

(01-ACC-9)

Evaluation of preemergence and postemergence applied PCC 1164, Atrazine and PCC 1147 for weed control in corn, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate experimental triazolinone herbicides 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 11
Treatment	PRE	EPOST
Sprayer		
gpa	20	20
psi	30	30
nozzle	11002	11002
Temperature (C)		
air	31	35
soil (4 inch)	25	27
Soil moisture	dry	dry
Wind (mph)	12-14 N	8-12 SW
Sky	pt. cloudy	pt. cloudy
Relative humidity (%)	18%	63%
Corn growth		
leaf no.	-	V3-V4
height (inch)	-	3-5
Giant foxtail		
leaf no.	-	1-2
height (inch)	-	0.25-0.5
infestation (ft ²)	-	0-1
Common lambsquarters		
leaf no.	-	numerous
height (inch)	-	0.5-1
infestation (ft ²)	-	0-4
Common waterhemp		
leaf no.	-	numerous
height (inch)	-	0.25-1
infestation (ft ²)	-	0-1
Velvetleaf		
leaf no.	-	numerous
height (inch)	-	1-2
infestation (ft ²)	-	0-4

Nearly all PRE and PRE followed by EPOST treatments caused corn injury when observed June 18. EPOST treatments of PCC 1147 caused significant injury. Weed pressure in the experiment area was considered light and nearly all PRE applied tank-mixture treatments of Dual II Magnum plus PCC1164 or PCC 1164 plus Atrazine provided excellent giant foxtail, velvetleaf, common waterhemp, and common lambsquarters control when observed on June 4, 18, July 13, and August 1. Dual II Magnum plus Atrazine at the 0.75 lb/A rate did not adequately control velvetleaf, nor did Dual II Magnum alone provide adequate control of velvetleaf and common lambsquarters. PRE followed by POST PCC 1164 and PCC 1147, both tank-mixed with Atrazine, provided excellent control of all the species evaluated. Corn yields between treatments were variable and ranged from 170 to 205 bu/A. (Dept. of Agronomy, Iowa State University, Ames)

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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			ZEAMD	ZEAMD	SETFA	ABUTH	AMATA
		RATE	UNIT	TM	17.5 FT 07/05/01	PHY % 06/04/01	CON % 06/04/01	CON % 06/04/01	CON % 06/04/01
1A	UNTREATED CHECK	0.00	NA	0	30	0	99	99	99
2A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	29	0	99	99	99
3A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
4A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	29	0	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
5A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	29	0	99	99	99
	B ATRAZINE 90DF (WG)	0.75	LAA	1					
6A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B ATRAZINE 90DF (WG)	1.20	LAA	1					
7A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	29	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
8A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
9A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B»PCC 1164 (70DF)	0.35	LAA	1					
	C ATRAZINE 90DF (WG)	1.00	LAA	1					
10A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	27	0	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
11A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	30	0	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
12A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	29	0	99	99	99
	B»PCC 1164 (70DF)	0.088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
13A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B»PCC 1147 (0.166SC)	0.0044	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
14A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	28	0	99	99	99
	B»PCC 1147 (0.166SC)	0.0088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
LSD (0.05)					2.48	0.00	0.00	0.00	0.00

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REPS: 03

TRT NUM	TREATMENT COMPONENT	DOSAGE			CHEAL CON %	ZEAMD PHY %	SETFA CON %	ABUTH CON %	AMATA CON %
		RATE	UNIT	TM	06/04/01	06/18/01	06/18/01	06/18/01	06/18/01
1A	UNTREATED CHECK	0.00	NA	0	99	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	17	99
3A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	3	99	96	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
4A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	7	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
5A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	2	99	83	99
	B ATRAZINE 90DF (WG)	0.75	LAA	1					
6A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	96	99
	B ATRAZINE 90DF (WG)	1.20	LAA	1					
7A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	3	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
8A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	2	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
9A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	7	99	99	99
	B»PCC 1164 (70DF)	0.35	LAA	1					
	C ATRAZINE 90DF (WG)	1.00	LAA	1					
10A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	5	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
11A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	5	99	98	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
12A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	93	99
	B»PCC 1164 (70DF)	0.088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
13A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	27	99	99	99
	B»PCC 1147 (0.166SC)	0.0044	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
14A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	30	99	98	99
	B»PCC 1147 (0.166SC)	0.0088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
LSD (0.05)					0.00	3.92	0.00	12.61	0.00

