

WEED MANAGEMENT

Cotton Incorporated Project #05-653CA

RESEARCH PROGRESS REPORT 2007



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Cotton Weed Control Summary:

Fallowground Burndown Herbicide Study The objective of this study was to evaluate the effectiveness of various herbicides at controlling volunteer wheat, common mallow (*Malva neglecta*), shepherdspurse (*Capsella bursa-pastoris*), and common fiddleneck (*Amsinckia menziesii*). All treatments (ET + Gramoxone Inteon or Roundup WeatherMax or Ignite; Chateau + Roundup WeatherMax, or Gramoxone Interon; Ignite treatments; Gramoxone Interon; and Roundup WeatherMax combinations with Shark, 2,4-D or Goal Tender gave excellent control of volunteer wheat and common fiddleneck with the exception of ET with 2,4-D and Agridex, which only gave moderate control. All treatments gave excellent control of mallow and shepherdspurse. Treatments containing Roundup gave the highest control of volunteer wheat and mallow.

Purple Nutsedge Control and Cotton Injury in Roundup Ready Cotton The objective of these 2 studies was to see if Sandea (halosulfuron) could be used safely in California cotton. In one study we evaluated the effectiveness of various herbicides at controlling purple nutsedge (*Cyperus rotundus*). In another study only injury to cotton was evaluated. MSMA with Agridex, Roundup WeatherMax with AMS, and Envoke with Agridex over the top and directed demonstrated the best control at 70 DAT, with good control by 28 DAT. Sandea at 0.67 oz/A and 1 oz/A (both applied on April 17 over the top), and Envoke with Agridex as a directed spray provided the least control, with only moderate control. While some treatments had mild to moderate injury earlier in the trial, by 70 DAT, only Sandea with Agridex (at 0.67, 1, and 1.3 oz/A applied as a shielded spray still had moderate injury by 70 DAT. Purple nutsedge population was so high (22 plants per square foot) that the cotton was very stunted due to competition and water stress. In addition, weed control was less than expected due to moisture stress caused by intense competition and lack of an early irrigation. Sandea applied over the top or shielded at lowest rate, Roundup, and Envoke at the lowest rate applied in 2 applications resulted in the same yields as the Untreated Check. Sandea with directed sprays caused the most severe yield loss. MSMA caused a slight yield reduction.

Comparing Different Water Carrier Volumes with Roundup WeatherMax for Weed Control in Roundup Ready Cotton - The objective of this study was to compare the effectiveness of Roundup WeatherMax at different rates of water (5,10,15,20 gpa.). All treatments gave good control of ivyleaf annual morningglory. All treatments gave moderate to good control of purple nutsedge. While control was similar among the various rates of gallonage, the trend indicated that the best control of tall annual morningglory and purple nutsedge was obtained by spraying at 15 gpa.

Comparing Different Water Carrier Volumes with Ignite for Weed Control in Liberty Link Cotton. The objective of this study was to compare the effectiveness of Ignite at different rates of water (5, 10, 15, 20 gpa.). All treatments gave excellent, immediate control of ivyleaf annual morningglory. All treatments gave excellent control of purple nutsedge. While control was similar among the various rates of gallonage, the best control of purple nutsedge was obtained by spraying at 10 gpa.

Johnsongrass Control Study in Liberty Link Cotton The objective of this study was to evaluate the effectiveness of various herbicides at controlling Johnsongrass. The Ignite had good initial control at 9 DAT which declined until after the second treatment, when it demonstrated good initial control. The other treatments (PrismMax, Fusilade, and Poast) had moderate to good

control from 9-23 days after the first treatment, and then moderate to excellent control from 7-24 days after the second treatment.

Layby Weed Control in Liberty Link Cotton The objective of this study was to evaluate the effectiveness of various herbicides at controlling Johnsongrass (*Sorghum halepense*), purple nutsedge (*Cyperus rotundus*), and ivyleaf annual morningglory (*Ipomoea hederacea*). Most of the treatments provided excellent control of ivyleaf annual morningglory through 23 days after the first application, with the exception of Chateau with Insure, Envoke with Agridex, and Envoke with Insure, which all had poor to fair control. The second application treatments both had consistent, moderate control of ivyleaf annual morningglory. All of the treatments with Ignite had good to excellent control of purple nutsedge, the best being Ignite alone, while all others had poor to moderate control. Chateau with Ignite, Envoke with Ignite, and Venue with Roundup WeatherMax and Agridex all had moderate to good control of Johnsongrass, while all other treatments had poor to moderate control. The first nine treatments all showed minor injury to the cotton, with Chateau plus Ignite being the worst at 42% initially to 17% by the end of the trial.

Layby Weed Control in Roundup Ready Cotton The objective of this study was to evaluate the effectiveness of various herbicides at controlling ivyleaf annual morningglory (*Ipomoea hederacea*). All treatments (ET, Envoke, Shark plus Insure, Agridex, or Ignite) gave excellent control, some less effective being Chateau with Insure. All treatments show minor injury.

Field Bindweed Control in Roundup Ready Flex Cotton The objective of this study was to evaluate the effectiveness of various herbicides at controlling field bindweed (*Convolvulus arvensis*). All treatments gave excellent control of field bindweed by 14 DAT, but ET, Chateau, and Shark with Roundup WeatherMax (all with Agridex) gave good control by 3 DAT. Envoke with Agridex, Envoke with Roundup WeatherMax and Agridex, Roundup WeatherMax with Insure, and Roundup WeatherMax with Ammonium sulfate gave poor control at 3 DAT, but improved by 7 DAT. Chateau, Shark, ET with Roundup WeatherMax, Chateau with Roundup WeatherMax, and Shark and Roundup WeatherMax (all with Agridex) all demonstrated some cotton injury at 3 DAT, but none had lasting, significant injury at 14 DAT.

Hooded vs. Direct Spraying in Roundup Ready Cotton for Ivyleaf Annual Morningglory Control The objective of this study was to evaluate the effectiveness of various herbicides using hooded spraying compared to sloppy direct spraying. All treatments (Roundup plus Shark, Ignite, Roundup plus AMS) demonstrated excellent control of ivyleaf annual morningglory by 23 DAT, with the hooded application providing slightly better or the same control when compared to a “sloppy” directed application of the same chemicals in all cases. The hooded treatments also caused slightly less injury than the sloppy direct application of the same chemicals in all cases. All injury was minor, with Roundup WeatherMax plus Ignite being the highest, and Ignite being the lowest.

