

Weed Management in Conventional and Herbicide Resistant Soybean.

00-2B-W165

OBJECTIVE: Evaluate herbicide programs in Roundup Ready, Liberty Link, STS, and conventional soybean for weed control, grain yield, and return over investment.

SUMMARY: Soybean injury ranged from 18 to 39% at 7 DAT for treatments containing Flexstar. Preemergence applications of Authority or Canopy XL caused 8 to 11% soybean injury at 28 DAT. No soybean injury was observed at 56 DAT. All herbicide treatments controlled at least 90% of ivyleaf morningglory, velvetleaf, and common cocklebur and at least 83% of common ragweed. Giant foxtail control was 90% or greater from all treatments that included a postemergence herbicide application. All treatments controlled at least 91% control of common waterhemp except Liberty alone, Authority followed by Synchrony STS plus Assure II, and Prowl followed by Synchrony STS.

Soybean yield ranged from 41 to 38 bu/A in handweeded plots. Soybean yield was similar in all handweeded plots regardless of variety. All varieties in each herbicide program yielded similar to the handweeded checks with the exception of the total PRE of Canopy XL plus Prowl and the PRE followed by POST treatments of Prowl followed by Flexstar in the conventional variety. The reduced yield in these plots was likely due to the poor control of giant foxtail. High returns over investment were evident in the Roundup Ready and conventional varieties. The highest economic return was in the Roundup Ready variety in the total POST treatment.

HERBICIDES

ASSURE II 0.88 EC
 AUTHORITY 75 WG
 CANOPY XL 56.3 WG
 FLEXSTAR 1.88 EC
 FUSION 2.66 EC
 LIBERTY 1.67 EC
 PROWL 3.3 EC
 ROUNDUP ULTRA 3 SL
 SYNCHRONY STS 42 WG

WEEDS

COCKLEBUR, COMMON
 FOXTAIL, GIANT
 MORNINGGLORY, IVYLEAF
 RAGWEED, COMMON
 VELVETLEAF
 WATERHEMP, COMMON

CROP

SOYBEAN

Bryan Young and Scott Nottle

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Weed Management in Conventional and Herbicide Resistant Soybean.

Project Code: 00-2B-W165 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code	Common Name	Scientific Name
1. SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2. AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
3. ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
5. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
6. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.

Crop 1:	GLXMA SOYBEAN	Variety:	SEE NOTE
Planting Method:	SEEDED	Planting Date:	May-11-00
Rate:	75 LB/A	Depth:	1.0 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	28 FT	Reps:	4
Tillage Type:	REDUCED-TILL	Study Design:	SPLIT-PLOT		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 0 LB/A,	P ₂ O ₅	50 LB/A, K ₂ O 150 LB/A

Soil Name:	WEIR	% OM:	1.8	pH:	6.5	CEC:	9
Texture:	SILT LOAM	P ₁ :	79 LB/A,	K:	436 LB/A		

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	May-12-00	Jun-6-00	Jun-16-00	Jun-9-00	Jun-21-00
Time of Day:	6:00	8:00	6:30	8:00	7:30
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	2-4"W-1	4-6"W	2-4"W-2	2-4"RG
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	75 F	60 F	75 F	66 F	78 F
% Relative Humidity:	95	30	96	50	96
Wind Velocity, Unit:	0 MPH	1-2 MPH	2-3 MPH	1-2 MPH	1-2 MPH
Soil Moisture:	DRY	NORMAL	NORMAL	DRY	WET
% Cloud Cover:		0	60	0	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	NA	GLXMA V2	GLXMA V3	GLXMA V2	GLXMA V4
Height, Unit:	NA	5-7 IN	8-10 IN	6-8 IN	9-11 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code:		SETFA	SETFA	SETFA	SETFA
Stage(leaves):		4-5	5-7	4-5	2-3
Height(inches):		2-5	5-9	2-5	0-1
Density:		HIGH	HIGH	MEDIUM	LOW
Weed 2 Code:		AMBEL	AMBEL	AMBEL	
Stage(leaves):		4-5	4-8	5-6	
Height(inches):		2-4	4-6	2-4	
Density:		HIGH	MEDIUM	MEDIUM	
Weed 3 Code:		ABUTH	ABUTH		ABUTH
Stage(leaves):		2-3	3-4		3-4
Height(inches):		2-4	3-5		2-5
Density:		LOW	LOW		LOW
Weed 4 Code:		XANST	XANST	XANST	
Stage(leaves):		4-5	5-6	3-4	
Height(inches):		2-4	4-6	2-4	
Density:		LOW	MEDIUM	LOW	
Weed 5 Code:		AMATA	AMATA		AMATA
Stage(leaves):		5-6	5-10+		5-10+
Height(inches):		1-3	3-5		1-6
Density:		MEDIUM	MEDIUM		MEDIUM
Weed 6 Code:		IPOHE	IPOHE		IPOHE
Stage(leaves):		2-3	3-5		COTL-2
Height(inches):		2-4	3-5		2-4
Density:		MEDIUM	MEDIUM		LOW

