

## UAP Experimental Burndown Herbicides in No-Till Soybean.

02-1-E80

**OBJECTIVE:** Develop PCC-1195 and PCC-1133 for preplant weed control in soybean.

**SUMMARY:** PCC-1195 and PCC-1133 applied 14 days early preplant (EPP) controlled at least 93% of mouseear chickweed, smallflower buttercup, and horseweed at 28 days after treatment (DAT). Neither product provided any control of Carolina or giant foxtail. Preemergence applications of PCC1195 and PCC-1133 did not cause soybean injury. Preemergence applications of PCC-1195 and PCC-1133 controlled only 37 to 67% of horseweed at 14 DAT. The reduction in horseweed control with PCC-1195 and PCC-1133 applied preemergence compared to 14 EPP can be attributed to differences in horseweed height at the time of application. Horseweed was only 10 inches tall at the 14 EPP application but had increased to 30 to 50 inches in height by the preemergence application timing.

Soybean yield ranged from 50 to 57 bu/A with few significant differences between treatments.

### HERBICIDES

PCC-1133 2.5 EC  
PCC-1195 0.208 EC

### WEEDS

buttercup, smallflower  
chickweed, mouseear  
foxtail, Carolina  
foxtail, giant  
horseweed

### CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

## UAP Experimental Burndown Herbicides in No-Till Soybean.

Project Code: 02-1-E80      Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country:      Belleville      IL 62221 USA  
 Trial Status: Final      Updated:      10-24-02

## Objective:

Develop PCC-1195 and PCC-1133 for preplant weed control in soybean.

Weed Code	Common Name	Scientific Name
1.	ALOCA foxtail, Carolina	Alopecurus carolinianus Walt.
2.	CERVU chickweed, mouseear	Cerastium vulgatum L.
3.	RANAB buttercup, smallflower	Ranunculus abortivus L.
4.	ERICA horseweed	Conyza canadensis (L.) Crong.
5.	SETFA foxtail, giant	Setaria faberi Herrm.

Crop 1:      GLXMA soybean      Variety:      Asgrow 4602 RR  
 Planting Method: Seeded      Planting Date: 5-30-02  
 Rate:      75 lb/A      Depth:      1.0 IN  
 Row Spacing:      30 IN

Plot Width, Unit: 10 FT      Plot Length, Unit: 28 FT      Reps: 3  
 Tillage Type: No-Till      Study Design: Randomized complete block  
 Previous Crop, Year: ZEAMX, 2001

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name: Weir      % OM: 1.8      pH: 5.7      CEC: 10  
 Texture: Silt loam      Fert. Level: P1: 98 LB/A, K: 258 LB/A

## APPLICATION DESCRIPTION

	A	B
Application Date:	4-30-02	5-31-02
Time of Day:	11:00	11:30
Application Method:	Spray	Spray
Application Timing:	14EPP	PRE
Air Temp., Unit:	74 F	86 F
% Relative Humidity:	40	52
Wind Velocity, Unit:	3 MPH	3 MPH
Soil Moisture:	ABONOR	NORMAL

## CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA NA	GLXMA NA
Height, Unit:	NA NA	NA NA

## WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	ALOCA	ALOCA
Stage(leaves):	5-6	5-6
Height(inches):	4-6	8-12
Density:	Medium	Medium
Weed 2 Code:	CERVU	CERVU
Stage(leaves):	10+	mature
Height(inches):	3-6	
Density:	High	
Weed 3 Code:	RANAB	RANAB
Stage(leaves):	10+	mature
Height(inches):	6-12	
Density:	High	

<b>Weed 5 Code:</b>	SETFA	SETFA
<b>Stage(leaves):</b>	2-3	2-5
<b>Height(inches):</b>	1-3	2-8
<b>Density:</b>	Low	Medium

## APPLICATION EQUIPMENT

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

**NOTES:**

Harvested Oct-7-02, (2) 30 inch rows by 25 ft.



