

(01-NCC-4)

Preemergence Dual II Magnum plus Callisto and Dual II Magnum followed by Callisto postemergence in corn, Nashua, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate a pigment inhibitor herbicide applied to the soil and compared to postemergence applications for weed efficacy and corn phytotoxicity. The soil was a Floyd, Kenyon, Ostrander loam with a pH 6.95 and 5.1% 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. Fertilization included 140 lb/A actual N applied as anhydrous ammonia. Tillage included a spring field cultivation. Crop residue on the soil surface was 15% at planting. "DeKalb hybrid DK 537" corn was planted 1.5 inches deep on May 16, at 32,454 seeds/A in 30-inch rows. May rainfall included: 0.11, 1.27, 0.52, 0.03, 0.17, 0.34, 0.01, 0.06, 0.14, 0.01, 0.08, 0.60, 0.44, 0.05, 0.13, 0.51, 0.08, 0.26 and 0.23 inches, on May 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 20, 21, 22, 23, 24, 25, 26 and 31, respectively. Total rainfall for May was 5.04 inches. June rainfall included: 0.42, 0.52, 0.01, 0.07, 0.04, 0.73, 0.09 and 0.27 inches on June 1, 5, 6, 11, 12, 14, 17 and 18, respectively. Total rainfall for June was 2.15 inches. July rainfall included: 0.05 inches and 2.37 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 16	June 22
Treatment	PRE	POST
Sprayer		
gpa	20	20
psi	30	30
nozzle	11002	11002
Temperature (C)		
air	27	23
soil (4 inch)	19	21
Soil moisture	dry	dry
Wind (mph)	3-4 NE	5-8 N
Sky	pt. cloudy	clear
Relative humidity (%)	41%	54%
Corn growth		
leaf no.	-	V5-V6
height (inch)	-	9-10
Giant foxtail		
leaf no.	-	2-4, 0-1 tiller
height (inch)	-	1-3
infestation (ft ²)	-	0-1
Common lambsquarters		
leaf no.	-	numerous
height (inch)	-	0.5-2
infestation (ft ²)	-	0-6
Common waterhemp		
leaf no.	-	numerous
height (inch)	-	1-3
infestation (ft ²)	-	0-1
Pennsylvania smartweed		
leaf no.	-	4
height (inch)	-	1-3
infestation (ft ²)	-	0-1

Velvetleaf

leaf no.	-	3-6
height (inch)	-	1-3.5
infestation (ft ²)	-	0-4

No significant differences in corn stand were observed between treatments. Negligible corn injury occurred from PRE applied Dual II Magnum plus Callisto. Several POST treatments that included Callisto, Marksman, Northstar, and Hornet WDG caused corn injury when observed on June 28, and July 6. All PRE treatments achieved excellent giant foxtail and common waterhemp control on June 15, prior to POST applications. PRE tank-mixture treatments of Dual II Magnum plus Callisto with and without Atrazine gave excellent velvetleaf, common lambsquarters, and Pennsylvania smartweed control on June 15, July 6, 27, and August 22. Velvetleaf, common lambsquarters and Pennsylvania smartweed control with other PRE treatments, ranged from 17 to 99%. Excellent control of all weed species was observed on the four evaluation dates following application of the POST treatments. Corn yield differences were not significant between herbicide treatments and ranged from 164 to 179 bu/A. Several yielded significantly better than the untreated control. (Dept. of Agronomy, Iowa State University, Ames)

DATA MEAN

TITLE: Preemergence Dual II Magnum plus Callisto and Dual II Magnum followed by Callisto postemergence in corn.

