Renz Weed Science
COLLEGE OF AGRICULTURAL & LIFE SCIENCES
UNIVERSITY OF WISCONSIN-MADISON

Extension
UNIVERSITY OF WISCONSIN-MADISON

ID #16-5

UW – Madison Weed Science Renz Lab

2016 Corn+Alfalfa Interseeding Herbicide and Soil Fertility Studies

Investigator: Mark Renz

Location: Lancaster Agricultural Research Station, Lancaster, WI

Plot Information:

Field: 304 C

Plot Dimensions: 10 x 25 ft

Design: RCB, 4 blocks

Corn: 35k seeds/A; 30" Spacing

Variety: HIDF-3105RA

Alfalfa: 16 lbs PLS/A,

Variety: 55H94

Soil Type: FaC2 (Fayette silt loam, uplands, 6 to 10 percent slopes, moderately eroded)

Seeded: 5/19/16

Field History:

Previous Crop & Tillage: No-till Corn

Fertilizer:

Fall: 870lbs/A of 8.4-14.9-33.3-2.9

Seeding: 280lbs/A of 35-6-7 at seeding

Sidedress: 435lbs/A of 23-0-0-11

Herbicide Treatments:

Trt No.	Type	Treatment Name	Form Conc	Form Type	Rate	Timing	Mix Size	Crops	Plots
1	HERB	WARRANT	3 LB/GAL	CS	3 pt/a	PRE	2 liters	CORN+ALF	109, 209, 305, 408
2	HERB	DUAL MAGNUM	7.62 LB/GAL	EC	1 pt/a	PRE	2 liters	CORN+ALF	106, 208, 309, 410
3	HERB HERB	WARRANT DUAL MAGNUM	3 LB/GAL 7.62 LB/GAL	CS EC	3 pt/a 1 pt/a	PRE PRE	2 liters	CORN+ALF	108, 201, 304, 406
4	HERB HERB	WARRANT BUCTRIL	3 LB/GAL 4 LB/GAL	CS EC	3 pt/a 1 pt/a	PRE POST	2 liters	CORN+ALF	102, 202, 301, 403
5	HERB HERB	DUAL MAGNUM BUCTRIL	7.62 LB/GAL 4 LB/GAL	EC EC	1 pt/a 1 pt/a	PRE POST	2 liters	CORN+ALF	101, 203, 306, 409
6	HERB HERB HERB	WARRANT DUAL MAGNUM BUCTRIL	3 LB/GAL 7.62 LB/GAL 4 LB/GAL	CS EC EC	3 pt/a 1 pt/a 1 pt/a	PRE PRE POST	2 liters	CORN+ALF	110, 207, 310, 402
7	HERB	BUCTRIL	4 LB/GAL	EC	1 pt/a	POST	2 liters	CORN+ALF	105, 210, 307, 404
8	HERB HERB	WARRANT BUCTRIL	3 LB/GAL 4 LB/GAL	CS EC	3 pt/a 1 pt/a	PRE POST	2 liters	CORN	103, 204, 303, 401
9	CHK	CONTROL						CORN+ALF	107, 205, 308, 405
10	CHK	CONTROL						CORN	104, 206, 302, 407

Herbicide Applications:

Equipment: Backpack sprayer (15 GPA, 18 psi)

Nozzles: Six (6) Flat Tip XR TeeJet 11002 VS, Spacing = 20 in (10 ft boom)

Application Dates:

Treatment (Timing)	App A; Pre's 5/19/16	App B; Treat 7 6/16/16	App C; Posts 6/16/16	App D; Apogee 6/16/16
Temp (°C)	20.8	26.2	26.2	26.2
Wind (KPH & Dir.)	9.17 SE	4.66 NW	4.66 NW	4.66 NW
Relative Humidity	42%	73.2%	73.2%	73.2%
Sky	85% Clear	25% Clear	25% Clear	25% Clear
Soil Temp @ 2" (°C)	19.4	28.3	28.3	28.3

