

(01-ACS-7)

Evaluation of Hornet WDG and Glyphomax Plus following soil applied herbicides for weed control in Roundup Ready corn, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate prepackage mixtures of ALS inhibitor herbicides and growth regulator herbicides for weed efficacy and crop phytotoxicity in a glyphosate resistant corn hybrid. The soil was a Canisteo, Nicollet, Clarion Webster clay loam with a pH 6.8 and 4.3% organic matter. The experimental design was a randomized complete block with three replications and plots were 10 by 25 ft. The 2000 crop was soybean. Tillage included a spring field cultivation. Fertilization included 124 lb/A applied as urea. Crop residue on the soil surface was 7% at planting. "Dekalb hybrid DK C 57-40 RR" corn was planted 1.25 inches deep on May 9, at 30,200 seeds/A in 30-inch rows. May rainfall included: 0.18, 0.39, 0.83, 0.12, 0.15, 0.22, 0.07, 0.98, 0.26, 1.58, 0.05, 0.15, 0.03, 0.27, 0.20, 0.02, 0.13 and 0.64 inches on May 1, 2, 3, 4, 5, 6, 9, 10, 13, 20, 21, 23, 24, 25, 26, 27, 28 and 31, respectively. Total rainfall for May was 6.27 inches. June rainfall included: 0.07, 0.02, 0.30, 0.14, 0.59, 0.38, 0.16 and 0.01 inches on June 1, 4, 5, 10, 12, 14, 16 and 20, respectively. Total rainfall for June was 1.67 inches. July rainfall included: 0.44 inches and 1.24 inches from July 1 through 15 and 16 through 31, respectively. Rainfall total for August was 2.50 inches. Application information is listed below:

Date	May 10	June 16
Treatment	PRE	POST
Sprayer		
gpa	20	20
psi	30	30
nozzle	11002	11002
Temperature (C)		
air	28	28
soil (4 inch)	20	22
Soil moisture	dry	damp
Wind (mph)	7-10 SW	5-10 NW
Sky	cloudy	clear
Relative humidity (%)	53%	58%
Corn growth		
leaf no.	-	V5-V6
height (inch)	-	8-12
Giant foxtail		
leaf no.	-	2-4, 0-3 tillers
height (inch)	-	2-4
infestation (ft ²)	-	0-1
Common lambsquarters		
leaf no.	-	numerous
height (inch)	-	2-6
infestation (ft ²)	-	0-2
Common waterhemp		
leaf no.	-	numerous
height (inch)	-	2-6
infestation (ft ²)	-	0-1
Velvetleaf		
leaf no.	-	3-6
height (inch)	-	2-6
infestation (ft ²)	-	0-4

No significant differences were detected in corn stand between treatments. No PRE treatment caused corn injury when observed on May 29 and June 16, prior to POST applications. Giant foxtail, common waterhemp, and common lambsquarters control was good to excellent with PRE treatments on June 16, except common lambsquarters control with Surpass. PRE applied tank-mixture treatments provided excellent velvetleaf control. PRE FulTime and Surpass did not control velvetleaf. On June 25 and July 10, several POST treatments caused corn injury, and ranged from 2 to 28%. Following POST applications, all weed species, including velvetleaf, were effectively controlled as noted on July 10 and August 20. (Dept. of Agronomy, Iowa State University, Ames)

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CREATED: 06/05/2001 **REVISED:** 12/10/2001