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAYER	CO ₂ SPRAYER	CO ₂ SPRAYER
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	8003	8002	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

NOTES:

SOYBEAN VARIETIES ARE AG 4602 RR, AG 4604 STS, AG 4922, AND AG 5547 LL, SEE TREATMENT LIST.

Harvested Oct-04-00, (2) 30 inch rows by 10 ft.

TABLE. WEED MANAGEMENT IN CONVENTIONAL AND HERBICIDE RESISTANT SOYBEAN. PROJECT CODE:00-2B-W165

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	RETURN	GLXMA					CONTROL									
									INJURY, DAT					PLANTS	SETFA				AMBEL				
									7 DA	DAT		56	EOS		EOS	DAT		56	EOS	DAT		56	EOS
									2-4"W-1	14	28	DAP				14	28	DAP		EOS	14	28	
BU/A	\$/A	%	%	%	%	%	000/A	%	%	%	%	%	%	%	%	%	%						
1 CONVENTIONAL							13		0	0	0	0	0	125	0	0	0	0	0	0	0	0	
1 NONTREATED																							
2 CONVENTIONAL							38		0	0	0	0	0	117	99	99	99	99	99	99	99	99	
2 HANDWEED																							
3 CONVENTIONAL							22	30		0	10	0	0	129	80	88	59	54	95	99	94	83	
3 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																	
3 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																	
3 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																	
3 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
4 CONVENTIONAL							32	82		14	0	0	0	142	99	94	94	92	99	96	96	96	
4 FLEXSTAR	1.88 EC	0.294 LB A/A		1.25 PT/A	4-6"W	C																	
4 FUSION	2.66 EC	0.166 LB A/A		8.0 OZ/A	4-6"W	C																	
4 SUN-IT II	100 LIQ	1.0 % V/V		1.0 % V/V	4-6"W	C																	
4 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	4-6"W	C																	
5 CONVENTIONAL							38	108		15	14	14	0	139	99	99	99	94	99	99	99	95	
5 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																	
5 FLEXSTAR	1.88 EC	0.294 LB A/A		1.25 PT/A	2-4"W-2	D																	
5 FUSION	2.66 EC	0.166 LB A/A		8.0 OZ/A	2-4"W-2	D																	
5 SUN-IT II	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																	
5 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																	
6 CONVENTIONAL							23	27		14	0	0	0	127	81	61	61	55	97	98	98	93	
6 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
6 FLEXSTAR	1.88 EC	0.294 LB A/A		1.25 PT/A	2-4"W-2	D																	
6 SUN-IT II	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																	
6 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																	
7 LIBERTY LINK							23		0	0	0	0	0	121	0	0	0	0	0	0	0	0	
7 NONTREATED																							
8 LIBERTY LINK							41		0	0	0	0	0	108	99	99	99	99	99	99	99	99	
8 HANDWEED																							
9 LIBERTY LINK							37	56		0	8	0	0	117	78	88	57	67	97	98	96	87	
9 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																	
9 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																	
9 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																	
9 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
10 LIBERTY LINK							43	98		9	0	0	0	110	99	61	61	90	98	94	94	92	
10 LIBERTY	1.67 EC	0.313 LB A/A		24.0 OZ/A	4-6"W	C																	
10 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	4-6"W	C																	
11 LIBERTY LINK							40	67		0	8	8	0	118	99	99	99	94	99	99	99	90	
11 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																	
11 LIBERTY	1.67 EC	0.313 LB A/A		24.0 OZ/A	2-4"W-2	D																	
11 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-2	D																	
12 LIBERTY LINK							44	82		8	0	0	0	113	98	93	98	95	99	93	99	96	
12 LIBERTY	1.67 EC	0.313 LB A/A		24.0 OZ/A	2-4"W-1	B																	
12 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-1	B																	
12 LIBERTY	1.67 EC	0.313 LB A/A		24.0 OZ/A	2-4"RG	E																	
12 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"RG	E																	
13 ROUNDUP READY							21		0	0	0	0	0	129	0	0	0	0	0	0	0	0	
13 NONTREATED																							
14 ROUNDUP READY							38		0	0	0	0	0	125	99	99	99	99	99	99	99	99	
14 HANDWEED																							

