CONTRO
Rating Unit	%
Number of Subsamples	1
Crop Stage Majority	34
Pest Stage Majority	1-10 IN
Pest Density, Unit	3.5 M2
Assessed By	PM/JS
Days After First/Last Applic.	28 28
Trt-Eval Interval	28 DA-A
Plant-Eval Interval	28 DP-1
Days After Emergence	23 DE-1

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	8
1	UNTREATED				0.0 b
2	Corvus	129	g ai/ha	A	100.0 a
	Atrazine	1680	g ai/ha	A	
	Roundup PowerMAX	870	g ae/ha	A	
	N-Pak AMS	2.5	% v/v	A	
3	Corvus	129	g ai/ha	A	100.0 a
	Atrazine	1680	g ai/ha	A	
	Ignite	450	g ai/ha	A	
	N-Pak AMS	2.5	% v/v	A	
4	Corvus	129	g ai/ha	A	100.0 a
	Sharpen	75	g ai/ha	A	
	MSO	1	% v/v	A	
5	Corvus	129	g ai/ha	A	100.0 a
	Atrazine	1680	g ai/ha	A	
	Clarity	280	g ai/ha	A	
	COC	1	% v/v	A	
6	Lumax	3370	g ai/ha	A	100.0 a
	Touchdown Total	880	g ae/ha	A	
	N-Pak AMS	2.5	% v/v	A	
7	UNTREATED				0.0 b

LSD (P=.05)	0.00
Standard Deviation	0.00
CV	0.0
Bartlett's X2	0.0
P(Bartlett's X2)	.
Replicate F	0.000
Replicate Prob(F)	1.0000
Treatment F	0.000
Treatment Prob(F)	1.0000

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Pest Type
W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop
Pest Code
ERICA, Conyza canadensis, = US
XANST, Xanthium strumarium, = US
GGGAN, Annual grasses, = US
AMBEL, Ambrosia artemisiifolia, = US
Crop Code
ZEAMX, BCOR, Zea mays, = US
Part Rated
PLOT = plot
C = Crop is Part Rated
P = Pest is Part Rated
Rating Type
PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown
Rating Unit
% = percent
Crop Stage Majority
12 = 2 leaves unfolded
34 = 4 nodes detectable

M2 = per square meter
Plant-Eval Interval
14 DP-1 = 1 ZEAMX 5-3-2012
28 DP-1 = 1 ZEAMX 5-3-2012