A grass herbicide study to control RR corn in cotton – 2 applications are needed for complete control with Poast, Fusilade, or Prism. Ignite was not as effective.

Cotton Followed Burndown Herbicide Study

UCCE—Tulare/Kings Co.—WSREC—2007

Steve Wright, Lalo Banuelos, Matt Mills, Tony Garcia, Jason Maze

This trial was conducted at the West Side Research and Extension Center in Five Points. Treatments 1, 3-5, and 7-15 were applied on March 5, 2007. The temperature at application was 65°F and the wind speed varied from 0-2 mph. Treatments 2, 6, and 16 were applied on March 9, 2007. The temperature at this application was 69°F and the wind speed varied from 0-3 mph. All plots were 10 feet by 30 feet, with 3 replications. Treatments were applied using a CO₂ backpack sprayer at 30 psi, 10 gpa, 4.5 mph, and a mix size of 3 liters. The sprayer had 8002 flat fan nozzles.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling volunteer wheat, malva, shepherd's purse, and common fiddleneck. All treatments gave excellent control of volunteer wheat and common fiddleneck with the exception of ET with 2,4-D and COC, which only gave moderate control (Table 1 and 4). All treatments gave excellent control of malva and shepherd's purse (Table 2 and 3). Treatments containing Roundup gave the highest control of volunteer wheat and malva.

Table 1.

Volunteer Wheat Percent Control					
Treatments	Rate	4 DAT	11 DAT	21 DAT	35 DAT
1. ET (.25EC) + Roundup Weathermax (5.5SL) + COC	1.0 floz + 22 floz + 1% v/v	20	90	100	100
2. ET + Gramoxone Inteon (3SL) + NIS	1.0 floz + 20.8 floz + 0.25% v/v	0	77	89	79
3. ET + Ignite 280 (2.33EC) + COC	1.0 floz + 29 floz + 1% v/v	37	77	94	94
4. ET + 2,4-D (3.8SL) + COC	1.0 floz + 1 pt + 1% v/v	13	33	40	53
5. Chateau (51WG) + Roundup Weathermax	2.0 oz + 22 oz	25	90	100	100
6. Chateau (51WG) + Gramoxone Inteon	2.0 oz + 21 oz	0	63	83	83
7. Ignite 280	29 oz	42	77	93	93
8. Ignite 280	43 oz	38	87	99	99
9. Ignite 280 + Roundup Weathermax	29 oz + 21.5 oz	40	80	99	99
10. Ignite 280 + Roundup Weathermax	29 oz + 42 oz	42	90	100	100
11. Ignite 280 + Goal Tender (4F)	29 oz + 3 oz	38	77	87	90
12. Roundup Weathermax	22 oz	25	83	100	100
13. Roundup Weathermax + Goal Tender	22 oz + 3 oz	23	87	100	100
14. Roundup Weathermax + Shark	22 oz + 1 oz	32	87	100	100
15. Roundup Weathermax + 2,4-D	22 oz + 1 pt	23	87	100	100
16. Gramoxone Inteon + NIS	21 oz + 0.25% v/v	0	67	80	82
17. Untreated		0	0	0	0

Table 2.

Malva Percent Control					
Treatments	Rate	4 DAT	11 DAT	21 DAT	35 DAT
1. ET (.25EC) + Roundup Weathermax (5.5SL) + COC	1.0 floz + 22 floz + 1%v/v	20	77	92	100
2. ET + Gramoxone Inteon (3SL) + NIS	1.0 floz + 20.8 floz + 0.25%v/v	0	83	93	93
3. ET + Ignite 280 (2.33EC) + COC	1.0 floz + 29 floz + 1%v/v	47	80	83	83
4. ET + 2,4-D (3.8SL) + COC	1.0 floz + 1 pt + 1%v/v	47	63	70	87
5. Chateau (51WG) + Roundup Weathermax	2.0 oz + 22 oz	37	83	97	100
6. Chateau (51WG) + Gramoxone Inteon	2.0 oz + 21 oz	0	63	77	95
7. Ignite 280	29 oz	47	73	85	85
8. Ignite 280	43 oz	32	87	95	95
9. Ignite 280 + Roundup Weathermax	29 oz + 21.5 oz	48	83	92	95
10. Ignite 280 + Roundup Weathermax	29 oz + 42 oz	43	87	93	96
11. Ignite 280 + Goal Tender (4F)	29 oz + 3 oz	30	80	90	92
12. Roundup Weathermax	22 oz	33	73	92	99
13. Roundup Weathermax + Goal Tender	22 oz + 3 oz	17	87	98	100
14. Roundup Weathermax + Shark	22 oz + 1 oz	40	87	98	98
15. Roundup Weathermax + 2,4-D	22 oz + 1 pt	42	77	93	99
16. Gramoxone Inteon + NIS	21 oz + 0.25%v/v	0	57	65	83
17. Untreated		0	0	0	0

Table 3.

Shepherd's Purse Percent Control					
Treatments	Rate	4 DAT	11 DAT	21 DAT	35 DAT
1. ET (.25EC) + Roundup Weathermax (5.5SL) + COC	1.0 floz + 22 floz + 1%v/v	18	77	100	100
2. ET + Gramoxone Inteon (3SL) + NIS	1.0 floz + 20.8 floz + 0.25%v/v	0	97	100	100
3. ET + Ignite 280 (2.33EC) + COC	1.0 floz + 29 floz + 1%v/v	43	97	100	100
4. ET + 2,4-D (3.8SL) + COC	1.0 floz + 1 pt + 1%v/v	40	63	88	100
5. Chateau (51WG) + Roundup Weathermax	2.0 oz + 22 oz	22	90	100	100
6. Chateau (51WG) + Gramoxone Inteon	2.0 oz + 21 oz	0	97	100	100
7. Ignite 280	29 oz	40	90	100	100
8. Ignite 280	43 oz	28	97	100	100
9. Ignite 280 + Roundup Weathermax	29 oz + 21.5 oz	38	97	100	100
10. Ignite 280 + Roundup Weathermax	29 oz + 42 oz	32	100	100	100
11. Ignite 280 + Goal Tender (4F)	29 oz + 3 oz	33	97	100	100
12. Roundup Weathermax	22 oz	23	77	100	100
13. Roundup Weathermax + Goal Tender	22 oz + 3 oz	25	87	100	100
14. Roundup Weathermax + Shark	22 oz + 1 oz	30	93	100	100
15. Roundup Weathermax + 2,4-D	22 oz + 1 pt	32	87	100	100
16. Gramoxone Inteon + NIS	21 oz + 0.25%v/v	0	87	100	100
17. Untreated		0	0	0	0

Table 4.