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

COMPLETED: N

PROJECT TYPE: HERBICIDE

LOCATION: NASHUA, 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			ZEAMD 17.5 FT		ZEAMD PHY %		ZEAMD PHY %		SETFA CON %		ABUTH CON %	
		RATE	UNIT	TM	06/15/01	06/01/01	06/15/01	06/15/01	06/15/01	06/15/01	06/15/01	06/15/01	06/15/01	06/15/01
1A	UNTREATED CHECK	0.00	NA	0	28	0	0	0	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	30	0	0	99	96					
B»	CALLISTO (4SC)	0.188	LAA	1										
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	30	0	0	99	98					
B»	CALLISTO (4SC)	0.188	LAA	1										
C	AATREX 4L (SC)	1.00	LAA	1										
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	30	0	0	99	86					
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	30	0	0	99	18					
B»	CALLISTO (4SC)	0.094	LAA	2										
C»	CROP OIL CONCENTRATE	1.00	PMV	2										
D»	28%N	2.50	PMV	2										
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	30	0	0	99	75					
B»	CALLISTO (4SC)	0.094	LAA	2										
C»	CROP OIL CONCENTRATE	1.00	PMV	2										
D»	28%N	2.50	PMV	2										
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	31	0	0	99	18					
B»	CALLISTO (4SC)	0.094	LAA	2										
C	AATREX 4L (SC)	0.25	LAA	2										
D»	CROP OIL CONCENTRATE	1.00	PMV	2										
E»	28%N	2.50	PMV	2										
8A»	OUTLOOK (6EC)	0.98	LAA	1	30	0	0	99	17					
B	MARKSMAN (3.2SC)	1.40	LAA	2										
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	30	0	0	99	17					
B»	NORTHSTAR (47.4WG)	0.148	LAA	2										
C»	CROP OIL CONCENTRATE	1.00	PMV	2										
D»	28%N	2.50	PMV	2										
10A»	FULTIME (4SC)	3.00	LAA	1	30	0	0	99	82					
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										
LSD (0.05)					2.49	0.00	0.00	0.00	13.55					

DATA MEAN

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DESIGN: RANDOMIZED COMPLETE BLOCK DESIGN

PLOT SIZE: 10.00 FT **WIDE X** 25.00 FT **LONG**

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			AMATA	CHEAL	POLPY	ZEAMD	ZEAMD
		RATE	UNIT	TM	CON % 06/15/01	CON % 06/15/01	CON % 06/15/01	PHY % 06/28/01	PHY % 07/06/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	0	0
B»	CALLISTO (4SC)	0.188	LAA	1					
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	2	0
B»	CALLISTO (4SC)	0.188	LAA	1					
C	AATREX 4L (SC)	1.00	LAA	1					
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	99	99	0	0
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	88	77	7	2
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	99	99	7	2
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	82	68	5	0
B»	CALLISTO (4SC)	0.094	LAA	2					
C	AATREX 4L (SC)	0.25	LAA	2					
D»	CROP OIL CONCENTRATE	1.00	PMV	2					
E»	28%N	2.50	PMV	2					
8A»	OUTLOOK (6EC)	0.98	LAA	1	99	92	73	15	17
B	MARKSMAN (3.2SC)	1.40	LAA	2					
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	92	80	13	7
B»	NORTHSTAR (47.4WG)	0.148	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
10A»	FULTIME (4SC)	3.00	LAA	1	99	99	99	17	2
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					
LSD (0.05)					0.00	3.94	15.00	6.81	3.54

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REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			SETFA	ABUTH	AMATA	CHEAL	POLPY
		RATE	UNIT	TM	CON % 07/06/01	CON % 07/06/01	CON % 07/06/01	CON % 07/06/01	CON % 07/06/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
C	AATREX 4L (SC)	1.00	LAA	1					
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	68	99	99	99
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C	AATREX 4L (SC)	0.25	LAA	2					
D»	CROP OIL CONCENTRATE	1.00	PMV	2					
E»	28%N	2.50	PMV	2					
8A»	OUTLOOK (6EC)	0.98	LAA	1	99	96	99	99	99
B	MARKSMAN (3.2SC)	1.40	LAA	2					
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	93	99	98	99
B»	NORTHSTAR (47.4WG)	0.148	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
10A»	FULTIME (4SC)	3.00	LAA	1	99	99	99	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					
LSD (0.05)					0.00	8.35	0.00	1.25	0.00