(CONTINUED)

TABLE. WEED MANAGEMENT IN CONVENTIONAL AND HERBICIDE RESISTANT SOYBEAN. PROJECT CODE:00-2B-W165 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	RETURN	GLXMA					CONTROL									
									INJURY, DAT					PLANTS	SETFA				AMBEL				
									7 DA	DAT		56	EOS		EOS	DAT		56	DAT		56		
									2-4"W-1	14	28	DAP				14	28	DAP	EOS	14	28	DAP	EOS
BU/A	\$/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%						
15 ROUNDUP READY							35	49			0	11	0	0	133	81	91	66	80	96	98	94	89
15 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																	
15 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																	
15 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																	
15 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
16 ROUNDUP READY							47	134			10	0	0	0	140	99	85	85	94	99	93	93	94
16 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	4-6"W	C																	
16 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	4-6"W	C																	
17 ROUNDUP READY							44	97			0	4	4	0	138	99	99	99	95	99	99	99	95
17 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																	
17 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"W-2	D																	
17 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-2	D																	
18 ROUNDUP READY							44	99			6	0	0	0	145	98	94	98	96	98	95	98	96
18 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"W-1	B																	
18 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-1	B																	
18 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"RG	E																	
18 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"RG	E																	
19 STS							21				0	0	0	0	131	0	0	0	0	0	0	0	0
19 NONTREATED																							
20 STS							38				0	0	0	0	126	99	99	99	99	99	99	99	99
20 HANDWEED																							
21 STS							38	73			0	11	0	0	132	81	89	64	76	97	99	97	90
21 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																	
21 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																	
21 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																	
21 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
22 STS							34	59			18	0	0	0	136	96	96	96	90	95	91	91	87
22 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	4-6"W	C																	
22 ASSURE II	0.88 EC	0.069 LB A/A		10.0 OZ/A	4-6"W	C																	
22 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	4-6"W	C																	
22 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	4-6"W	C																	
23 STS							39	71			1	1	1	0	138	99	99	99	95	98	98	98	94
23 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																	
23 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	2-4"W-2	D																	
23 ASSURE II	0.88 EC	0.069 LB A/A		10.0 OZ/A	2-4"W-2	D																	
23 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																	
23 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																	
24 STS							30	32			9	0	0	0	134	83	54	54	26	96	95	95	84
24 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																	
24 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	2-4"W-2	D																	
24 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																	
24 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																	
LSD							9	79			1	3	4	2	12	4	11	20	15	1	2	2	6
P							0.01	0.3			0.01	0.01	0.01	0.01	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

(CONTINUED)