Common Fiddleneck Percent Control

Treatments	Rate	4 DAT	11 DAT	21 DAT	35 DAT
1. ET (.25EC) + Roundup Weathermax (5.5SL) + COC	1.0 floz + 22 floz + 1% v/v	20	90	100	100
2. ET + Gramoxone Inteon (3SL) + NIS	1.0 floz + 20.8 floz + 0.25% v/v	0	60	70	100
3. ET + Ignite 280 (2.33EC) + COC	1.0 floz + 29 floz + 1% v/v	40	85	100	100
4. ET + 2,4-D (3.8SL) + COC	1.0 floz + 1 pt + 1% v/v	40	60	60	60
5. Chateau (51WG) + Roundup Weathermax	2.0 oz + 22 oz	35	90	100	100
6. Chateau (51WG) + Gramoxone Inteon	2.0 oz + 21 oz	0	55	60	95
7. Ignite 280	29 oz	40	90	100	100
8. Ignite 280	43 oz	40	100	100	100
9. Ignite 280 + Roundup Weathermax	29 oz + 21.5 oz	58	85	90	100
10. Ignite 280 + Roundup Weathermax	29 oz + 42 oz	45	80	100	100
11. Ignite 280 + Goal Tender (4F)	29 oz + 3 oz	15	85	100	100
12. Roundup Weathermax	22 oz	-	-	-	-
13. Roundup Weathermax + Goal Tender	22 oz + 3 oz	-	-	-	-
14. Roundup Weathermax + Shark	22 oz + 1 oz	-	-	-	-
15. Roundup Weathermax + 2,4-D	22 oz + 1 pt	30	75	100	100
16. Gramoxone Inteon + NIS	21 oz + 0.25% v/v	0	65	90	95
17. Untreated		-	-	-	-

Comparing Different Water Carrier Volumes with Roundup WeatherMax for Weed Control in Roundup Ready Cotton

UCCE — Tulare/Kings Co. — Pixley — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Anna Brown, Marlee Tollison, Sarah Hutmacher

This trial was conducted in Pixley. The treatments were applied to cotton that was 3-5 inches tall and in the 4-6 node stage on June 4, 2007. The temperature was 75°F with a wind factor of 2-4 mph. The applications were applied using a CO₂ backpack sprayer at a pressure of 30 psi, speed of 3.5 mph, and a mix size of 3 liters. The volumes were at 5, 10, 15, and 20 gpa and the nozzles were 8001, 8002, 8003, and 8004 flat fans respectively. The plot sizes were four 30 inch rows by 40 feet, with 4 replications. The weeds present at the time of application were tall annual morningglory in the 2-6 leaf stage and nutsedge that was 3-7" tall and in the 6-12 leaf stage. All treatments were applied at a rate of 32 fl oz of Roundup WeatherMax with 10 lbs of Ammonium sulfate per acre.

The objective of this study was to compare the effectiveness of Roundup WeatherMax at different rates of water. All treatments gave good control of tall annual morningglory at 7 DAT through 27 DAT (Table 1). All treatments gave moderate to good control of purple nutsedge 7 DAT through 20 DAT (Table 2). While control was similar among the various rates of gallonage, the trend indicated that the best control of tall annual morningglory and purple nutsedge was obtained by spraying at 15 gpa (Table 1 and 2) No cotton injury was observed with any treatment (Table 3).

Table 1.

Ivyleaf Annual Morningglory Percent Control					
Treatment	Gallonage	Nozzles	7 DAT	20 DAT	27 DAT
			11-Jun	25-Jun	2-Jul
1. Roundup WeatherMax + AMS	5 gpa	8001	84	81	88
2. Roundup WeatherMax + AMS	10 gpa	8002	85	86	89
3. Roundup WeatherMax + AMS	15 gpa	8003	84	85	90
4. Roundup WeatherMax + AMS	20 gpa	8004	85	85	85

Table 2.

Purple Nutsedge Percent Control				
Treatment	Gallonage	Nozzles	7 DAT	20 DAT
			11-Jun	25-Jun
1. Roundup WeatherMax + AMS	5 gpa	8001	73	67
2. Roundup WeatherMax + AMS	10 gpa	8002	75	69
3. Roundup WeatherMax + AMS	15 gpa	8003	73	75
4. Roundup WeatherMax + AMS	20 gpa	8004	72	62

Table 3.

Percent Cotton Injury					
Treatment	Gallonage	Nozzles	7 DAT	20 DAT	27 DAT
			11-Jun	25-Jun	2-Jul
1. Roundup WeatherMax + AMS	5 gpa	8001	0	0	0
2. Roundup WeatherMax + AMS	10 gpa	8002	0	0	0
3. Roundup WeatherMax + AMS	15 gpa	8003	0	0	0

Comparing Different Water Carrier Volumes with Ignite for Weed Control in Liberty Link Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Anna Brown, Marlee Tollison, Sarah Hutmacher

This trial was conducted in Tulare. The treatments were applied to Fibermax Daytona LL cotton that was 25-27 inches tall and in the 13-15 node stage on June 20, 2007. The temperature was 74°F with no wind factor. The applications were applied using a CO₂ backpack sprayer at a pressure of 30 psi, speed of 3.5 mph, and a mix size of 3 liters. The volumes were at 5, 10, 15, and 20 gpa and the nozzles were 8001, 8002, 8003, and 8004 flat fans respectively. The plot sizes were two 30 inch rows by 30 feet, with 3 replications. The weeds present were tall annual morningglory at 2-30 inches tall and the two-leaf to twining stage with 26-30 plants/square foot, purple nutsedge at 2-10 inches tall, johnsongrass at 7-57 inches tall, and pigweed at 31-47 inches tall. All treatments were applied at a rate of 29 fl oz of Ignite per acre.

The objective of this study was to compare the effectiveness of Ignite at different rates of gallonage. All treatments gave excellent, immediate control of Ivyleaf Annual Morningglory at 9 DAT through 23 DAT (Table 1). All treatments gave excellent control of purple nutsedge 9 DAT through 23 DAT. While control was similar among the various rates of gallonage, the best control of purple nutsedge was obtained by spraying at 10 gpa (Table 2). No cotton injury was observed with any treatment (Table 3).

Table 1.

Ivyleaf Annual Morningglory Percent Control					
Treatment	Gallonage	Nozzles	9 DAT	13 DAT	23 DAT
			29-Jun	3-Jul	13-Jul
1. Ignite	5 gpa	8001	100	100	100
2. Ignite	10 gpa	8002	100	100	100
3. Ignite	15 gpa	8003	100	100	100
4. Ignite	20 gpa	8004	100	100	100

Table 2.

