

Preemergence Comparison of Balance Pro and Callisto.

01-10B-E90

OBJECTIVE: Compare weed control and crop tolerance fo Balance Pro and Callisto, alone or in tankmix.

SUMMARY: No corn injury was observed from any treatment. Giant foxtail control 42 days after treatment (DAT) was 78% from Balance Pro alone at 3 oz and 7% from Callisto at 6 oz. Tank mixing Topnotch with Callisto or Aatrex with Balance Pro increased giant foxtail control to at least 97%. Ivyleaf morningglory control was 20% or less from Balance Pro or Callisto alone. Tank mixing Aatrex with either herbicide increased ivyleaf morningglory control to at least 96%. Common waterhemp control with Balance Pro and Callisto was 92 to 96% at 21 DAT but declined to 43 to 88% by 42 DAT. Common waterhemp control 42 DAT was increased when a tank mix partner such as Aatrex, Topnotch or Define was added to Balance Pro or Callisto. Common cocklebur and common ragweed control was less than 75% from Balance Pro or Callisto regardless of rate. Control of both weeds was increased with the addition of Aatrex. Velvetleaf control was 87 and 63% from Balance Pro at 2.25 oz and Callisto at 4.5 oz, respectively. Velvetleaf control was increased with the addition of a tank mix partner or by increasing the Balance Pro and Callisto rate.

Corn yield ranged from 172 bu/A in nontreated plots to 232 bu/A. Plots treated with Callisto alone yielded similar to the nontreated check, likely due to the lack of giant foxtail control. Adding a tank mix partner to Balance Pro did not increase corn yield compared to Balance Pro alone. However, adding Aatrex, Topnotch or Dual II Magnum to Callisto increased corn yield by at least 27 bu/A.

HERBICIDES

AATREX 90 WG
BALANCE PRO 4 SC
CALLISTO 4 SC
DEFINE 60 WG
DUAL II MAGNUM 7.64 EC
TOPNOTCH 3.2 ME

WEEDS

cocklebur, common
foxtail, giant
morningglory, ivyleaf
nutsedge, yellow
ragweed, common
velvetleaf
waterhemp, common

CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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Project Code: 01-10B-E90 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final Initiation Date: 4-19-01

Objective:

Compare weed control and crop tolerance fo Balance Pro and Callisto, alone or in tankmix.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. XANST	cocklebur, common	Xanthium strumarium L.
4. ABUTH	velvetleaf	Abutilon theophrasti Medicus
5. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
7. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1:	ZEAMX corn, field	Variety:	P33G28 LL
Planting Method:	Seeded	Planting Date:	5-8-01
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	24 FT	Reps:	3
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2000				
Field Prep./Maintenance:	N 150 LB/A, P205 0 LB/A, K20 150 LB/A				

Soil Name:	Weir	% OM:	1.6	pH:	6.3	CEC:	12
Texture:	Silt loam	Fert. Level:	P1: 82 LB/A, K: 274 LB/A				

APPLICATION DESCRIPTION

A	
Application Date:	5-9-01
Time of Day:	11:00
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	78 F
% Relative Humidity:	34
Wind Velocity, Unit:	3 MPH
Soil Moisture:	BELNOR

CROP STAGE AT EACH APPLICATION

A		
Crop 1 Code, Stage:	ZEAMX	NA
Height, Unit:	NA	NA

WEED STAGE AT EACH APPLICATION

NA

APPLICATION EQUIPMENT

A	
Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	8003
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	20 GPA

NOTES: HARVESTED 9-28-01, 2 ROWS X 21 FT.

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Weed Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	SETFA	SETFA	CYPES	CYPES	XANST	XANST	ABUTH	ABUTH	AMBEL	AMBEL
Crop Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	9-28-01	5-18-01	5-30-01	6-20-01	5-30-01	6-20-01	5-30-01	6-20-01	5-30-01	6-20-01	5-30-01	6-20-01	5-30-01	6-20-01
Rating Date	V1	21 DA-A	42 DA-A	21 DA-A	42 DA-A	21 DA-A	42 DA-A	21 DA-A	42 DA-A	21 DA-A	42 DA-A	21 DA-A	42 DA-A	21 DA-A
Trt-Eval Interval														