TABLE. WEED MANAGEMENT IN CONVENTIONAL AND HERBICIDE RESISTANT SOYBEAN. PROJECT CODE:00-2B-W165 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL															
							ABUTH				XANST				AMATA				IPOSS			
							DAT	56			DAT	56			DAT	56			DAT	56		
14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS							
% % % % % % % % % % % % % % % % %																						
1 CONVENTIONAL							0	0	0	0	0	0	0	0	0	0	0					
1 NONTREATED																						
2 CONVENTIONAL							99	99	99	99	99	99	99	99	99	99	99					
2 HANDWEED																						
3 CONVENTIONAL							96	99	97	94	92	98	97	92	99	97	91					
3 CANOPY XL	56.3	WG		6.8	OZ/A	PRE																
3 ->AUTHORITY	75	WG	0.2	LB	A/A	PRE																
3 ->CLASSIC	25	WG	0.04	LB	A/A	PRE																
3 PROWL	3.3	EC	1.0	LB	A/A	PRE																
4 CONVENTIONAL							99	94	94	96	99	94	94	96	99	92	92					
4 FLEXSTAR	1.88	EC	0.294	LB	A/A	4-6"W																
4 FUSION	2.66	EC	0.166	LB	A/A	4-6"W																
4 SUN-IT II	100	LIQ	1.0	%	V/V	4-6"W																
4 28% UAN	100	LIQ	2.5	%	V/V	4-6"W																
5 CONVENTIONAL							99	99	99	95	99	99	99	95	99	99	99					
5 AUTHORITY	75	WG	0.2	LB	A/A	PRE																
5 FLEXSTAR	1.88	EC	0.294	LB	A/A	2-4"W-2																
5 FUSION	2.66	EC	0.166	LB	A/A	2-4"W-2																
5 SUN-IT II	100	LIQ	1.0	%	V/V	2-4"W-2																
5 28% UAN	100	LIQ	2.5	%	V/V	2-4"W-2																
6 CONVENTIONAL							98	99	99	95	98	98	98	94	98	97	97					
6 PROWL	3.3	EC	1.0	LB	A/A	PRE																
6 FLEXSTAR	1.88	EC	0.294	LB	A/A	2-4"W-2																
6 SUN-IT II	100	LIQ	1.0	%	V/V	2-4"W-2																
6 28% UAN	100	LIQ	2.5	%	V/V	2-4"W-2																
7 LIBERTY LINK							0	0	0	0	0	0	0	0	0	0	0					
7 NONTREATED																						
8 LIBERTY LINK							99	99	99	99	99	99	99	99	99	99	99					
8 HANDWEED																						
9 LIBERTY LINK							97	98	97	96	95	99	96	96	99	96	94					
9 CANOPY XL	56.3	WG		6.8	OZ/A	PRE																
9 ->AUTHORITY	75	WG	0.2	LB	A/A	PRE																
9 ->CLASSIC	25	WG	0.04	LB	A/A	PRE																
9 PROWL	3.3	EC	1.0	LB	A/A	PRE																
10 LIBERTY LINK							98	90	90	94	98	91	91	94	93	49	49					
10 LIBERTY	1.67	EC	0.313	LB	A/A	4-6"W																
10 AMS	100	DRY	2.0	%	W/W	4-6"W																
11 LIBERTY LINK							99	99	99	95	99	97	97	94	99	99	99					
11 AUTHORITY	75	WG	0.2	LB	A/A	PRE																
11 LIBERTY	1.67	EC	0.313	LB	A/A	2-4"W-2																
11 AMS	100	DRY	2.0	%	W/W	2-4"W-2																
12 LIBERTY LINK							98	94	98	95	97	92	97	96	95	89	95					
12 LIBERTY	1.67	EC	0.313	LB	A/A	2-4"W-1																
12 AMS	100	DRY	2.0	%	W/W	2-4"W-1																
12 LIBERTY	1.67	EC	0.313	LB	A/A	2-4"RG																
12 AMS	100	DRY	2.0	%	W/W	2-4"RG																
13 ROUNDUP READY							0	0	0	0	0	0	0	0	0	0	0					
13 NONTREATED																						
14 ROUNDUP READY							99	99	99	99	99	99	99	99	99	99	99					
14 HANDWEED																						

(CONTINUED)