Purple Nutsedge Percent Control					
Treatment	Gallonage	Nozzles	9 DAT	13 DAT	23 DAT
			29-Jun	3-Jul	13-Jul
1. Ignite	5 gpa	8001	83	85	93
2. Ignite	10 gpa	8002	93	93	97
3. Ignite	15 gpa	8003	88	88	95
4. Ignite	20 gpa	8004	93	85	95

Table 3.

Percent Cotton Injury					
Treatment	Gallonage	Nozzles	9 DAT	13 DAT	23 DAT
			29-Jun	3-Jul	13-Jul
1. Ignite	5 gpa	8001	0	0	0
2. Ignite	10 gpa	8002	0	0	0
3. Ignite	15 gpa	8003	0	0	0
4. Ignite	20 gpa	8004	0	0	0

Field Bindweed Control in Roundup Ready Flex Cotton

UCCE — Tulare/Kings Co. — WSREC — 2007

Steve Wright, Lalo Banuelos, Matt Mills. Sarah Hutmacher, Anna Brown, Marlee Tollison, Linzy Morris

The bindweed control study was conducted in cooperation with the West Side Research and Extension Center. The treatments were applied on June 26, 2007 to Phy-725 RF that was 28-30 inches tall and in the 16-18 node stage. The temperature was 68°F with no wind factor. A CO₂ backpack sprayer was used with a volume of 15 gpa, pressure of 30 psi, speed of 3.5 mph, and a mix size of 3 liters. 8002 flat fan nozzles were used with two 24 inch drops per row. The plot sizes were four 38 inch rows by 35 feet, with three replications.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling bindweed. All treatments gave excellent control of field bindweed by 14 DAT, but ET, Chateau, and Shark with Roundup WeatherMax (all with Agridex) gave good control by 3 DAT (Table 1). Envoke with Agridex, Envoke with Roundup WeatherMax and Agridex, Roundup WeatherMax with Insure, and Roundup WeatherMax with Ammonium sulfate gave poor control at 3 DAT, but improved by 7 DAT (Table 1). Chateau, Shark, ET with Roundup WeatherMax, Chateau with Roundup WeatherMax, and Shark and Roundup WeatherMax (all with Agridex) all demonstrated some cotton injury at 3 DAT, but none had lasting, significant injury at 14 DAT (Table 2).

Table 1.

Field Bindweed Percent Control				
Treatments	Rate pr/A	29-Jun	10-Jul	17-Jul
		3 DAT	14 DAT	21 DAT
1. ET + Agridex	1 fl oz + 1% v/v	83	100	100
2. Chateau + Agridex	2 oz + 1% v/v	81	95	95
3. Envoke + Agridex	0.15 oz + 1% v/v	23	68	95
4. Shark + Agridex	2 oz + 1% v/v	68	100	100
5. ET + Roundup WeatherMax + Agridex	1 fl oz + 32 floz + 1% v/v	76	100	100
6. Chateau + Roundup WeatherMax + Agridex	2 oz + 32 floz + 1% v/v	79	100	100
7. Envoke + Roundup WeatherMax + Agridex	0.15 oz + 32 floz + 1% v/v	24	98	100
8. Shark + Roundup WeatherMax + Agridex	2 oz + 32 floz + 1% v/v	84	100	100
9. Roundup WeatherMax + Insure	32 floz + 16 oz/100 gal	36	96	95
10. Roundup WeatherMax + AMS	32 floz + 1.2 lb	33	100	100
11. Ignite	29 floz	61	98	100
12. Venue + Roundup WeatherMax + Agridex	1.4 floz + 32 fl oz + 1% v/v	76	100	100

Table 2.

Percent Cotton Injury				
Treatments	Rate pr/A	29-Jun	10-Jul	17-Jul
		3 DAT	14 DAT	21 DAT
1. ET + Agridex	1 fl oz + 1% v/v	9	13	10
2. Chateau + Agridex	2 oz + 1% v/v	14	10	1
3. Envoke + Agridex	0.15 oz + 1% v/v	1	3	0
4. Shark + Agridex	2 oz + 1% v/v	10	14	3
5. ET + Roundup WeatherMax + Agridex	1 fl oz + 32 floz + 1% v/v	13	11	3
6. Chateau + Roundup WeatherMax + Agridex	2 oz + 32 floz + 1% v/v	16	15	6
7. Envoke + Roundup WeatherMax + Agridex	0.15 oz + 32 floz + 1% v/v	8	8	0
8. Shark + Roundup WeatherMax + Agridex	2 oz + 32 floz + 1% v/v	15	14	6
9. Roundup WeatherMax + Insure	32 floz + 16 oz/100 gal	5	1	0
10. Roundup WeatherMax + AMS	32 floz + 1.2 lb	1	0	0
11. Ignite	29 floz	6	11	11
12. Venue + Roundup WeatherMax + Agridex	1.4 floz + 32 fl oz + 1% v/v	10	9	4

Purple Nutsedge Control and Crop Safety in Roundup Ready Cotton

UCCE — Tulare/Kings Co. — Tipton — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Tony Garcia, Anna Brown, Marlee Tollison, Sarah Hutmacher

This trial was conducted with a cooperator in Tipton. The A treatments were applied on April 17, 2007 to Daytona RF cotton that was ½-1 inch tall and in the cotyledon stage. The temperature was 78°F with a wind factor of 0-3 mph. The B treatments were applied on May 30, 2007 when the cotton that was 5-8 inches tall and in the 5- 7 node stage. The temperature was 85°F with a wind factor of 0-3 mph. Both treatments were applied using a CO₂ backpack sprayer at a volume of 10 gpa, pressure of 30 psi, speed of 5 mph, a mix size of 1.5 liters, using 8002 flat fan nozzles. The plot sizes were two 38 inch rows by 25 feet, with three replications.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling nutsedge. MSMA with COC, Roundup WeatherMax with AMS, and Envoke with COC (applied on April 17 over the top and directed) demonstrated the best control at 70 DAT, with good control by 28 DAT. Sandea at 0.67 ounces per acre and 1 oz/a (both applied on April 17 over the top), and Envoke with COC (applied on May 30 as a directed spray) provided the least control, with only moderate control (Table 1). While some treatments had mild to moderate injury earlier in the trial, by 70 DAT, only Sandea with COC (at 0.67, 1, and 1.3 ounces per acre applied as a shielded spray on May 30) still had moderate injury by 70 DAT (Table 2).