Weed Code																								
Crop Code																								
Rating Data Type																								
Rating Unit																								
Rating Date																								
Trt-Eval Interval																								
	GLXMA	ALOCA	ALOCA	CERVU	CERVU	RANAB	RANAB	ERICA	ERICA	SETFA	SETFA	GLXMA	GLXMA	GLXMA										
	Yield	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Injury	Injury	Injury										
	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent										
	10-7-02	5-14-02	5-28-02	5-14-02	5-28-02	5-14-02	5-28-02	5-14-02	5-28-02	5-14-02	5-28-02	6-7-02	6-14-02	6-28-02										
		14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	7 DA-B	14 DA-B	28 DA-B										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code															
12	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B	51				0	0	0								
12	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B															
12	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B															
13	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	PRE	B	50				0	0	0								
13	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B															
13	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B															
13	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B															
14	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	PRE	B	52				0	0	0								
14	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B															
14	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B															
14	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B															
15	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	PRE	B	52				0	0	0								
15	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B															
15	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B															
15	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B															
16	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	PRE	B	53				0	0	0								
16	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B															
16	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B															
16	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B															
17	NONTREATED									52	0	0	0	0	0	0	0							
LSD (P=.05)										5.7	0.0	0.0	11.7	0.0	10.7	1.3	8.4	3.8	0.0	0.0	0.0	0.0	0.0	
Replicate F										6.725	0.000	0.000	2.896	0.000	0.855	1.000	1.277	2.033	0.000	0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)										0.0036	1.0000	1.0000	0.0845	1.0000	0.4438	0.3897	0.3058	0.1634	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F										1.181	0.000	0.000	55.928	0.000	83.545	5398.375	130.354	677.855	0.000	0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)										0.3329	1.0000	1.0000	0.0001	1.0000	0.0001	0.0001	0.0001	0.0001	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Weed Code	ERICA	ERICA	SETFA	SETFA
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	6-7-02	6-14-02	6-7-02	6-14-02
Trt-Eval Interval	7 DA-B	14 DA-B	7 DA-B	14 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
1	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	14EPP	A				
1	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
2	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	14EPP	A				
2	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
3	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	14EPP	A				
3	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
3	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
4	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	14EPP	A				
4	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
4	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
5	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	14EPP	A				
5	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	14EPP	A				
5	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
5	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
6	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	14EPP	A				
6	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	14EPP	A				
6	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
6	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
7	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	14EPP	A				
7	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	14EPP	A				
7	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
7	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
8	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	14EPP	A				
8	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	14EPP	A				
8	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	14EPP	A				
8	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	14EPP	A				
9	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	PRE	B	50	53	0	0
9	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
10	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	PRE	B	50	67	0	5
10	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
11	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	PRE	B	50	37	0	3
11	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
11	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
12	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B	50	60	0	3
12	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
12	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				

Weed Code	ERICA	ERICA	SETFA	SETFA
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	6-7-02	6-14-02	6-7-02	6-14-02
Trt-Eval Interval	7 DA-B	14 DA-B	7 DA-B	14 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
13	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	PRE	B	50	58	0	0
13	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	PRE	B				
13	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
13	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
14	PCC-1195	0.208	EC	0.0088	LB A/A	5.4	OZ/A	PRE	B	50	43	0	0
14	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B				
14	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
14	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
15	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	PRE	B	50	47	0	0
15	PCC-1133	2.5	EC	0.3945	LB AE/A	20.2	OZ/A	PRE	B				
15	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
15	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
16	PCC-1195	0.208	EC	0.0176	LB A/A	10.8	OZ/A	PRE	B	50	67	0	0
16	PCC-1133	2.5	EC	0.7891	LB AE/A	40.4	OZ/A	PRE	B				
16	PCC-1174	100	LIQ	1.0	% V/V	1	%V/V	PRE	B				
16	LI 700	100	LIQ	0.25	% V/V	0.25	%V/V	PRE	B				
17	NONTREATED									0	0	0	0
LSD (P=.05)										0.0	29.6	0.0	7.0
Replicate F										0.000	1.575	0.000	0.743
Replicate Prob(F)										1.0000	0.2374	1.0000	0.4915
Treatment F										0.000	4.388	0.000	0.743
Treatment Prob(F)										1.0000	0.0058	1.0000	0.6546

UAP Experimental Burndown Herbicides in No-Till Soybean.

Project Code: 02-1-E80

Location: Belleville Research Center

#### Trial Comments

1. Protocol: UAP.
2. Add PCC-1174 to water prior to anything else.
3. Measure pH of spray solution before and after addition of PCC-1133.
4. DA-A = days after 14EPP application. DA-B = days after PRE application.
5. At 28 days after PRE application there was no crop injury in any plots.
6. At 28 days after PRE application, blanket herbicide application confounded weed control ratings.