

(01-ACC-8)

Preemergence Dual II Magnum plus Callisto and Dual II Magnum followed by Callisto postemergence in corn, Ames, 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 with postemergence applications for weed efficacy and corn phytotoxicity. 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 actual N applied as urea. Crop residue on the soil surface was 5% at planting. "Garst hybrid 8550" corn was planted 1.5 inches deep on May 15, 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 17	June 21
Treatment	PRE	POST
Sprayer		
gpa	20	20
psi	30	30
nozzle	11002	11002
Temperature (C)		
air	31	24
soil (4 inch)	25	20
Soil moisture	dry	dry
Wind (mph)	12-14 N	5-10 NW
Sky	pt. cloudy	pt. cloudy
Relative humidity (%)	18%	64%
Corn growth		
leaf no.	-	V5
height (inch)	-	10-12
Giant foxtail		
leaf no.	-	1-2
height (inch)	-	0.5
infestation (ft ²)	-	0-1
Common lambsquarters		
leaf no.	-	numerous
height (inch)	-	0.25-3
infestation (ft ²)	-	0-3
Common waterhemp		
leaf no.	-	numerous
height (inch)	-	0.25-3
infestation (ft ²)	-	0-1
Ivyleaf morningglory		
leaf no.	-	numerous
height (inch)	-	2-6
infestation (ft ²)	-	0-5

Velvetleaf		
leaf no.	-	3-5
height (inch)	-	2-5
infestation (ft ²)	-	0-2

No significant differences in corn stand between herbicide treatments were observed. PRE applied treatments did not cause corn injury when observed on June 5 and 21, prior to POST application timing. Marksman, Northstar, and Hornet WDG plus Atrazine applied POST on June 21 caused corn injury when observed on June 29 and July 6. Giant foxtail control was excellent with all treatments on all observation dates. Velvetleaf control on June 21 was not acceptable with most PRE treatments prior to sequential POST applications. Excellent common waterhemp control was evident on June 21 with all treatments, whereas common lambsquarters was poor to excellent. No PRE treatment achieved control of ivyleaf morningglory. Observations on July 8, 23, and August 31 following PRE plus POST applications, indicated excellent velvetleaf, common waterhemp and common lambsquarters control was achieved by all. POST treatments improved ivyleaf morningglory control when observed on these dates, but reached an acceptable level with only a few. No significant differences in corn yield between treatments occurred, except the untreated control and PRE Dual II Magnum followed by Marksman POST. Serious corn injury was observed from Marksman, resulting in significantly lower yield compared to other treatments. (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: 06/04/2001 REVISED: 11/30/2001

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	SETFA	ZEAMD	ZEAMD	SETFA
		RATE	UNIT		17.5 FT	PHY %	PHY %	PHY %	CON %
					07/05/01	05/29/01	06/05/01	06/21/01	06/21/01
1A	UNTREATED CHECK	0.00	NA	0	25	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	28	0	0	0	99
B»	CALLISTO (4SC)	0.188	LAA	1					
3A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	26	0	0	0	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	28	0	0	0	99
5A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	27	0	0	0	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	27	0	0	0	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	28	0	0	0	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	29	0	0	0	99
B	MARKSMAN (3.2SC)	1.40	LAA	2					
9A»	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	28	0	0	0	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	28	0	0	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					
LSD (0.05)					5.19	0.00	0.00	0.00	0.00

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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			ABUTH	AMATA	CHEAL	IPOHG	ZEAMD
		RATE	UNIT	TM	CON % 06/21/01	CON % 06/21/01	CON % 06/21/01	CON % 06/21/01	PHY % 06/29/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	73	99	99	62	0
	B»CALLISTO (4SC)	0.188	LAA	1					
3A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	87	99	99	68	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	38	99	99	55	0
5A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	17	99	65	10	0
	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	43	99	99	45	0
	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	17	99	77	35	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	27	99	80	30	13
	B MARKSMAN (3.2SC)	1.40	LAA	2					
9A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	18	99	62	25	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	38	99	99	48	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)					22.29	0.00	10.12	21.39	3.91

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REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			ZEAMD	SETFA	ABUTH	AMATA	CHEAL
		RATE	UNIT	TM	PHY % 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	0	99	70	99	95
	B»CALLISTO (4SC)	0.188	LAA	1					
3A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	0	99	83	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	27	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	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	15	99	98	99	99
	B MARKSMAN (3.2SC)	1.40	LAA	2					
9A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	5	99	90	99	93
	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	90	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)					3.26	0.00	17.57	0.00	3.00

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RESEARCHED BY: IA State University

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PLOT SIZE: 10.00 FT WIDE X 25.00 FT LONG

REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			IPOHG	ZEAMD	SETFA	ABUTH	AMATA
		RATE	UNIT	TM	CON % 07/06/01	PHY % 07/23/01	CON % 07/23/01	CON % 07/23/01	CON % 07/23/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	30	0	99	85	99
	B»CALLISTO (4SC)	0.188	LAA	1					
3A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	55	0	99	95	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	40	0	99	22	99
5A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	85	0	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	90	0	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	95	0	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	95	12	99	99	99
	B MARKSMAN (3.2SC)	1.40	LAA	2					
9A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	75	2	99	96	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	90	0	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					
LSD (0.05)					26.94	4.46	0.00	14.00	0.00

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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			CHEAL	IPOHG	SETFA	ABUTH	AMATA
		RATE	UNIT	TM	CON % 07/23/01	CON % 07/23/01	CON % 08/31/01	CON % 08/31/01	CON % 08/31/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	93	25	99	83	99
	B>>CALLISTO (4SC)	0.188	LAA	1					
3A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	37	98	96	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	27	99	20	99
5A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	65	98	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	78	98	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	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	98	98	99	99
	B MARKSMAN (3.2SC)	1.40	LAA	2					
9A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	96	80	99	96	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	90	98	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					
LSD (0.05)					2.00	35.34	2.92	12.51	0.00

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CREATED: 06/04/2001 **REVISED:** 11/30/2001 **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	TREATMENT	DOSAGE			CHEAL	IPOHG	ZEAMD
NUM	COMPONENT	RATE	UNIT	TM	CON % 08/31/01	CON % 08/31/01	BU/A 10/23/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	77
2A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	93	23	180
	B»CALLISTO (4SC)	0.188	LAA	1			
3A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	99	35	183
	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	25	177
5A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	98	48	200
	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	72	191
	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	191
	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	90	163
	B MARKSMAN (3.2SC)	1.40	LAA	2			
9A	DUAL II MAGNUM (7.64EC)	1.91	LAA	1	96	75	184
	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	82	187
	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)			2.18	40.66	38.10

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)
 01 = PREPRE / PRE 05/17/2001(1)
 02 = POSPOS / POST 06/21/2001(2)