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TRT NUM	TREATMENT COMPONENT	DOSAGE			CHEAL CON %	ZEAMD PHY %	SETFA CON %	ABUTH CON %	AMATA CON %
		RATE	UNIT	TM	06/18/01	07/13/01	07/13/01	07/13/01	07/13/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	73	0	99	17	98
3A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	96	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
4A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	2	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
5A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	83	99
	B ATRAZINE 90DF (WG)	0.75	LAA	1					
6A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	96	99
	B ATRAZINE 90DF (WG)	1.20	LAA	1					
7A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
8A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
9A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	2	99	99	99
	B»PCC 1164 (70DF)	0.35	LAA	1					
	C ATRAZINE 90DF (WG)	1.00	LAA	1					
10A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
11A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	96	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
12A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	94	99
	B»PCC 1164 (70DF)	0.088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
13A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	12	99	93	98
	B»PCC 1147 (0.166SC)	0.0044	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
14A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	13	99	92	99
	B»PCC 1147 (0.166SC)	0.0088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
LSD (0.05)					4.67	2.59	0.00	13.22	1.41

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TRT NUM	TREATMENT COMPONENT	DOSAGE			CHEAL	ZEAMD	SETFA	ABUTH	AMATA
		RATE	UNIT	TM	CON % 07/13/01	PHY % 08/01/01	CON % 08/01/01	CON % 08/01/01	CON % 08/01/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	70	0	99	17	98
3A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	96	96	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
4A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	98	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
5A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	82	99
	B ATRAZINE 90DF (WG)	0.75	LAA	1					
6A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	96	99
	B ATRAZINE 90DF (WG)	1.20	LAA	1					
7A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
8A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.25	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
9A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.35	LAA	1					
	C ATRAZINE 90DF (WG)	1.00	LAA	1					
10A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	99	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	0.75	LAA	1					
11A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	98	98	99
	B»PCC 1164 (70DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.20	LAA	1					
12A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	0	99	93	99
	B»PCC 1164 (70DF)	0.088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
13A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	10	98	93	98
	B»PCC 1147 (0.166SC)	0.0044	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
14A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	10	95	92	99
	B»PCC 1147 (0.166SC)	0.0088	LAA	2					
	C ATRAZINE 90DF (WG)	1.20	LAA	2					
	D»LI 700	0.25	PMV	2					
LSD (0.05)					5.94	3.23	1.88	12.45	1.41

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TRT	TREATMENT	DOSAGE	CHEAL	ZEAMD		
NUM	COMPONENT	RATE	UNIT	TM	CON %	BU/A
					08/01/01	10/19/01
1A	UNTREATED CHECK	0.00	NA	0	0	154
2A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	70	170
3A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	186
B»	PCC 1164 (70DF)	0.25	LAA	1		
4A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	198
B»	PCC 1164 (70DF)	0.45	LAA	1		
5A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	172
B	ATRAZINE 90DF (WG)	0.75	LAA	1		
6A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	189
B	ATRAZINE 90DF (WG)	1.20	LAA	1		
7A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	193
B»	PCC 1164 (70DF)	0.25	LAA	1		
C	ATRAZINE 90DF (WG)	0.75	LAA	1		
8A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	185
B»	PCC 1164 (70DF)	0.25	LAA	1		
C	ATRAZINE 90DF (WG)	1.20	LAA	1		
9A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	181
B»	PCC 1164 (70DF)	0.35	LAA	1		
C	ATRAZINE 90DF (WG)	1.00	LAA	1		
10A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	184
B»	PCC 1164 (70DF)	0.45	LAA	1		
C	ATRAZINE 90DF (WG)	0.75	LAA	1		
11A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	205
B»	PCC 1164 (70DF)	0.45	LAA	1		
C	ATRAZINE 90DF (WG)	1.20	LAA	1		
12A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	186
B»	PCC 1164 (70DF)	0.088	LAA	2		
C	ATRAZINE 90DF (WG)	1.20	LAA	2		
D»	LI 700	0.25	PMV	2		
13A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	190
B»	PCC 1147 (0.166SC)	0.0044	LAA	2		
C	ATRAZINE 90DF (WG)	1.20	LAA	2		
D»	LI 700	0.25	PMV	2		
14A»	DUAL II MAGNUM (7.64EC)	1.60	LAA	1	99	178
B»	PCC 1147 (0.166SC)	0.0088	LAA	2		
C	ATRAZINE 90DF (WG)	1.20	LAA	2		
D»	LI 700	0.25	PMV	2		
LSD (0.05)					5.94	24.00

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)

01 = PREPRE / PRE 05/17/2001(1)

02 = EAPOWE / EPOST 06/11/2001(2)