Table 1.

Purple Nutsedge Percent Control												
Treatment	Rate pr/A	Timing	Method	8 DAT	14 DAT	21 DAT	28 DAT	42 DAT	49 DAT	56 DAT	62 DAT	70 DAT
				25- Apr	1- May	8- May	15- May	29- May	5- Jun	11- Jun	25- Jun	3- Jul
1. Sandea	0.67 oz	A	OTT	0	15	37	72	72	52	52	60	50
2. Sandea	1.0 oz	A	OTT	0	17	40	72	72	55	55	63	60
3. Sandea	1.3 oz	A	OTT	0	25	45	73	73	60	60	67	73
4. Sandea + COC	0.67 oz + 0.25% v/v	B	Directed	0	0	0	0	0	50	72	70	38
5. Sandea + COC	1.0 oz + 0.25% v/v	B	Directed	0	0	0	0	0	50	50	70	50
6. Sandea + COC	1.3 oz + 0.25% v/v	B	Directed	0	0	0	0	0	62	62	77	53
7. Sandea + COC	0.67 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	63	65	67	53
8. Sandea + COC	1.0 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	70	73	63	57
9. Sandea + COC	1.3 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	62	65	77	60
10. MSMA + COC	2.4 pt + 0.25% v/v	AB	OTT/ Directed	0	27	43	67	63	63	65	55	90
11. Roundup Weathermax + AMS	22.0 oz + 10 lbs	AB	OTT/ Directed	0	15	48	77	72	63	65	67	93
12. Envoke + COC	0.15 oz + 0.25% v/v	A	OTT/ Directed	0	15	50	83	80	73	70	55	92
13. Envoke + COC	0.15 oz + 0.25% v/v	B	Directed	0	0	0	0	0	70	70	65	60
14. Untreated	---	---	---	0	0	0	0	0	0	0	0	0

*OTT=Over the top

Table 2.

Cotton Percent Injury												
Treatment	Rate pr/A	Timing	Method	8	14	21	28	42	49	56	62	70
				DAT	DAT	DAT	DAT	DAT	DAT	DAT	DAT	DAT
				25-	1-	8-	15-	29-	5-	11-	25-	3-
				Apr	May	May	May	May	Jun	Jun	Jun	Jul
1. Sandea	0.67 oz	A	OTT	0	13	23	35	30	17	23	3	0
2. Sandea	1.0 oz	A	OTT	0	17	28	40	33	17	22	5	0
3. Sandea	1.3 oz	A	OTT	0	22	30	40	33	20	20	3	0
4. Sandea + COC	0.67 oz + 0.25%v/v	B	Directed	0	0	0	0	0	0	37	13	0
5. Sandea + COC	1.0 oz + 0.25%v/v	B	Directed	0	0	0	0	0	0	0	5	3
6. Sandea + COC	1.3 oz + 0.25%v/v	B	Directed	0	0	0	0	0	0	17	12	3
7. Sandea + COC	0.67 oz + 0.25%v/v	B	Shielded	0	0	0	0	0	40	42	52	30
8. Sandea + COC	1.0 oz + 0.25%v/v	B	Shielded	0	0	0	0	0	22	37	63	35
9. Sandea + COC	1.3 oz + 0.25%v/v	B	Shielded	0	0	0	0	0	40	53	70	48
10. MSMA + COC	2.4 pt + 0.25%v/v	AB	OTT/ Directed	0	23	22	22	2	13	10	3	0
11. Roundup Weathermax + AMS	22.0 oz + 10 lbs	AB	OTT/ Directed	0	17	7	0	0	32	27	17	0
12. Envoke + COC	0.15 oz + 0.25%v/v	A	OTT/ Directed	0	13	10	8	3	0	0	0	0
13. Envoke + COC	0.15 oz + 0.25%v/v	B	Directed	0	0	0	0	0	37	38	17	0
14. Untreated	---	---	---	0	0	0	0	0	0	0	0	0

*OTT=Over the top

Table 3.

Yield Data							
Treatment	Rate pr/A	Timing	Method	Seed Cotton lbs/A	Lint %	Gin T.O. %	Lint Yield lbs/A
1. Sandea	0.67 oz	A	OTT	5343	40.0	37.8	2022
2. Sandea	1.0 oz	A	OTT	6513	40.2	38.2	2485
3. Sandea	1.3 oz	A	OTT	6137	39.5	37.0	2271
4. Sandea + COC	0.67 oz + 0.25% v/v	B	Directed	5303	40.7	38.5	2039
5. Sandea + COC	1.0 oz + 0.25% v/v	B	Directed	5253	39.7	37.7	1979
6. Sandea + COC	1.3 oz + 0.25% v/v	B	Directed	5930	40.2	38.8	2301
7. Sandea + COC	0.67 oz + 0.25% v/v	B	Shielded	4237	40.5	38.4	1626
8. Sandea + COC	1.0 oz + 0.25% v/v	B	Shielded	5577	40.1	38.2	2134
9. Sandea + COC	1.3 oz + 0.25% v/v	B	Shielded	3827	39.9	37.5	1434
10. MSMA + COC	2.4 pt + 0.25% v/v	AB	OTT/Directed	7767	39.8	37.7	2925
11. Roundup Weathermax + AMS	22.0 oz + 10 lbs	AB	OTT/Directed	7190	39.5	37.0	2662
12. Envoke + COC	0.15 oz + 0.25% v/v	A	OTT/Directed	6693	40.3	37.7	2529
13. Envoke + COC	0.15 oz + 0.25% v/v	B	Directed	5243	39.7	37.8	1989
14. Untreated	---	---	---	6283	40.2	38.2	2407

*OTT=Over the top

Johnsongrass Control Study in Liberty Link Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Anna Brown, Sarah Hutmacher, Marlee Tollison

This trial was conducted with a cooperator in Tulare. The treatments were applied on June 20, 2007 to Fibermax Daytona LL cotton that was 25-27 inches tall and in the 13-15 node stage. The temperature was 74°F with no wind factor. The treatments were reapplied on July 13, 2007. The temperature was 84°F with no wind factor. Both treatments were applied over the top using a CO₂ backpack sprayer at a volume of 15 gpa, pressure of 30 psi, speed of 3.5 mph, a mix size of 3 liters, using 8002 flat fan nozzles. The plot sizes were two 30 inch rows by 30 feet, with three replications. The johnsongrass was 7-57 inches tall and in the 5-12 leaf stage.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling johnsongrass. The Ignite had good initial control at 9 DAT which declined until after the second treatment, when it demonstrated good initial control. The other treatments (PrismMax, Fusilade, and Poast) had moderate to good control from 9-23 days after the first treatment, and then moderate to excellent control from 7-24 days after the second treatment (Table 1). None of the treatments demonstrated any injury to the cotton (Table 2).