Other Pesticides: None

Notes:

6/9/16 Alfalfa 5th TL (0-5")

Weeds*: C. Lambsquarters, Knotweed, Velvetleaf Speedwell (2-5")

6/16/16 Weeds*: C. Lambsquarters, Knotweed, Dandelion, Speedwell, R. Pigweed, Velvetleaf (2-10")

6/28/16 Corn V7

Alfalfa (10-15")

Weeds*: Foxtail(s), R. Pigweed, C. Lambsquarters, Dandelion, Velvetleaf, Knotweed (8-30")

7/13/16 Corn V10

Weeds*: Foxtail(s), C. Lambsquarters, R. Pigweed, Velvetleaf (10-40")

*Weeds recorded in non-treated control plots

Results:

Pre-emergence Treatments 28 DAT (6/16/16)

Rating Type		Alfalfa Cover (%)		Corn Cover (%)		Weed Cover (%)		Broadleaf Cover (%)		Grass Cover (%)		Ground Cover (%)	
Trt	**Treatment**												
1	WARRANT	45.8	b	18	-	1.3	b	1.3	-	0	b	35	e
2	DUAL MAGNUM	22.5	cd	18	-	2	b	2	-	0	b	57.5	cd
3	WARRANT DUAL MAGNUM	15	d	18	-	2	b	2	-	0	b	65	bc
4	WARRANT BUCTRIL	47.5	b	18	-	1.8	b	1.8	-	0	b	32.8	e
5	DUAL MAGNUM BUCTRIL	26.3	c	18	-	2.3	b	2.3	-	0	b	53.5	d
6	WARRANT DUAL MAGNUM BUCTRIL	17	cd	18	-	2	b	2	-	0	b	63	bc
7	BUCTRIL	57.5	a	18	-	4	b	4	-	0	b	20.5	f
8	WARRANT BUCTRIL (CORN ONLY)	0	e	18	-	5	b	4.5	-	0.5	b	77	a
9	CONTROL	56.3	a	18	-	3	b	3	-	0	b	22.8	f
10	CONTROL (CORN ONLY)	0	e	18	-	9.8	a	6.8	-	3	a	72.3	ab
LSD P=.05		7.85		.		3.35		3.47		1.75		7.76	
Standard Deviation		2.72		5.41		0		2.31		2.39		1.21	
CV		18.8		0		69.93		81.04		344.7		10.71	

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

Post-emergence Treatments 12 DAT (6/28/16)

Rating Type Rating Unit		Alfalfa Cover (%)		Corn Cover (%)		Weed Cover (%)		Broadleaf Cover (%)		Grass Cover (%)		Ground Cover (%)	
Trt	**Treatment**												
1	WARRANT	34.5	ab	58.5	-	1.3	b	1.3	b	0	-	5.8	bc
2	DUAL MAGNUM	26.3	bc	57.5	-	2	b	2	b	0	-	14.3	abc
3	WARRANT DUAL MAGNUM	26.3	bc	55	-	4	b	4	b	0	-	14.8	abc
4	WARRANT BUCTRIL	33.3	ab	58.3	-	1.3	b	1	b	0.3	-	7.3	bc
5	DUAL MAGNUM BUCTRIL	22.5	c	57.5	-	0.5	b	0.5	b	0	-	19.5	ab
6	WARRANT DUAL MAGNUM BUCTRIL	20.5	c	58.8	-	1.3	b	1.3	b	0	-	19.5	ab
7	BUCTRIL	36.8	a	60.3	-	2	b	2	b	0	-	1	c
8	WARRANT BUCTRIL (CORN ONLY)	0	d	68.8	-	3.8	b	3.3	b	0.5	-	27.5	a
9	CONTROL	37.8	a	57.5	-	4.8	b	4.8	b	0	-	0	c
10	CONTROL (CORN ONLY)	0	d	63.8	-	16	a	14.5	a	1.5	-	20.3	ab
LSD P=.05		6.89		10.81		3.85		3.24		1.19		11.4	
Standard Deviation		4.75		7.45		2.65		2.23		0.82		7.86	
CV		19.99		12.51		72.24		64.69		365.65		60.57	