COMPLETED: N

PROJECT TYPE: HERBICIDE

LOCATION: AMES, IA

RESEARCHED BY: IA State University

DESIGN: RANDOMIZED COMPLETE BLOCK DESIGN

PLOT SIZE: 10.00 FT WIDE X 25.00 FT LONG

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE		TM	ZEAMD	ZEAMD	ZEAMD	SETFA	ABUTH
		RATE	UNIT		17.5 FT 07/27/01	PHY % 05/29/01	PHY % 06/16/01	CON % 06/16/01	CON % 06/16/01
1A	UNTREATED CHECK	0.00	NA	0	25	0	0	0	0
2A	FULTIME (4SC)	3.00	LAA	1	28	0	0	98	50
3A	FULTIME (4SC)	3.00	LAA	1	29	0	0	99	96
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
4A	FULTIME (4SC)	3.00	LAA	1	26	0	0	99	45
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C ATRAZINE 90DF (WG)	0.90	LAA	2					
	D»28%N	2.50	PMV	2					
	E»NIS	0.25	PMV	2					
5A	AXIOM (68DF)	0.55	LAA	1	27	0	0	98	98
	B»HORNET WDG (68.5WG)	0.171	LAA	1					
6A	FULTIME (4SC)	2.00	LAA	1	29	0	0	99	98
	B»BALANCE PRO (4SC)	0.07	LAA	1					
7A	SURPASS (6.4EC)	2.20	LAA	1	29	0	0	99	18
	B MARKSMAN (3.2SC)	1.40	LAA	2					
	C»28%N	2.50	PMV	2					
8A	FULTIME (4SC)	2.00	LAA	1	29	0	0	99	38
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D»NIS	0.25	PMV	2					
	E»AMMONIUM SULFATE	2.50	LMA	2					
9A	SURPASS (6.4EC)	1.60	LAA	1	28	0	0	99	15
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D»NIS	0.25	PMV	2					
	E»AMMONIUM SULFATE	2.50	LMA	2					
10A	FULTIME (4SC)	2.00	LAA	1	27	0	0	99	42
	B»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	2.50	LMA	2					
11A	SURPASS (6.4EC)	1.60	LAA	1	27	0	0	99	18
	B»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	2.50	LMA	2					
12A	GLYPHOMAX PLUS (4SL)	0.75	LAA	2	29	0	0	0	0
	B»AMMONIUM SULFATE	2.50	LMA	2					
LSD (0.05)					3.54	0.00	0.00	1.63	22.00

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TRT NUM	TREATMENT COMPONENT	DOSAGE			AMATA	CHEAL	ZEAMD	ZEAMD	SETFA
		RATE	UNIT	TM	CON % 06/16/01	CON % 06/16/01	PHY % 06/25/01	PHY % 07/10/01	CON % 07/10/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	FULTIME (4SC)	3.00	LAA	1	99	99	0	0	98
3A	FULTIME (4SC)	3.00	LAA	1	99	99	0	0	99
	B>HORNET WDG (68.5WG)	0.128	LAA	1					
4A	FULTIME (4SC)	3.00	LAA	1	99	99	7	0	99
	B>HORNET WDG (68.5WG)	0.128	LAA	2					
	C ATRAZINE 90DF (WG)	0.90	LAA	2					
	D>28%N	2.50	PMV	2					
	E>NIS	0.25	PMV	2					
5A	AXIOM (68DF)	0.55	LAA	1	99	99	2	0	96
	B>HORNET WDG (68.5WG)	0.171	LAA	1					
6A	FULTIME (4SC)	2.00	LAA	1	99	99	0	0	99
	B>BALANCE PRO (4SC)	0.07	LAA	1					
7A	SURPASS (6.4EC)	2.20	LAA	1	99	93	8	28	99
	B MARKSMAN (3.2SC)	1.40	LAA	2					
	C>28%N	2.50	PMV	2					
8A	FULTIME (4SC)	2.00	LAA	1	99	99	7	0	99
	B>HORNET WDG (68.5WG)	0.128	LAA	2					
	C>GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D>NIS	0.25	PMV	2					
	E>AMMONIUM SULFATE	2.50	LMA	2					
9A	SURPASS (6.4EC)	1.60	LAA	1	99	58	2	0	99
	B>HORNET WDG (68.5WG)	0.128	LAA	2					
	C>GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D>NIS	0.25	PMV	2					
	E>AMMONIUM SULFATE	2.50	LMA	2					
10A	FULTIME (4SC)	2.00	LAA	1	99	99	0	0	98
	B>GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C>AMMONIUM SULFATE	2.50	LMA	2					
11A	SURPASS (6.4EC)	1.60	LAA	1	99	48	0	0	99
	B>GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C>AMMONIUM SULFATE	2.50	LMA	2					
12A	GLYPHOMAX PLUS (4SL)	0.75	LAA	2	0	0	0	0	99
	B>AMMONIUM SULFATE	2.50	LMA	2					
LSD (0.05)					0.00	8.86	3.00	1.41	1.93