TABLE. WEED MANAGEMENT IN CONVENTIONAL AND HERBICIDE RESISTANT SOYBEAN. PROJECT CODE:00-2B-W165 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	CONTROL																						
							ABUTH				XANST				AMATA				IPOSS										
							DAT		56		DAT		56		DAT		56		DAT		56								
							14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS	14	28	DAP	EOS							
																%	%	%	%	%	%	%	%	%	%	%	%	%	%
15 ROUNDUP READY							97	98	97	96	96	98	97	95	99	97	94					97	94						
15 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																							
15 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																							
15 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																							
15 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																							
16 ROUNDUP READY							99	91	91	95	99	92	92	95	96	85	85	92			95	87	87	93					
16 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	4-6"W	C																							
16 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	4-6"W	C																							
17 ROUNDUP READY							99	99	99	95	99	99	99	95	99	99	99	95			99	99	99	95					
17 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																							
17 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"W-2	D																							
17 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-2	D																							
18 ROUNDUP READY							98	95	98	96	96	95	96	97	94	94	94	97			94	93	94	97					
18 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"W-1	B																							
18 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"W-1	B																							
18 ROUNDUP ULTRA	3 SL	0.75 LB AE/A		1.0 QT/A	2-4"RG	E																							
18 AMS	100 DRY	2.0 % W/W		17.0 LB/100 GAL	2-4"RG	E																							
19 STS							0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0					
19 NONTREATED																													
20 STS							99	99	99	99	99	99	99	99	99	99	99	99			99	99	99	99					
20 HANDWEED																													
21 STS							97	99	98	96	95	99	98	96		99	98	94				98	94						
21 CANOPY XL	56.3 WG			6.8 OZ/A	PRE	A																							
21 ->AUTHORITY	75 WG	0.2 LB A/A			PRE	A																							
21 ->CLASSIC	25 WG	0.04 LB A/A			PRE	A																							
21 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																							
22 STS							97	90	90	92	99	92	92	92	16	0	0	0			94	88	88	91					
22 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	4-6"W	C																							
22 ASSURE II	0.88 EC	0.069 LB A/A		10.0 OZ/A	4-6"W	C																							
22 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	4-6"W	C																							
22 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	4-6"W	C																							
23 STS							99	99	99	95	99	99	99	95	99	96	96	94			99	99	99	95					
23 AUTHORITY	75 WG	0.2 LB A/A		4.27 OZ/A	PRE	A																							
23 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	2-4"W-2	D																							
23 ASSURE II	0.88 EC	0.069 LB A/A		10.0 OZ/A	2-4"W-2	D																							
23 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																							
23 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																							
24 STS							96	97	97	93	96	95	95	91	94	90	90	62			94	94	94	90					
24 PROWL	3.3 EC	1.0 LB A/A		2.4 PT/A	PRE	A																							
24 SYNCHRONY STS	42 WG	0.013 LB A/A		0.5 OZ/A	2-4"W-2	D																							
24 PRIME OIL COC	100 LIQ	1.0 % V/V		1.0 % V/V	2-4"W-2	D																							
24 28% UAN	100 LIQ	2.5 % V/V		2.5 % V/V	2-4"W-2	D																							
LSD							2	2	2	2	2	2	2	2	3	3	3	10			2	3	3	3					
P							0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01			0.01	0.01	0.01	0.01					

1. PROTOCOL: SIU/SAN.
2. DAT = DAYS AFTER FINAL APPLICATION. DAP = DAYS AFTER PLANTING. EOS = END OF SEASON RATING.
3. RATING DATES:
 7 DAYS AFTER 2-4"W-1 WAS ON JUN-13-00.
 14 DAYS AFTER PRE, 2-4"W-2, 4-6"W, AND 2-4"RG APPLICATIONS ON MAY-26-00, JUN-23-00, JUN-30-00, AND JUL-4-00, RESPECTIVELY.
 28 DAYS AFTER PRE, 2-4"W-2, 4-6"W, AND 2-4"RG APPLICATIONS ON JUN-9-00, JUL-7-00, JUL-14-00, AND JUL-18-00, RESPECTIVELY.