

Overlapping residuals for waterhemp control in dry edible beans

Trial ID: DB03-21
 Conducted: Shiawassee County

Study Dir.: Sprague, Powell, Stiles
 Investigator:

Planting Date: May-20-2021 **Row Spacing:** 30 IN
Variety: 'Zenith' **No. of Reps:** 4
Population: 109000 seeds/A **% OM:** 4.2
Soil Type: CL clay loam **pH:** 6.6
Plot Size: 10 X 25 FT **Study Design:** Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring disked corn stubble

Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	AMATU	waterhemp	Amaranthus tuberculatus
Crop	Code	Common Name	
1	PHAVU	black bean	

Application Description

	A	B
Application Timing:	PRE	POST
Date Treated:	May-20-2021	Jun-16-2021
Time Treated:	11:10 AM	8:45 AM
% Cloud Cover:	70	15
Air Temp., Unit:	79 F	61
% Relative Humidity:	53	56
Wind Speed/Unit/Dir:	7 MPH S	2 MPH N
Soil Temp, Unit:	66.4 F	66.4 F
Leaf Moist/Dew Presence (Y/N):	N	N
Soil Moist:	5	4

Crop Stage at Each Application

	A	B
Crop 1 Name:	PHAVU	PHAVU
Height:		6-7 " (6.5)
Stage:		V3

Weed Stage at Each Application

	A	B
Weed 1 Name:	AMATU	AMATU
Height:		1-6 " (4)
Stage:		6L-14L (8L)

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.3 MPH	AIXR	AIXR	22.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI
B	CUB	3.3 MPH	AIXR	AIXR	26.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	30 PSI

Comments: Waterhemp at this location is Group 2 & 9 (ALS & glyphosate) resistant.

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						C, PHAVU	AMATU	AMATU	CHEAL	ABUTH	C, PHAVU
						Jun-16-2021	Jun-16-2021	Jul-7-2021	Jul-7-2021	Jul-7-2021	Jul-21-2021
						injury	control	control	control	control	injury
						%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
						0 DA-B	0 DA-B	21 DA-B	21 DA-B	21 DA-B	35 DA-B
						0	0	0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Appl Timing Code	1	2	3	4	5	6
1	Reflex	2 L		1 pt/a	POST B	0	0	81	90	94	14
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
2	Outlook	6 L		21 fl oz/a	POST B	0	0	91	99	98	12
	Reflex	2 L		1 pt/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
3	Dual II Magnum	7.64 L		2 pt/a	POST B	0	0	97	100	98	7
	Reflex	2 L		1 pt/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
4	Warrant	3 L		3 pt/a	POST B	0	0	95	91	99	12
	Reflex	2 L		1 pt/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
5	Untreated					0	0	0	0	0	0
6	Outlook	6 L		11 fl oz/a	PRE A	0	99	99	99	100	9
	Outlook	6 L		10 fl oz/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
7	Dual II Magnum	7.64 L		1 pt/a	PRE A	0	98	96	100	100	10
	Dual II Magnum	7.64 L		1 pt/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
8	Warrant	3 L		1.5 pt/a	PRE A	0	99	99	98	100	8
	Warrant	3 L		1.5 pt/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
9	Reflex	2 L		1 pt/a	POST B	0	0	81	97	97	14
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
10	Outlook	6 L		11 fl oz/a	PRE A	0	98	100	100	100	14
	Outlook	6 L		10 fl oz/a	POST B						
	Reflex	2 L		1 pt/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
11	Dual II Magnum	7.64 L		1 pt/a	PRE A	0	99	100	100	100	16
	Dual II Magnum	7.64 L		1 pt/a	POST B						
	Reflex	2 L		1 pt/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
12	Warrant	3 L		1.5 pt/a	PRE A	0	96	100	100	100	14
	Warrant	3 L		1.5 pt/a	POST B						
	Reflex	2 L		1 pt/a	POST B						
	Varisto	4.18 L		21 fl oz/a	POST B						
	Crop oil concentrate	L		1 % v/v	POST B						
	AMS	WG		2.5 lb/gal	POST B						
	LSD P=.05					.	3.8	8.1	5.4	5.7	7.0
	Standard Deviation					0.0	2.7	5.6	3.8	4.0	4.9
	CV					0.0	5.46	6.5	4.19	4.38	46.01

Could not calculate LSD (% mean diff) for columns 1,8 because error mean square = 0.

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						AMATU	C, PHAVU	AMATU	
						Jul-21-2021	Aug-11-2021	Aug-11-2021	
						control	injury	control	
						% 0, 100	% 0, 100	% 0, 100	
						35 DA-B	56 DA-B	56 DA-B	
						0	0	0	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Appl Timing	Appl Code	7	8	9
1	Reflex	2 L		1 pt/a	POST B		79	0	61
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
2	Outlook	6 L		21 fl oz/a	POST B		88	0	81
	Reflex	2 L		1 pt/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
3	Dual II Magnum	7.64 L		2 pt/a	POST B		88	0	86
	Reflex	2 L		1 pt/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
4	Warrant	3 L		3 pt/a	POST B		84	0	81
	Reflex	2 L		1 pt/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
5	Untreated						0	0	0
6	Outlook	6 L		11 fl oz/a	PRE A		98	0	95
	Outlook	6 L		10 fl oz/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
7	Dual II Magnum	7.64 L		1 pt/a	PRE A		93	0	88
	Dual II Magnum	7.64 L		1 pt/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
8	Warrant	3 L		1.5 pt/a	PRE A		93	0	89
	Warrant	3 L		1.5 pt/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
9	Reflex	2 L		1 pt/a	POST B		77	0	68
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
10	Outlook	6 L		11 fl oz/a	PRE A		100	0	96
	Outlook	6 L		10 fl oz/a	POST B				
	Reflex	2 L		1 pt/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
11	Dual II Magnum	7.64 L		1 pt/a	PRE A		100	0	100
	Dual II Magnum	7.64 L		1 pt/a	POST B				
	Reflex	2 L		1 pt/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
12	Warrant	3 L		1.5 pt/a	PRE A		100	0	98
	Warrant	3 L		1.5 pt/a	POST B				
	Reflex	2 L		1 pt/a	POST B				
	Varisto	4.18 L		21 fl oz/a	POST B				
	Crop oil concentrate	L		1 % v/v	POST B				
	AMS	WG		2.5 lb/gal	POST B				
	LSD P=.05						10.8	.	11.5
	Standard Deviation						7.5	0.0	8.0
	CV						9.01	0.0	10.18

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