

# Purdue University

## Efficacy of Corvus and Capreno compared to competitors in a burndown situation

Trial ID: 10S-THP-NTC-38      Protocol ID: 10S-THP-NTC-38  
 Location: TPAC      Study Director: Paul Marquardt/Mike White  
 Project ID:      Investigator: Dr. Bill Johnson  
                          Sponsor Contact: Dave Lamore

### General Trial Information

**Study Director:** Paul Marquardt/Mike White    **Title:** Research Associate  
**Investigator:** Dr. William G. Johnson      **Title:** Professor

**Discipline:** H herbicide  
**Trial Status:** E established  
**Initiation Date:** 3-9-2010

### Trial Location

**City:** Butlerville  
**State/Prov.:** IN  
**Postal Code:** 47223-0216  
**Country:** USA

### Personnel

**Study Director:** Paul Marquardt/Mike White    **Title:** Research Associate

**Affiliation:** Purdue University  
**Address:** 915 W. State St., Botany and Plant Pathology  
**Location:** West Lafayette, IN

**Postal Code:** 47907      **E-mail:** pmarquar@purdue.edu

**Phone No.:** 765-494-4621    **Mobile No.:** 765-409-6369

**Investigator:** Dr. William G. Johnson      **Title:** Professor

**Affiliation:** Purdue University  
**Address:** 915 W. State St.  
**Location:** West Lafayette, IN USA

**Postal Code:** 47907      **E-mail:** wgj@purdue.edu

**Phone No.:** 765-494-4656

### Cooperator/Landowner

**Cooperator:** Southeastern-Purdue Ag Center      **Role:** Cooperator

**Organization:** Purdue University  
**Address 1:** 4425 E Co. Rd. 350 N

**Phone No.:** 1-812-458-6977

**Fax No.:** 1-812-458-6979

**City:** Butlerville

**State/Prov.:** IN

**Postal Code:** 477223-021      **E-mail:** biehled@purdue.edu

**Country:** USA      United States

### Crop Description

**Crop 1:** ZEAMX    Zea mays      Corn

**Variety:** PIONEER 331084

**BBCH Scale:** BCOR

**Description:** Roundup Ready/Liberty Link

**Planting Date:** 4-20-2010

**Rate, Unit:** 32000      S/A

**Depth, Unit:** 1      IN

**Row Spacing, Unit:** 30      IN

**Seed Bed:** MEDIUM    medium

**Soil Temperature, Unit:** 55      F

**Soil Moisture:** DRY      dry

**Emergence Date:** 5-2-2010

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Pest Description	
<b>Pest 1 Type:</b> W	<b>Code:</b> THLSS <i>Thlaspi</i> sp. <b>Common Name:</b> Pennycress
<b>Pest 2 Type:</b> W	<b>Code:</b> LAMPU <i>Lamium purpureum</i> <b>Common Name:</b> Purple deadnettel
<b>Pest 3 Type:</b> W	<b>Code:</b> LAMAM <i>Lamium amplexicaule</i> <b>Common Name:</b> Henbit
<b>Pest 4 Type:</b> W	<b>Code:</b> TAROF <i>Taraxacum officinale</i> <b>Common Name:</b> Common dandelion
<b>Pest 5 Type:</b> W	<b>Code:</b> LACSE <i>Lactuca serriola</i> <b>Common Name:</b> Prickly lettuce
<b>Pest 6 Type:</b> W	<b>Code:</b> HLOUM <i>Holosteum umbellatum</i> <b>Common Name:</b> Jagged chickweed
<b>Pest 7 Type:</b> W	<b>Code:</b> STEME <i>Stellaria media</i> <b>Common Name:</b> Common chickweed
<b>Pest 8 Type:</b> W	<b>Code:</b> ERICA <i>Conyza canadensis</i> <b>Common Name:</b> Canada horseweed

Site and Design	
<b>Plot Width, Unit:</b> 10 FT	<b>Site Type:</b> FIELD field
<b>Plot Length, Unit:</b> 30 FT	<b>Experimental Unit:</b> 1 PLOT plot
<b>Plot Area, Unit:</b> 300 FT <sup>2</sup>	<b>Tillage Type:</b> NOTILL no-till
<b>Replications:</b> 4	<b>Study Design:</b> RACOB� Randomized Complete Block (RCB)
	<b>Untreated Arrangement:</b> INCLUDED single control randomized in each block