Table 1.

Johnsongrass Percent Control							
Treatment	Rate pr/A	9 DAT	13 DAT	23 DAT	7 DAT	13 DAT	24 DAT
		29-Jun	3-Jul	13-Jul	20-Jul	26-Jul	6-Aug
1. Prism Max + Agridex	18 oz + .25% v/v + 2.5 lb	77	77	77	57	92	94
2. Fusilade + Agridex	17 oz + 1% v/v + 2.5 lb	67	72	83	53	90	94
3. Poast + Agridex	2.5 pt + 1% v/v + 2.5 lb	67	70	80	60	92	93
4. Ignite	29 oz	85	85	63	63	82	75

Table 2.

Percent Cotton Injury							
Treatment	Rate pr/A	9 DAT	13 DAT	23 DAT	7 DAT	13 DAT	24 DAT
		29-Jun	3-Jul	13-Jul	20-Jul	26-Jul	6-Aug
1. Prism Max + Agridex	18 oz + .25% v/v + 2.5 lb	0	0	0	0	0	0
2. Fusilade + Agridex	17 oz + 1% v/v + 2.5 lb	0	0	0	0	0	0
3. Poast + Agridex	2.5 pt + 1% v/v + 2.5 lb	0	0	0	0	0	0
4. Ignite	29 oz	0	0	0	0	0	0

Weed Control Layby in Liberty Link Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Sarah Hutmacher, Anna Brown, Marlee Tollison

The trial was conducted with a cooperater in Tulare. The treatments were applied on June 20, 2007 to Fibermax Daytona LL cotton that was 25-27 inches tall and in the 13-15 node stage. The temperature was 74°F with no wind factor. The treatments were applied using a CO₂ backpack sprayer at a volume of 15 gpa, pressure of 30 psi, speed of 3.5 mph, a mix size of 3 liters, using 8002 flat fan nozzles. The plot sizes were two 30 inch rows by 30 feet, with three replications. The weeds present at the time of application were johnsongrass at 7-57 inches tall and in the 5-12 leaf stage, purple nutsedge at 2-10 inches tall, pigweed at 30-45 inches tall, volunteer corn at 27-32 inches tall, and Ivyleaf Annual Morningglory in the two-leaf to twining stages with 26-30 plants per square foot.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling johnsongrass, purple nutsedge, and Ivyleaf Annual Morningglory. Most of the treatments provided excellent control of Ivyleaf Annual Morningglory through 23 days after the first application, with the exception of Chateau with Insure, Envoke with Agridex, and Envoke with Insure, which all had poor to fair control. The second application treatments both had consistent, moderate control of Ivyleaf Annual Morningglory (Table 1). All of the treatments with Ignite had good to excellent control of purple nutsedge, the best being Ignite alone, while all others had poor to moderate control (Table 2). Chateau with Ignite, Envoke with Ignite, and Venue with Roundup WeatherMax and Agridex all had moderate to good control of johnsongrass, while all other treatments had poor to moderate control (Table 3). The first nine treatments all showed minor injury to the cotton, with Chateau plus Ignite being the worst at 42% initially to 17% by the end of the trial (Table 4).

Table 1.

Ivyleaf Ivyleaf Annual Morningglory Percent Control				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	100	100	100
2. ET + Insure	1 fl oz + 1 pt/100 gal	87	87	100
3. ET + Ignite	1 fl oz + 29 oz	100	100	100
4. Shark + Agridex	2 oz + 4.8 oz	100	100	100
5. Shark + Insure	2 oz + 1 pt/100 gal	100	100	100
6. Shark + Ignite	2 oz + 29 oz	100	100	100
7. Chateau + Agridex	2 oz + 4.8 oz	93	97	100
8. Chateau + Insure	2 oz + 1 pt/100 gal	40	40	40
9. Chateau + Ignite	2 oz + 29 oz	100	100	100
10. Envoke + Agridex	0.15 oz + 4.8 oz	20	20	22
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	23	23	20
12. Envoke + Ignite	0.15 oz + 29 oz	100	100	100
13. Ignite	29 oz	100	100	100
Treatments	Rate pr/A	4 DAT	14 DAT	21 DAT
		3-Jul	13-Jul	20-Jul
14. ET + Roundup WeatherMax + Agridex	0.5 fl oz + 32 floz + 4.8 oz	55	72	65
15. Venue + Roundup WeatherMax + Agridex	0.7 floz + 32 floz + 4.8oz	63	80	73

Table 2.

Purple Nutsedge Percent Control				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	57	57	27
2. ET + Insure	1 fl oz + 1 pt/100 gal	52	52	20
3. ET + Ignite	1 fl oz + 29 oz	88	88	92
4. Shark + Agridex	2 oz + 4.8 oz	68	68	53
5. Shark + Insure	2 oz + 1 pt/100 gal	53	53	20
6. Shark + Ignite	2 oz + 29 oz	85	85	77
7. Chateau + Agridex	2 oz + 4.8 oz	53	53	60
8. Chateau + Insure	2 oz + 1 pt/100 gal	13	13	23
9. Chateau + Ignite	2 oz + 29 oz	85	85	90
10. Envoke + Agridex	0.15 oz + 4.8 oz	13	13	23
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	3	2	0
12. Envoke + Ignite	0.15 oz + 29 oz	85	85	93
13. Ignite	29 oz	88	88	95
Treatments	Rate pr/A	4 DAT	14 DAT	21 DAT
		3-Jul	13-Jul	20-Jul
14. ET + Roundup WeatherMax + Agridex	0.5 fl oz + 32 floz + 4.8 oz	32	53	33
15. Venue + Roundup WeatherMax + Agridex	0.7 floz + 32 floz + 4.8oz	10	70	47

Table 3.