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TRT NUM	TREATMENT COMPONENT	DOSAGE			ABUTH	AMATA	CHEAL	SETFA	ABUTH
		RATE	UNIT	TM	CON % 07/10/01	CON % 07/10/01	CON % 07/10/01	CON % 08/20/01	CON % 08/20/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	FULTIME (4SC)	3.00	LAA	1	38	99	96	93	27
3A	FULTIME (4SC)	3.00	LAA	1	95	99	99	96	95
	B»HORNET WDG (68.5WG)	0.128	LAA	1					
4A	FULTIME (4SC)	3.00	LAA	1	99	99	99	93	99
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C ATRAZINE 90DF (WG)	0.90	LAA	2					
	D»28%N	2.50	PMV	2					
	E»NIS	0.25	PMV	2					
5A	AXIOM (68DF)	0.55	LAA	1	98	99	99	92	96
	B»HORNET WDG (68.5WG)	0.171	LAA	1					
6A	FULTIME (4SC)	2.00	LAA	1	96	99	99	95	96
	B»BALANCE PRO (4SC)	0.07	LAA	1					
7A	SURPASS (6.4EC)	2.20	LAA	1	99	99	99	98	99
	B MARKSMAN (3.2SC)	1.40	LAA	2					
	C»28%N	2.50	PMV	2					
8A	FULTIME (4SC)	2.00	LAA	1	98	99	99	95	98
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D»NIS	0.25	PMV	2					
	E»AMMONIUM SULFATE	2.50	LMA	2					
9A	SURPASS (6.4EC)	1.60	LAA	1	99	99	99	95	98
	B»HORNET WDG (68.5WG)	0.128	LAA	2					
	C»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	D»NIS	0.25	PMV	2					
	E»AMMONIUM SULFATE	2.50	LMA	2					
10A	FULTIME (4SC)	2.00	LAA	1	99	99	99	90	95
	B»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	2.50	LMA	2					
11A	SURPASS (6.4EC)	1.60	LAA	1	99	99	99	95	96
	B»GLYPHOMAX PLUS (4SL)	0.75	LAA	2					
	C»AMMONIUM SULFATE	2.50	LMA	2					
12A	GLYPHOMAX PLUS (4SL)	0.75	LAA	2	99	99	99	93	99
	B»AMMONIUM SULFATE	2.50	LMA	2					
	LSD (0.05)				10.24	0.00	1.13	3.85	7.81

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TRT NUM	TREATMENT COMPONENT	DOSAGE			AMATA	CHEAL
		RATE	UNIT	TM	CON % 08/20/01	CON % 08/20/01
1A	UNTREATED CHECK	0.00	NA	0	0	0
2A	FULTIME (4SC)	3.00	LAA	1	99	93
3A	FULTIME (4SC)	3.00	LAA	1	99	99
	B>>HORNET WDG (68.5WG)	0.128	LAA	1		
4A	FULTIME (4SC)	3.00	LAA	1	99	99
	B>>HORNET WDG (68.5WG)	0.128	LAA	2		
	C ATRAZINE 90DF (WG)	0.90	LAA	2		
	D>>28%N	2.50	PMV	2		
	E>>NIS	0.25	PMV	2		
5A	AXIOM (68DF)	0.55	LAA	1	98	99
	B>>HORNET WDG (68.5WG)	0.171	LAA	1		
6A	FULTIME (4SC)	2.00	LAA	1	99	99
	B>>BALANCE PRO (4SC)	0.07	LAA	1		
7A	SURPASS (6.4EC)	2.20	LAA	1	99	99
	B MARKSMAN (3.2SC)	1.40	LAA	2		
	C>>28%N	2.50	PMV	2		
8A	FULTIME (4SC)	2.00	LAA	1	99	99
	B>>HORNET WDG (68.5WG)	0.128	LAA	2		
	C>>GLYPHOMAX PLUS (4SL)	0.75	LAA	2		
	D>>NIS	0.25	PMV	2		
	E>>AMMONIUM SULFATE	2.50	LMA	2		
9A	SURPASS (6.4EC)	1.60	LAA	1	99	99
	B>>HORNET WDG (68.5WG)	0.128	LAA	2		
	C>>GLYPHOMAX PLUS (4SL)	0.75	LAA	2		
	D>>NIS	0.25	PMV	2		
	E>>AMMONIUM SULFATE	2.50	LMA	2		
10A	FULTIME (4SC)	2.00	LAA	1	99	90
	B>>GLYPHOMAX PLUS (4SL)	0.75	LAA	2		
	C>>AMMONIUM SULFATE	2.50	LMA	2		
11A	SURPASS (6.4EC)	1.60	LAA	1	99	95
	B>>GLYPHOMAX PLUS (4SL)	0.75	LAA	2		
	C>>AMMONIUM SULFATE	2.50	LMA	2		
12A	GLYPHOMAX PLUS (4SL)	0.75	LAA	2	99	93
	B>>AMMONIUM SULFATE	2.50	LMA	2		
LSD (0.05)					1.13	6.07

>> = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)

01 = PREPRE / PRE 05/10/2001(1)

02 = POSPOS / POST 06/16/2001(2)