Soil Description	
<b>Description Name:</b> SEPAC Field U41-6	
<b>% OM:</b> 1.3	<b>Texture:</b> SIL silt loam
<b>pH:</b> 6.5	<b>Soil Name:</b> Avonburg
<b>CEC:</b> 5.7	

Application Description	
	<b>A</b>
<b>Application Date:</b>	4-15-2010
<b>Time of Day:</b>	8:30-9
<b>Application Method:</b>	SPRAY
<b>Application Timing:</b>	PREPLA
<b>Application Placement:</b>	BROADC
<b>Applied By:</b>	RH
<b>Air Temperature, Unit:</b>	66 F
<b>% Relative Humidity:</b>	48
<b>Wind Velocity, Unit:</b>	5 MPH
<b>Wind Direction:</b>	S
<b>Dew Presence (Y/N):</b>	N no
<b>Soil Temperature, Unit:</b>	60 F
<b>Soil Moisture:</b>	DRY
<b>% Cloud Cover:</b>	0

Crop Stage At Each Application	
	<b>A</b>
<b>Crop 1 Code, BBCH Scale:</b>	ZEAMX BCOR

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Pest Stage At Each Application	
	A
<b>Pest 1 Code, Type, Scale:</b>	THLSS W
<b>Stage Majority, Percent:</b>	65 100
<b>Height, Unit:</b>	6.5 IN
<b>Height Minimum, Maximum:</b>	3 10
<b>Density, Unit:</b>	50 YD2
<b>Pest 2 Code, Type, Scale:</b>	LAMPU W
<b>Stage Majority, Percent:</b>	65 100
<b>Height, Unit:</b>	7 IN
<b>Height Minimum, Maximum:</b>	4 10
<b>Density, Unit:</b>	5.5 YD2
<b>Pest 3 Code, Type, Scale:</b>	LAMAM W
<b>Stage Majority, Percent:</b>	65 100
<b>Height, Unit:</b>	7 IN
<b>Height Minimum, Maximum:</b>	4 10
<b>Density, Unit:</b>	5.5 YD2
<b>Pest 4 Code, Type, Scale:</b>	TAROF W
<b>Stage Minimum, Percent:</b>	40 50
<b>Stage Maximum, Percent:</b>	65 50
<b>Height, Unit:</b>	6 IN
<b>Height Minimum, Maximum:</b>	2 10
<b>Density, Unit:</b>	3 YD2
<b>Pest 5 Code, Type, Scale:</b>	LACSE W
<b>Stage Majority, Percent:</b>	40 100
<b>Height, Unit:</b>	5 IN
<b>Height Minimum, Maximum:</b>	2 10
<b>Density, Unit:</b>	34.5 YD2
<b>Pest 6 Code, Type, Scale:</b>	HLOUM W
<b>Stage Majority, Percent:</b>	65 100
<b>Height, Unit:</b>	7 IN
<b>Height Minimum, Maximum:</b>	4 10
<b>Density, Unit:</b>	10.5 YD2
<b>Pest 7 Code, Type, Scale:</b>	STEME W
<b>Stage Majority, Percent:</b>	65 100
<b>Height, Unit:</b>	4 IN
<b>Height Minimum, Maximum:</b>	2 6
<b>Density, Unit:</b>	5.5 YD2
<b>Pest 8 Code, Type, Scale:</b>	ERICA W
<b>Stage Majority, Percent:</b>	ROSET 100
<b>Height, Unit:</b>	4 IN
<b>Height Minimum, Maximum:</b>	2 6
<b>Density, Unit:</b>	2 YD2