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REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			ZEAMD PHY % 07/27/01	SETFA CON % 07/27/01	ABUTH CON % 07/27/01	AMATA CON % 07/27/01	CHEAL CON % 07/27/01
		RATE	UNIT	TM					
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	0	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	0	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
C	AATREX 4L (SC)	1.00	LAA	1					
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	0	99	65	99	99
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	0	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	0	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	0	98	99	98	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C	AATREX 4L (SC)	0.25	LAA	2					
D»	CROP OIL CONCENTRATE	1.00	PMV	2					
E»	28%N	2.50	PMV	2					
8A»	OUTLOOK (6EC)	0.98	LAA	1	18	98	99	99	99
B	MARKSMAN (3.2SC)	1.40	LAA	2					
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	3	99	95	99	99
B»	NORTHSTAR (47.4WG)	0.148	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
10A»	FULTIME (4SC)	3.00	LAA	1	2	99	99	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					
LSD (0.05)					10.26	1.67	10.14	1.25	0.00

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DESIGN: RANDOMIZED COMPLETE BLOCK DESIGN

PLOT SIZE: 10.00 FT **WIDE X** 25.00 FT **LONG**

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			POLPY CON %	SETFA CON %	ABUTH CON %	AMATA CON %	CHEAL CON %
		RATE	UNIT	TM	07/27/01	08/22/01	08/22/01	08/22/01	08/22/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.188	LAA	1					
C	AATREX 4L (SC)	1.00	LAA	1					
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	99	65	99	99
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	99	99	99	99	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	98	99	98	99
B»	CALLISTO (4SC)	0.094	LAA	2					
C	AATREX 4L (SC)	0.25	LAA	2					
D»	CROP OIL CONCENTRATE	1.00	PMV	2					
E»	28%N	2.50	PMV	2					
8A»	OUTLOOK (6EC)	0.98	LAA	1	99	98	99	99	99
B	MARKSMAN (3.2SC)	1.40	LAA	2					
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	99	95	98	99
B»	NORTHSTAR (47.4WG)	0.148	LAA	2					
C»	CROP OIL CONCENTRATE	1.00	PMV	2					
D»	28%N	2.50	PMV	2					
10A»	FULTIME (4SC)	3.00	LAA	1	99	99	99	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					
LSD (0.05)					0.00	1.67	10.14	1.82	0.00

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REPS: 03

TRT	TREATMENT	DOSAGE		POLPY	ZEAMD
NUM	COMPONENT	RATE	UNIT	CON %	CON %
			TM	08/22/01	10/29/01
1A	UNTREATED CHECK	0.00	NA	0	153
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	179
B»	CALLISTO (4SC)	0.188	LAA	1	
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	179
B»	CALLISTO (4SC)	0.188	LAA	1	
C	AATREX 4L (SC)	1.00	LAA	1	
4A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	166
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	170
B»	CALLISTO (4SC)	0.094	LAA	2	
C»	CROP OIL CONCENTRATE	1.00	PMV	2	
D»	28%N	2.50	PMV	2	
6A»	BICEP LITE II MAGNUM (6SC)	3.30	LAA	1	166
B»	CALLISTO (4SC)	0.094	LAA	2	
C»	CROP OIL CONCENTRATE	1.00	PMV	2	
D»	28%N	2.50	PMV	2	
7A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	172
B»	CALLISTO (4SC)	0.094	LAA	2	
C	AATREX 4L (SC)	0.25	LAA	2	
D»	CROP OIL CONCENTRATE	1.00	PMV	2	
E»	28%N	2.50	PMV	2	
8A»	OUTLOOK (6EC)	0.98	LAA	1	164
B	MARKSMAN (3.2SC)	1.40	LAA	2	
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	172
B»	NORTHSTAR (47.4WG)	0.148	LAA	2	
C»	CROP OIL CONCENTRATE	1.00	PMV	2	
D»	28%N	2.50	PMV	2	
10A»	FULTIME (4SC)	3.00	LAA	1	178
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	
LSD (0.05)				0.00	23.61

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)

01 = PREPRE / PRE 05/16/2001(1)

02 = POSPOS / POST 06/22/2001(2)