

(01-ACC-5)

Evaluation of weed control and corn tolerance to Balance Pro and Callisto alone, or in tank-mixture combinations, Ames, Iowa, 2001. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate pigment inhibitor herbicides applied preemergence 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
Treatment	PRE
Sprayer	
gpa	20
psi	30
nozzle	11002
Temperature (C)	
air	31
soil (4 inch)	25
Soil moisture	dry
Wind (mph)	12-14 N
Sky	clear
Relative	
humidity (%)	18%

Corn stands between herbicide treatments were consistent and no significant differences were observed. No PRE treatment of Balance Pro, Callisto alone or in tank-mixture with Atrazine, Define, Topnotch, and Dual II Magnum caused corn injury. Balance Pro applied at 0.094 lb/A alone and at 0.07 lb/A in combination with the tank-mixtures achieved excellent giant foxtail, velvetleaf, common waterhemp, and common lambsquarters control when observed on June 11, 28, and July 23. Callisto applied alone at 0.141 and 0.188 lb/A did not demonstrate acceptable giant foxtail control, although good to excellent control of the broadleaf weed species was observed. Giant foxtail control improved to excellent when Callisto occurred with tank-mixtures, except when combined with Atrazine. (Dept. of Agronomy, Iowa State University, Ames)

DATA MEAN

TITLE: Evaluation of weed control and corn tolerance to Balance Pro and Callisto alone, or in tank-mixture combinations.

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	ZEAMD	ZEAMD	SETFA	ABUTH
		RATE	UNIT		17.5 FT 07/05/01	PHY % 06/04/01	PHY % 06/11/01	CON % 06/11/01	CON % 06/11/01
1A	UNTREATED CHECK	0.00	NA	0	27	0	0	0	0
2A»	BALANCE PRO (4SC)	0.07	LAA	1	29	0	0	88	99
3A»	CALLISTO (4SC)	0.141	LAA	1	28	0	0	22	98
4A»	BALANCE PRO (4SC)	0.094	LAA	1	28	0	0	98	99
5A»	CALLISTO (4SC)	0.188	LAA	1	27	0	0	17	89
6A»	BALANCE PRO (4SC)	0.07	LAA	1	28	0	0	98	99
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
7A»	CALLISTO (4SC)	0.188	LAA	1	28	0	0	85	99
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
8A»	BALANCE PRO (4SC)	0.07	LAA	1	28	0	0	99	99
	B»DEFINE (60DF)	0.45	LAA	1					
9A»	CALLISTO (4SC)	0.188	LAA	1	27	0	0	99	99
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
10A»	CALLISTO (4SC)	0.188	LAA	1	27	0	0	99	99
	B»DUAL II MAGNUM (7.64EC)	1.59	LAA	1					
11A»	BALANCE PRO (4SC)	0.07	LAA	1	27	0	0	99	99
	B»DEFINE (60DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
12A»	CALLISTO (4SC)	0.188	LAA	1	27	0	0	99	99
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
LSD (0.05)					2.56	0.00	0.00	5.00	8.16

DATA MEAN

TITLE: Evaluation of weed control and corn tolerance to Balance Pro and Callisto alone, or in tank-mixture combinations.

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			AMATA	CHEAL	ZEAMD	SETFA	ABUTH
		RATE	UNIT	TM	CON % 06/11/01	CON % 06/11/01	PHY % 06/29/01	CON % 06/29/01	CON % 06/29/01
1A	UNTREATED CHECK	0.00	NA	0	0	0	0	0	0
2A»	BALANCE PRO (4SC)	0.07	LAA	1	99	99	0	87	99
3A»	CALLISTO (4SC)	0.141	LAA	1	96	88	0	15	98
4A»	BALANCE PRO (4SC)	0.094	LAA	1	99	99	0	92	98
5A»	CALLISTO (4SC)	0.188	LAA	1	95	85	0	12	89
6A»	BALANCE PRO (4SC)	0.07	LAA	1	99	99	0	92	99
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
7A»	CALLISTO (4SC)	0.188	LAA	1	99	99	0	67	98
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
8A»	BALANCE PRO (4SC)	0.07	LAA	1	99	99	0	98	98
	B»DEFINE (60DF)	0.45	LAA	1					
9A»	CALLISTO (4SC)	0.188	LAA	1	99	99	0	98	98
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
10A»	CALLISTO (4SC)	0.188	LAA	1	99	99	0	99	99
	B»DUAL II MAGNUM (7.64EC)	1.59	LAA	1					
11A»	BALANCE PRO (4SC)	0.07	LAA	1	99	99	0	98	99
	B»DEFINE (60DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
12A»	CALLISTO (4SC)	0.188	LAA	1	99	99	0	99	98
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
LSD (0.05)					1.13	6.66	0.00	6.07	8.80