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Application Equipment	
	A
Appl. Equipment:	CO2 Backpack
Operating 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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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	THLSS	ERICA	STEME	LACSE	TAROF	LAMAM	ERICA				
Pest Scientific Name	Thlaspi sp.	Conyza canaden>	Stellaria media	Lactuca serrio>	Taraxacum offi>	Lamium amplexi>	Conyza canaden>				
Pest Name	Pennycress	Canada horsewe>	Common chickwe>	Prickly lettuce	Common dandel>		Canada horsewe>				
Crop Code											
BBCH Scale											
Crop Scientific Name											
Crop Name											
Crop Variety											
Description											
Rating Date	4-30-2010	4-30-2010	4-30-2010	4-30-2010	4-30-2010	4-30-2010	5-14-2010				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority											
Pest Stage Majority	10"	4"	5"	5"	5"	6"	6"				
Pest Density, Unit	3 YD2	7 YD2	7 YD2	10 YD2	2 YD2	5 YD2	10.5YD2				
Assessed By	MW	MW	MW	MW	MW	MW	RH/RT				
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5	6	7
9	Balance Flexx	0.0313 lb ai/a	A		59.8 ab	99.0 a	52.5 bcd	72.0 ab	37.3 cde	5.0 c	90.3 ab
	Capreno	0.054 lb ai/a	A								
	COC	1 % v/v	A								
	N-PAK AMS	2.5 % v/v	A								
10	Corvus	0.115 lb ai/a	A		99.0 a	99.0 a	99.0 a	99.0 a	95.5 a	95.5 a	95.0 ab
	Ignite 280 SL	0.402 lb ae/a	A								
	N-PAK AMS	2.5 % v/v	A								
11	Ignite 280 SL	0.402 lb ae/a	A		99.0 a	93.3 a	96.8 a	99.0 a	93.0 a	96.8 a	83.8 b
	Sharpen	0.0223 lb ai/a	A								
	N-PAK AMS	2.5 % v/v	A								
12	Corvus	0.115 lb ai/a	A		85.8 a	99.0 a	85.0 a	99.0 a	84.3 ab	40.0 b	96.3 a
	Sharpen	0.0223 lb ai/a	A								
	COC	1 % v/v	A								
	N-PAK AMS	2.5 % v/v	A								
LSD (P=.05)					29.78	32.17	22.88	21.68	27.85	24.01	8.24
Standard Deviation					20.62	22.28	15.84	15.01	19.29	16.63	5.70
CV					33.16	27.95	24.53	21.76	41.24	46.25	6.72
Bartlett's X2					20.146	14.158	25.393	9.255	19.91	26.397	25.993
P(Bartlett's X2)					0.01*	0.028*	0.003*	0.16	0.03*	0.002*	0.004*
Replicate F					0.143	3.167	2.857	2.590	1.083	0.131	4.306
Replicate Prob(F)					0.9335	0.0372	0.0519	0.0694	0.3696	0.9407	0.0114
Treatment F					11.921	6.732	16.033	19.256	11.707	22.449	94.059
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	0.0001	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.

Column 1: Weed or volunteer crop; US; control / burndown or knockdown; percent; 10"; per square yard; MW
Column 2: Weed or volunteer crop; US; control / burndown or knockdown; percent; 4"; per square yard; MW
Column 3: Weed or volunteer crop; US; control / burndown or knockdown; percent; 5"; per square yard; MW
Column 4: Weed or volunteer crop; US; control / burndown or knockdown; percent; 5"; per square yard; MW
Column 5: Weed or volunteer crop; US; control / burndown or knockdown; percent; 5"; per square yard; MW
Column 6: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6"; per square yard; MW
Column 7: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6"; per square yard; RH/RT
Column 8: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6"; YD2; RH/RT
Column 9: Weed or volunteer crop; US; control / burndown or knockdown; percent; 8"; per square yard; RH/RT
Column 10: Weed or volunteer crop; US; control / burndown or knockdown; percent; 6"; per square yard; RH/RT

