

**Fall-planted cover crop effects on horsweed control in dry edible beans**

Trial ID: DB02-21 Study Dir.: Sprague, Stiles, Sprague  
 Conducted: Campus, T-11 Investigator:

**Planting Date:** Jun-2-2021 **Row Spacing:** 30 IN  
**Variety:** 'Zenith' **No. of Reps:** 4  
**Population:** 109000 seeds/A **% OM:** 2.1  
**Soil Type:** CL clay loam **pH:** 6.9  
**Plot Size:** 10 X 50 FT **Study Design:** Randomized Complete Block (RCB)

**Tillage/Previous Crops:** No-tilled into terminated and standing rye

**Fertilizer:**

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1	ERICA	horsweed	Erigeron canadensis
Crop	Code	Common Name	
1	PHAVU	black bean	

**Application Description**

	A	B	C
<b>Application Timing:</b>	14 EPP	Roller/Crimp	POST
<b>Date Treated:</b>	May-21-2021	Jul-2-2021	Jul-21-2021
<b>Time Treated:</b>	11:00 AM		9:00 AM
<b>% Cloud Cover:</b>	40		50
<b>Air Temp., Unit:</b>	80 F		63 F
<b>% Relative Humidity:</b>	45		75
<b>Wind Speed/Unit/Dir:</b>	8 MPH SW		4 MPH NE
<b>Soil Temp, Unit:</b>	61 F		72 F
<b>Leaf Moist/Dew Presence (Y/N):</b>	N		N
<b>Soil Moist:</b>	5		4

**Crop Stage at Each Application**

	A	B	C
<b>Crop 1 Name:</b>	PHAVU	PHAVU	PHAVU
<b>Height:</b>			4-8 " (6)
<b>Stage:</b>		V2	V2

**Weed Stage at Each Application**

	A	B	C
<b>Weed 1 Name:</b>	ERICA	ERICA	ERICA
<b>Height:</b>			4-30 " (18)
<b>Stage:</b>			bolt

**Weed Density**

	1
<b>Date:</b>	Jul-21-2021
<b>Weed Name:</b>	ERICA
<b>Density:</b>	3 FT2

**Application Equipment**

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	DEMCO	4 MPH	AIXR	11003	36.0 "	20.0 "	360.0 "	19 GAL/AC	WATER	30 PSI
B	ROLLER									
C	CUB	3.8 MPH	AIXR	11003	36.0 "	20.0 "	120.0 "	19 GAL/AC	WATER	30 PSI

**Comments:**

Cereal rye and winter wheat at 60 lb/A were planted on Oct. 16, 2020. Cereal rye at Feekes 10.5 and 36-inches tall and winter wheat at Feekes 10 and 22-inches tall were terminated on May 21, 2021. Horsweed (marestail) at this location is glyphosate (Group 9) and ALS (Group 2) resistant. Sharpen at 1 fl oz/A was applied as a preharvest treatment on Sept. 25, 2021.

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Location: Campus, T-11

Trial Year: 2021

Protocol ID: DB02-21

Investigator (Creator): Christy Sprague

Project ID:

Study Director: Sprague, Stiles, Sprague

Sponsor Contact:

Pest Code						ERICA		ERICA		ERICA		
Crop Type, Code						C, PHAVU		C, PHAVU		C, PHAVU		
Rating Date						Jul-13-2021		Jul-13-2021		Jul-30-2021		
Rating Type						injury		injury		injury		
Rating Unit/Min/Max						%, 0, 100		%, 0, 100		%, 0, 100		
Trt-Eval Interval						11 DA-B		11 DA-B		9 DA-C		
Number of Decimals						0		0		0		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Appl Timing	Appl Code	1	2	3	4	5	6
1	No cover						0	0	0	0	0	61
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
2	Wheat (60 lb/A)						5	91	5	92	75	25
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
3	Wheat (60 lb/A)						3	91	6	91	75	21
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
4	Cereal rye (60 lb/A)						6	94	5	96	91	13
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
5	Cereal rye (60 lb/A)						5	98	5	98	95	12
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
6	Cereal rye (60 lb/A)						11	99	8	96	89	11
	Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
	AMS	WG		17 lb/100 gal		14 EPP A						
	Roller					PRE B						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						
7	Cereal rye (60 lb/A)						20	100	12	98	97	2
	Roller crimper					PRE B						
	Reflex	2 L		1 pt/a		POST C						
	Raptor	1 L		4 fl oz/a		POST C						
	Basagran	4 L		16 fl oz/a		POST C						
	Crop oil concentrate	L		1 % v/v		POST C						
	AMS	WG		2.5 lb/a		POST C						

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 Protocol ID: DB02-21 Investigator (Creator): Christy Sprague  
 Project ID: Study Director: Sprague, Stiles, Sprague  
 Sponsor Contact:

Pest Code			ERICA		ERICA		ERICA				
Crop Type, Code			C, PHAVU		C, PHAVU		C, PHAVU				
Rating Date			Jul-13-2021	Jul-13-2021	Jul-30-2021	Jul-30-2021	Aug-26-2021	Aug-26-2021			
Rating Type			injury	control	injury	control	control	maturity			
Rating Unit/Min/Max			%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100			
Trt-Eval Interval			11 DA-B	11 DA-B	9 DA-C	9 DA-C	36 DA-C	36 DA-C			
Number of Decimals			0	0	0	0	0	0			
Trt Treatment No. Name	Form Conc	Form Type	Rate Unit	Appl Timing	Appl Code	1	2	3	4	5	6
8 No cover						0	0	0	0	0	61
Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
AMS		WG	17 lb/100 gal		14 EPP A						
Reflex	2 L		1 pt/a		POST C						
Raptor	1 L		4 fl oz/a		POST C						
Basagran	4 L		16 fl oz/a		POST C						
Crop oil concentrate		L	1 % v/v		POST C						
AMS		WG	2.5 lb/a		POST C						
9 Wheat (60 lb/A)						6	95	4	99	90	16
Roundup PowerMax	4.5 SL		32 fl oz/a		14 EPP A						
AMS		WG	17 lb/100 gal		14 EPP A						
Roller					PRE B						
Reflex	2 L		1 pt/a		POST C						
Raptor	1 L		4 fl oz/a		POST C						
Basagran	4 L		16 fl oz/a		POST C						
Crop oil concentrate		L	1 % v/v		POST C						
AMS		WG	2.5 lb/a		POST C						
LSD P=.05						4.4	5.2	4.5	7.2	12.0	7.1
Standard Deviation						3.0	3.5	3.1	5.0	8.2	4.9
CV						49.3	4.77	63.12	6.67	12.06	19.73

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Project ID:

Study Director: Sprague, Stiles, Sprague

Sponsor Contact:

Pest Code	Crop Type, Code	Rating Date	Rating Type	Rating Unit/Min/Max	Trt-Eval Interval	Number of Decimals	C, PHAVU Sep-10-2021	C, PHAVU Sep-24-2021	C, PHAVU Oct-11-2021	C, PHAVU Oct-11-2021	
							maturity %, 0, 100	maturity %, 0, 100	% moisture %, 0, 100	yield cwt/acre, -, -	
							51 DA-C	65 DA-C	82 DA-C	82 DA-C	
							0	0	1	1	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code	7	8	9	10
1	No cover							85	90	22.0	40.6
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
2	Wheat (60 lb/A)							73	78	22.9	29.6
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
3	Wheat (60 lb/A)							73	78	22.0	31.8
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
4	Cereal rye (60 lb/A)							70	77	22.3	32.6
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
5	Cereal rye (60 lb/A)							68	72	22.3	29.3
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
6	Cereal rye (60 lb/A)							70	75	23.3	29.9
	Roundup PowerMax	4.5	SL	32 fl oz/a		14 EPP	A				
	AMS		WG	17 lb/100 gal		14 EPP	A				
	Roller					PRE	B				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				
7	Cereal rye (60 lb/A)							65	75	22.1	28.9
	Roller crimper					PRE	B				
	Reflex	2	L	1 pt/a		POST	C				
	Raptor	1	L	4 fl oz/a		POST	C				
	Basagran	4	L	16 fl oz/a		POST	C				
	Crop oil concentrate		L	1 % v/v		POST	C				
	AMS		WG	2.5 lb/a		POST	C				

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Crop Type, Code	C, PHAVU									
Rating Date	Sep-10-2021	Sep-24-2021	Oct-11-2021	Oct-11-2021						
Rating Type	maturity	maturity	% moisture	yield						
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	cwt/acre, -, -						
Trt-Eval Interval	51 DA-C	65 DA-C	82 DA-C	82 DA-C						
Number of Decimals	0	0	1	1						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Appl Timing	Appl Code	7	8	9	10
8	No cover						88	90	22.4	39.4
	Roundup PowerMax	4.5 SL		32 fl oz/a	14 EPP	A				
	AMS	WG		17 lb/100 gal	14 EPP	A				
	Reflex	2 L		1 pt/a	POST	C				
	Raptor	1 L		4 fl oz/a	POST	C				
	Basagran	4 L		16 fl oz/a	POST	C				
	Crop oil concentrate	L		1 % v/v	POST	C				
	AMS	WG		2.5 lb/a	POST	C				
9	Wheat (60 lb/A)						73	75	21.6	33.7
	Roundup PowerMax	4.5 SL		32 fl oz/a	14 EPP	A				
	AMS	WG		17 lb/100 gal	14 EPP	A				
	Roller				PRE	B				
	Reflex	2 L		1 pt/a	POST	C				
	Raptor	1 L		4 fl oz/a	POST	C				
	Basagran	4 L		16 fl oz/a	POST	C				
	Crop oil concentrate	L		1 % v/v	POST	C				
	AMS	WG		2.5 lb/a	POST	C				
	LSD P=.05						5.6	6.4	1.27	4.74
	Standard Deviation						3.8	4.4	0.87	3.21
	CV						5.19	5.59	3.91	9.93