DATA MEAN

TITLE: Evaluation of weed control and corn tolerance to Balance Pro and Callisto alone, or in tank-mixture combinations.

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			AMATA	CHEAL	SETFA	ABUTH	AMATA
		RATE	UNIT	TM	CON % 06/29/01	CON % 06/29/01	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»	BALANCE PRO (4SC)	0.07	LAA	1	95	99	85	99	90
3A»	CALLISTO (4SC)	0.141	LAA	1	93	88	8	96	92
4A»	BALANCE PRO (4SC)	0.094	LAA	1	96	96	88	98	94
5A»	CALLISTO (4SC)	0.188	LAA	1	92	85	10	88	92
6A»	BALANCE PRO (4SC)	0.07	LAA	1	98	99	90	99	96
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
7A»	CALLISTO (4SC)	0.188	LAA	1	98	96	62	98	90
	B ATRAZINE 90DF (WG)	1.35	LAA	1					
8A»	BALANCE PRO (4SC)	0.07	LAA	1	99	98	95	98	99
	B»DEFINE (60DF)	0.45	LAA	1					
9A»	CALLISTO (4SC)	0.188	LAA	1	99	98	96	98	98
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
10A»	CALLISTO (4SC)	0.188	LAA	1	98	85	96	99	96
	B»DUAL II MAGNUM (7.64EC)	1.59	LAA	1					
11A»	BALANCE PRO (4SC)	0.07	LAA	1	99	99	96	99	98
	B»DEFINE (60DF)	0.45	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
12A»	CALLISTO (4SC)	0.188	LAA	1	99	99	98	98	99
	B TOPNOTCH (3.2CS)	2.00	LAA	1					
	C ATRAZINE 90DF (WG)	1.35	LAA	1					
		LSD (0.05)			4.43	7.31	6.00	8.37	6.61

DATA MEAN

TITLE: Evaluation of weed control and corn tolerance to Balance Pro and Callisto alone,
or in tank-mixture combinations.
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	CHEAL
		RATE	UNIT		CON % 07/23/01
1A	UNTREATED CHECK	0.00	NA	0	0
2A»	BALANCE PRO (4SC)	0.07	LAA	1	96
3A»	CALLISTO (4SC)	0.141	LAA	1	77
4A»	BALANCE PRO (4SC)	0.094	LAA	1	96
5A»	CALLISTO (4SC)	0.188	LAA	1	77
6A»	BALANCE PRO (4SC)	0.07	LAA	1	99
	B ATRAZINE 90DF (WG)	1.35	LAA	1	
7A»	CALLISTO (4SC)	0.188	LAA	1	96
	B ATRAZINE 90DF (WG)	1.35	LAA	1	
8A»	BALANCE PRO (4SC)	0.07	LAA	1	98
	B»DEFINE (60DF)	0.45	LAA	1	
9A»	CALLISTO (4SC)	0.188	LAA	1	95
	B TOPNOTCH (3.2CS)	2.00	LAA	1	
10A»	CALLISTO (4SC)	0.188	LAA	1	82
	B»DUAL II MAGNUM (7.64EC)	1.59	LAA	1	
11A»	BALANCE PRO (4SC)	0.07	LAA	1	99
	B»DEFINE (60DF)	0.45	LAA	1	
	C ATRAZINE 90DF (WG)	1.35	LAA	1	
12A»	CALLISTO (4SC)	0.188	LAA	1	99
	B TOPNOTCH (3.2CS)	2.00	LAA	1	
	C ATRAZINE 90DF (WG)	1.35	LAA	1	
LSD (0.05)					9.11

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING (FP)
 01 = PREPRE / PRE 05/17/2001(1)