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
1	NONTREATED									172	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BALANCE PRO	4 SC		0.0703	LB A/A	2.25	OZ/A	PRE	A	211	0	0	0	83	73	22	7	63	30	95	87	92	55	
3	CALLISTO	4 SC		0.1406	LB A/A	4.5	OZ/A	PRE	A	184	0	0	0	7	3	80	80	37	13	87	63	17	0	
4	BALANCE PRO	4 SC		0.094	LB A/A	3	OZ/A	PRE	A	213	0	0	0	90	78	43	23	65	20	95	95	92	47	
5	CALLISTO	4 SC		0.188	LB A/A	6	OZ/A	PRE	A	169	0	0	0	13	7	87	87	67	60	94	92	75	72	
6	BALANCE PRO	4 SC		0.094	LB A/A	3	OZ/A	PRE	A	216	0	0	0	94	98	65	33	95	93	98	99	98	99	
6	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
7	CALLISTO	4 SC		0.188	LB A/A	6	OZ/A	PRE	A	223	0	0	0	90	80	93	88	96	92	98	99	97	96	
7	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
8	BALANCE PRO	4 SC		0.0703	LB A/A	2.25	OZ/A	PRE	A	230	0	0	0	93	97	50	27	83	60	96	96	96	92	
8	DEFINE	60 WG		0.45	LB A/A	12	OZ/A	PRE	A															
9	CALLISTO	4 SC		0.1406	LB A/A	4.5	OZ/A	PRE	A	211	0	0	0	95	97	93	88	92	63	97	99	98	89	
9	TOPNOTCH	3.2 ME		1.6	LB A/A	2	QT/A	PRE	A															
10	BALANCE PRO	4 SC		0.0703	LB A/A	2.25	OZ/A	PRE	A	232	0	0	0	96	95	78	43	93	81	98	99	98	99	
10	DEFINE	60 WG		0.45	LB A/A	12	OZ/A	PRE	A															
10	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
11	CALLISTO	4 SC		0.1406	LB A/A	4.5	OZ/A	PRE	A	220	0	0	0	96	98	89	93	91	81	98	99	98	99	
11	TOPNOTCH	3.2 ME		1.6	LB A/A	2	QT/A	PRE	A															
11	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
12	CALLISTO	4 SC		0.1406	LB A/A	4.5	OZ/A	PRE	A	217	0	0	0	93	90	80	68	50	40	95	95	83	72	
12	DUAL II MAGNUM	7.64 EC		1.6	LB A/A	1.68	PT/A	PRE	A															
13	BALANCE PRO	4 SC		0.0703	LB A/A	2.25	OZ/A	PRE	A	229	0	0	0	96	99	82	77	68	87	97	99	97	99	
13	DEFINE	60 WG		0.375	LB A/A	10	OZ/A	PRE	A															
13	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
14	BALANCE PRO	4 SC		0.0469	LB A/A	1.5	OZ/A	PRE	A	222	0	0	0	96	98	89	50	93	82	97	99	98	99	
14	DEFINE	60 WG		0.525	LB A/A	14	OZ/A	PRE	A															
14	AATREX	90 WG		1.0	LB A/A	1.11	LB/A	PRE	A															
15	AATREX	90 WG		2.0	LB A/A	2.22	LB/A	PRE	A	215	0	0	0	95	92	73	30	94	77	98	98	98	98	
LSD (P=.05)										22.2	0.0	0.0	0.0	7.2	10.1	9.6	27.1	16.3	24.6	4.6	7.9	19.5	16.5	
Replicate F										3.762	0.000	0.000	0.000	0.744	2.443	1.210	1.933	0.067	0.165	2.180	2.282	0.259	2.716	
Replicate Prob(F)										0.0357	1.0000	1.0000	1.0000	0.4845	0.1052	0.3132	0.1649	0.9350	0.8489	0.1318	0.1207	0.7736	0.0842	
Treatment F										6.806	0.000	0.000	0.000	207.713	114.541	69.881	11.749	23.488	13.011	242.150	91.665	21.107	36.920	
Treatment Prob(F)										0.0001	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

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Weed Code	IPOHE	IPOHE	AMATA	AMATA
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	5-30-01	6-20-01	5-30-01	6-20-01
Trt-Eval Interval	21 DA-A	42 DA-A	21 DA-A	42 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	IPOHE	IPOHE	AMATA	AMATA
1	NONTREATED									0	0	0	0
2	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A	53	0	95	43
3	CALLISTO	4	SC	0.1406	LB A/A	4.5	OZ/A	PRE	A	28	17	93	77
4	BALANCE PRO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	55	7	96	72
5	CALLISTO	4	SC	0.188	LB A/A	6	OZ/A	PRE	A	17	20	92	88
6	BALANCE PRO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	91	99	98	98
6	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
7	CALLISTO	4	SC	0.188	LB A/A	6	OZ/A	PRE	A	95	98	98	98
7	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
8	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A	75	50	96	93
8	DEFINE	60	WG	0.45	LB A/A	12	OZ/A	PRE	A				
9	CALLISTO	4	SC	0.1406	LB A/A	4.5	OZ/A	PRE	A	84	60	97	98
9	TOPNOTCH	3.2	ME	1.6	LB A/A	2	QT/A	PRE	A				
10	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A	92	96	97	99
10	DEFINE	60	WG	0.45	LB A/A	12	OZ/A	PRE	A				
10	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
11	CALLISTO	4	SC	0.1406	LB A/A	4.5	OZ/A	PRE	A	95	99	98	99
11	TOPNOTCH	3.2	ME	1.6	LB A/A	2	QT/A	PRE	A				
11	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
12	CALLISTO	4	SC	0.1406	LB A/A	4.5	OZ/A	PRE	A	72	43	96	95
12	DUAL II MAGNUM	7.64	EC	1.6	LB A/A	1.68	PT/A	PRE	A				
13	BALANCE PRO	4	SC	0.0703	LB A/A	2.25	OZ/A	PRE	A	94	97	98	99
13	DEFINE	60	WG	0.375	LB A/A	10	OZ/A	PRE	A				
13	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
14	BALANCE PRO	4	SC	0.0469	LB A/A	1.5	OZ/A	PRE	A	95	99	99	99
14	DEFINE	60	WG	0.525	LB A/A	14	OZ/A	PRE	A				
14	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A				
15	AATREX	90	WG	2.0	LB A/A	2.22	LB/A	PRE	A	95	99	99	95
LSD (P=.05)										16.1	15.2	2.5	19.6
Replicate F										0.601	3.189	0.355	0.920
Replicate Prob(F)										0.5550	0.0565	0.7042	0.4101
Treatment F										32.692	62.683	833.611	16.719
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Aventis (trts 1-6, 8-10, and 12-14); SIU trts (7, 11, and 15).
2. Ratings: CI at V1 and V3; % stunt at V3, 42 DAT and at canopy closure; WC 14 and 42 DAT and at canopy closure.
3. DA-A = days after PRE.