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Pest Type				W Weed	W Weed	W Weed	
Pest Code				STEME	LACSE	VEROF	
Pest Scientific Name				Stellaria media	Lactuca serrio>	Veronica offic>	
Pest Name				Common chickwe>	Prickly lettuce	Common speedwe>	
Crop Code							
BBCH Scale							
Crop Scientific Name							
Crop Name							
Crop Variety							
Description							
Rating Date				5-14-2010	5-14-2010	5-14-2010	
Rating Type				CONTRO	CONTRO	CONTRO	
Rating Unit				%	%	%	
Number of Subsamples				1	1	1	
Crop Stage Majority							
Pest Stage Majority				6"	8"	6"	
Pest Density, Unit				51.5 YD2	5.5 YD2	51.5YD2	
Assessed By				RH/RT	RH/RT	RH/RT	
Trt	Treatment	Rate	Appl				
No.	Name	Rate	Unit	Code	8	9	
						10	
1	UNTREATED				0.0 c	0.0 b	0.0 b
2	Corvus	0.115 lb ai/a	A		100.0 a	100.0 a	100.0 a
	AAtrex	1 lb ai/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
3	Corvus	0.115 lb ai/a	A		84.8 ab	100.0 a	97.5 a
	2,4-D Ester	0.5 lb ai/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
4	Corvus	0.115 lb ai/a	A		100.0 a	100.0 a	100.0 a
	Roundup PowerMax	0.77 lb ae/a	A				
	N-PAK AMS	2.5 % v/v	A				
5	Corvus	0.115 lb ai/a	A		94.3 a	98.5 a	100.0 a
	Laudis	0.0273 lb ai/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
6	Corvus	0.115 lb ai/a	A		93.0 a	100.0 a	100.0 a
	Clarity	0.125 lb ai/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
7	Corvus	0.115 lb ai/a	A		95.5 a	100.0 a	100.0 a
	Cadet	0.00284 lb ai/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				
8	Capreno	0.081 lb ai/a	A		100.0 a	100.0 a	100.0 a
	Roundup PowerMax	0.387 lb ae/a	A				
	COC	1 % v/v	A				
	N-PAK AMS	2.5 % v/v	A				

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				W Weed STEME	W Weed LACSE	W Weed VEROF
Pest Type				Stellaria media	Lactuca serrio>	Veronica offic>
Pest Code				Common chickwe>	Prickly lettuce	Common speedwe>
Pest Scientific Name						
Pest Name						
Crop Code						
BBCH Scale						
Crop Scientific Name						
Crop Name						
Crop Variety						
Description						
Rating Date				5-14-2010	5-14-2010	5-14-2010
Rating Type				CONTRO	CONTRO	CONTRO
Rating Unit				%	%	%
Number of Subsamples				1	1	1
Crop Stage Majority						
Pest Stage Majority				6"	8"	6"
Pest Density, Unit				51.5 YD2	5.5 YD2	51.5 YD2
Assessed By				RH/RT	RH/RT	RH/RT
Trt No.	Treatment Name	Rate	Appl Unit Code	8	9	10
9	Balance Flexx	0.0313 lb ai/a	A	76.3 b	99.8 a	97.3 a
	Capreno	0.054 lb ai/a	A			
	COC	1 % v/v	A			
	N-PAK AMS	2.5 % v/v	A			
10	Corvus	0.115 lb ai/a	A	86.8 ab	99.3 a	100.0 a
	Ignite 280 SL	0.402 lb ae/a	A			
	N-PAK AMS	2.5 % v/v	A			
11	Ignite 280 SL	0.402 lb ae/a	A	74.3 b	100.0 a	100.0 a
	Sharpen	0.0223 lb ai/a	A			
	N-PAK AMS	2.5 % v/v	A			
12	Corvus	0.115 lb ai/a	A	96.5 a	97.5 a	100.0 a
	Sharpen	0.0223 lb ai/a	A			
	COC	1 % v/v	A			
	N-PAK AMS	2.5 % v/v	A			
LSD (P=.05)				10.63	2.58	2.43
Standard Deviation				7.36	1.79	1.68
CV				8.83	1.96	1.84
Bartlett's X2				18.489	11.607	0.57
P(Bartlett's X2)				0.01*	0.009*	0.45
Replicate F				5.236	0.399	1.483
Replicate Prob(F)				0.0046	0.7546	0.2372
Treatment F				56.706	1032.346	1170.631
Treatment Prob(F)				0.0001	0.0001	0.0001