Johnsongrass Percent Control				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	27	27	13
2. ET + Insure	1 fl oz + 1 pt/100 gal	30	30	13
3. ET + Ignite	1 fl oz + 29 oz	47	47	47
4. Shark + Agridex	2 oz + 4.8 oz	13	13	18
5. Shark + Insure	2 oz + 1 pt/100 gal	30	30	30
6. Shark + Ignite	2 oz + 29 oz	50	50	30
7. Chateau + Agridex	2 oz + 4.8 oz	43	43	15
8. Chateau + Insure	2 oz + 1 pt/100 gal	27	27	17
9. Chateau + Ignite	2 oz + 29 oz	83	83	72
10. Envoke + Agridex	0.15 oz + 4.8 oz	37	37	18
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	27	27	8
12. Envoke + Ignite	0.15 oz + 29 oz	90	90	73
13. Ignite	29 oz	67	67	43
Treatments	Rate pr/A	4 DAT	14 DAT	21 DAT
		3-Jul	13-Jul	20-Jul
14. ET + Roundup WeatherMax + Agridex	0.5 fl oz + 32 floz + 4.8 oz	22	65	65
15. Venue + Roundup WeatherMax + Agridex	0.7 floz + 32 floz + 4.8oz	28	72	72

Table 4.

Percent Cotton Injury				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	13	13	12
2. ET + Insure	1 fl oz + 1 pt/100 gal	23	23	13
3. ET + Ignite	1 fl oz + 29 oz	20	20	10
4. Shark + Agridex	2 oz + 4.8 oz	22	22	12
5. Shark + Insure	2 oz + 1 pt/100 gal	23	23	12
6. Shark + Ignite	2 oz + 29 oz	15	15	13
7. Chateau + Agridex	2 oz + 4.8 oz	8	8	13
8. Chateau + Insure	2 oz + 1 pt/100 gal	7	7	8
9. Chateau + Ignite	2 oz + 29 oz	42	42	17
10. Envoke + Agridex	0.15 oz + 4.8 oz	0	0	0
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	0	0	0
12. Envoke + Ignite	0.15 oz + 29 oz	0	0	0
13. Ignite	29 oz	0	0	0
Treatments	Rate pr/A	4 DAT	14 DAT	21 DAT
		3-Jul	13-Jul	20-Jul
14. ET + Roundup WeatherMax + Agridex	0.5 fl oz + 32 floz + 4.8 oz	12	10	5
15. Venue + Roundup WeatherMax + Agridex	0.7 floz + 32 floz + 4.8oz	13	10	5

Weed Control Layby in Roundup Ready Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Sarah Hutmacher, Anna Brown, Marlee Tollison

The trial was conducted with a cooperator in Tulare. The treatments were applied on June 20, 2007 to Phy-725 RF cotton that was 20-24 inches tall and in the 13-15 node stage. The temperature was 74°F with no wind factor. The treatments were applied using a CO₂ backpack sprayer at a volume of 15 gpa, pressure of 30 psi, speed of 3.5 mph, a mix size of 3 liters, using 8002 flat fan nozzles. The plot sizes were two 30 inch rows by 30 feet, with three replications. The weeds present at the time of application were johnsongrass at 7-57 inches tall and in the 5-12 leaf stage, purple nutsedge at 2-10 inches tall, pigweed at 30-45 inches tall, volunteer corn at 27-32 inches tall, and Ivyleaf Annual Morningglory in the two-leaf to twining stages with 26-30 plants per square foot.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling Ivyleaf Annual Morningglory. All treatments gave excellent control at 23 DAT, with the least effective being Chateau with Insure (Table 1). The first nine treatments demonstrated minor cotton injury, all under 15% by 23 DAT (Table 2).

Table 1.

Ivyleaf Annual Morningglory Percent Control				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	100	100	100
2. ET + Insure	1 fl oz + 1 pt/100 gal	87	100	100
3. ET + Ignite	1 fl oz + 29 oz	100	100	100
4. Shark + Agridex	2 oz + 4.8 oz	100	100	100
5. Shark + Insure	2 oz + 1 pt/100 gal	100	100	100
6. Shark + Ignite	2 oz + 29 oz	93	95	100
7. Chateau + Agridex	2 oz + 4.8 oz	92	92	100
8. Chateau + Insure	2 oz + 1 pt/100 gal	53	80	93
9. Chateau + Ignite	2 oz + 29 oz	100	100	100
10. Envoke + Agridex	0.15 oz + 4.8 oz	92	95	100
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	82	92	100
12. Envoke + Ignite	0.15 oz + 29 oz	98	100	100
13. Ignite	29 oz	98	100	100

Table 2.

Percent Cotton Injury				
Treatments	Rate pr/A	9 DAT	13 DAT	23 DAT
		29-Jun	3-Jul	13-Jul
1. ET + Agridex	1 fl oz + 4.8 oz	15	20	12
2. ET + Insure	1 fl oz + 1 pt/100 gal	13	15	10
3. ET + Ignite	1 fl oz + 29 oz	13	12	10
4. Shark + Agridex	2 oz + 4.8 oz	20	23	15
5. Shark + Insure	2 oz + 1 pt/100 gal	18	18	13
6. Shark + Ignite	2 oz + 29 oz	20	23	13
7. Chateau + Agridex	2 oz + 4.8 oz	15	12	7
8. Chateau + Insure	2 oz + 1 pt/100 gal	8	8	7
9. Chateau + Ignite	2 oz + 29 oz	25	18	13
10. Envoke + Agridex	0.15 oz + 4.8 oz	5	0	0
11. Envoke + Insure	0.15 oz + 1 pt/100 gal	5	0	0
12. Envoke + Ignite	0.15 oz + 29 oz	5	0	0
13. Ignite	29 oz	0	0	0

Hooded vs. Direct Spraying in Roundup Ready Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banelos, Matt Mills, Sarah Hutmacher, Anna Brown, Marlee Tollison

This trial was conducted with a cooperator in Tulare. The treatments were applied on June 27, 2007 to Phy-725 RF cotton that was 20-24 inches tall and in the 13-15 node stage. The temperature was 86°F with no wind factor. The applications were applied using a pull-behind with a tractor at a pressure of 30 psi, volume of 15 gpa, speed of 3.5 mph, and 8003 flat fan nozzles (2 per row). The plot sizes were six 30 inch rows by 100 feet, with 3 replications. The weeds present were purple nutsedge at 2-10 inches tall, volunteer corn at 27-32 inches tall, johnsongrass at 7-57 inches tall, pigweed at 30-45 inches tall, and Ivyleaf Annual Morningglory at 2-6 inches tall in the two-leaf to twining stage with 26-30 plants per square foot.

The objective of this study was to evaluate the effectiveness of various herbicides using hooded spraying compared to sloppy direct spraying. All treatments demonstrated excellent control of ivyleaf annual morningglory by 23 DAT, with the hooded application providing slightly better or the same control when compared to the sloppy direct application of the same chemical(s) in all cases (Table 1). The hooded treatments also caused slightly less injury than the sloppy direct application of the same chemical(s) in all cases. All injury was minor, with Roundup WeatherMax with Ignite being the highest, and Ignite being the lowest (Table 2).