Means followed by same letter or symbol do not significantly differ
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Post-emergence Treatments 27 DAT (7/13/16)

Rating Type Rating Unit		Alfalfa Cover (%)		Weed Cover (%)		Broadleaf Cover (%)		Grass Cover (%)		Ground Cover (%)	
Trt	**Treatment**										
1	WARRANT	75	ab	1.3	b	1.3	b	0	b	23.8	ef
2	DUAL MAGNUM	42.5	c	3.3	b	3.3	b	0	b	54.3	d
3	WARRANT DUAL MAGNUM	36.3	cd	2	b	2	b	0	b	61.8	cd
4	WARRANT BUCTRIL	66.3	b	2	b	1.5	b	0.5	b	31.8	e
5	DUAL MAGNUM BUCTRIL	27.5	de	0.8	b	0.8	b	0	b	71.8	bc
6	WARRANT DUAL MAGNUM BUCTRIL	21.3	e	2.8	b	1.8	b	1	b	76	b
7	BUCTRIL	76.3	ab	2.5	b	1.8	b	0.8	b	21.3	ef
8	WARRANT BUCTRIL (CORN ONLY)	0	f	3.3	b	3	b	0.3	b	96.8	a
9	CONTROL	83.8	a	4	b	3.3	b	0.8	b	12.3	f
10	CONTROL (CORN ONLY)	0	f	16.5	a	12.5	a	4	a	83.5	b
LSD P=.05		11.55		3.54		2.68		1.78		11.74	
Standard Deviation		7.96		2.44		1.85		1.23		8.09	
CV		18.57		63.82		59.64		169.5		15.18	

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Fall Cover Rating (10/27/16) and Silage Corn Yield (9/12/16)

Rating Type **Rating Unit**		**Alfalfa Cover (%)**	**Weed Cover (%)**	**Broadleaf Cover (%)**	**Grass Cover (%)**	**Ground Cover (%)**	**Corn Yield (Tons/A)**
Trt	**Treatment**						
1	WARRANT	6.3 -	0.8 b	0.8 b	0 -	93 -	9.978 -
2	DUAL MAGNUM	6 -	2.8 b	2.8 b	0 -	91.3 -	9.958 -
3	WARRANT DUAL MAGNUM	6 -	1.8 b	1.5 b	0.3 -	92.3 -	8.802 -
4	WARRANT BUCTRIL	13.5 -	1.3 b	1 b	0.3 -	85.3 -	7.34 -
5	DUAL MAGNUM BUCTRIL	9.8 -	1.8 b	1.8 b	0 -	88.5 -	9.065 -
6	WARRANT DUAL MAGNUM BUCTRIL	2 -	1.3 b	1 b	0.3 -	96.8 -	10.43 -
7	BUCTRIL	7 -	1.5 b	1.5 b	0 -	91.5 -	10.633 -
8	WARRANT BUCTRIL (CORN ONLY)	0 -	3.5 b	2.8 b	0.8 -	96.5 -	9.337 -
9	CONTROL	8.5 -	1.3 b	1.3 b	0 -	90.3 -	8.438 -
10	CONTROL (CORN ONLY)	0 -	13.8 a	13 a	0.8 -	86.3 -	8.248 -
LSD P=.05		9.21	4.53	4.97	0.99	10.87	3.3212
Standard Deviation		6.35	3.12	3.42	0.69	7.49	2.28
CV		107.62	105.86	125.64	304.52	8.22	25.99

Means followed by same letter or symbol do not significantly differ
(P=.05, Student-Newman-Keuls)