Table 1.

Ivyleaf Annual Morningglory Percent Control					
Treatments	Rate pr/A	Method	3-Jul	13-Jul	20-Jul
			6 DAT	16 DAT	23 DAT
1. Roundup Weathermax + AMS	32 oz + 10 lbs.	Hooded	88	93	96
2. Roundup Weathermax + AMS	32 oz + 10 lbs.	Sloppy Direct	68	93	93
3. Ignite	29 oz	Hooded	100	100	100
4. Ignite	29 oz	Sloppy Direct	93	95	97
5. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10 lbs.	Hooded	100	100	100
6. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10 lbs.	Sloppy Direct	97	100	100
7. Roundup Weathermax + Ignite	32 oz + 29 oz	Hooded	93	98	100
8. Roundup Weathermax + Ignite	32 oz + 29 oz	Sloppy Direct	85	92	98

Table 2.

Percent Cotton Injury					
Treatments	Rate pr/A	Method	3-Jul	13-Jul	20-Jul
			6 DAT	16 DAT	23 DAT
1. Roundup Weathermax + AMS	32 oz + 10 lbs.	Hooded	0	0	0
2. Roundup Weathermax + AMS	32 oz + 10 lbs.	Sloppy Direct	0	0	0
3. Ignite	29 oz	Hooded	2	7	7
4. Ignite	29 oz	Sloppy Direct	3	8	13
5. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10 lbs.	Hooded	0	5	10
6. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10 lbs.	Sloppy Direct	8	8	13
7. Roundup Weathermax + Ignite	32 oz + 29 oz	Hooded	2	5	8
8. Roundup Weathermax + Ignite	32 oz + 29 oz	Sloppy Direct	2	7	15

Pressure Study in Roundup Ready Cotton

UCCE — Tulare/Kings Co. — Tulare — 2007

Steve Wright, Lalo Banuelos, Craig Yancy, Sarah Hutmacher, Anna Brown, Marlee Tollison

This trial was conducted with a cooperator in Tulare. The treatments were applied on June 29, 2007 to Fibermax Daytona LL cotton. The temperature was 68°F with a wind factor of 0-2 mph. The treatments were applied using a CO₂ backpack sprayer at a volume of 15 gpa, a mix size of 3 gpa, with 8002 flat fan nozzles. The two pressures that were being evaluated were 30 psi and 60. For the 30 psi treatments, the speed was 3.5 mph, and for the 60 psi treatments, the speed was 5 mph. The plot size was two 30 inch rows by 30 feet, with 3 replications.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling ivyleaf annual morningglory, purple nutsedge, and johnsongrass and to compare the control achieved by spraying at 30 psi and 60 psi. All treatments gave excellent control of ivyleaf annual morningglory by 14 DAT (Table 1). Treatment 7 (Roundup WeatherMax with Ammonium sulfate at 60 psi) gave excellent control of purple nutsedge by 21 DAT, while all other treatments gave moderate control (Table 2). All treatments gave poor to moderate control of johnsongrass (Table 3). All treatments showed minor injury under 15% (Table 4).

Table 1.

Ivyleaf Annual Morningglory Percent Control					
Treatments	Rate pr/A	Pressure	3-Jul	13-Jul	20-Jul
			4 DAT	14 DAT	21 DAT
1. Roundup Weathermax + AMS	32 floz + 10 lbs	30 psi	28	83	73
2. Ignite	29 floz	30 psi	50	100	100
3. Shark + Agridex	2 floz + 1% v/v	30 psi	97	100	100
4. ET + Agridex	1 floz + 1% v/v	30 psi	77	100	100
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	60	92	83
6. Karmex + Agridex	2 # + 1% v/v	30 psi	37	88	83
7. Roundup Weathermax + AMS	32 floz + 10 lbs	60 psi	17	82	80
8. Ignite	29 fl oz	60 psi	20	95	90
9. Shark + Agridex	2 floz + 1% v/v	60 psi	72	100	100
10. ET + Agridex	1 floz + 1% v/v	60 psi	92	97	93
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	82	85	83
12. Karmex + Agridex	2 lbs + 1% v/v	60 psi	63	95	85

Table 2.

Purple Nutsedge Percent Control					
Treatments	Rate pr/A	Pressure	3-Jul	13-Jul	20-Jul
			4 DAT	14 DAT	21 DAT
1. Roundup Weathermax + AMS	32 floz + 10 lbs	30 psi	8	63	37
2. Ignite	29 floz	30 psi	22	73	57
3. Shark + Agridex	2 floz + 1% v/v	30 psi	28	47	53
4. ET + Agridex	1 floz + 1% v/v	30 psi	18	40	47
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	13	67	33
6. Karmex + Agridex	2 # + 1% v/v	30 psi	13	53	57
7. Roundup Weathermax + AMS	32 floz + 10 lbs	60 psi	17	73	83
8. Ignite	29 fl oz	60 psi	17	67	67
9. Shark + Agridex	2 floz + 1% v/v	60 psi	25	33	47
10. ET + Agridex	1 floz + 1% v/v	60 psi	27	37	47
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	47	55	57
12. Karmex + Agridex	2 lbs + 1% v/v	60 psi	12	43	67

Table 3.

Johnsongrass Percent Control					
Treatments	Rate pr/A	Pressure	3-Jul	13-Jul	20-Jul
			4 DAT	14 DAT	21 DAT
1. Roundup Weathermax + AMS	32 floz + 10 lbs	30 psi	23	63	50
2. Ignite	29 floz	30 psi	13	40	35
3. Shark + Agridex	2 floz + 1% v/v	30 psi	15	40	35
4. ET + Agridex	1 floz + 1% v/v	30 psi	10	15	8
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	18	17	12
6. Karmex + Agridex	2 # + 1% v/v	30 psi	10	20	10
7. Roundup Weathermax + AMS	32 floz + 10 lbs	60 psi	20	65	53
8. Ignite	29 fl oz	60 psi	20	43	33
9. Shark + Agridex	2 floz + 1% v/v	60 psi	12	33	23
10. ET + Agridex	1 floz + 1% v/v	60 psi	10	10	3
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	40	33	20
12. Karmex + Agridex	2 lbs + 1% v/v	60 psi	20	20	10

Table 4.

Percent Cotton Injury					
Treatments	Rate pr/A	Pressure	3-Jul	13-Jul	20-Jul
			4 DAT	14 DAT	21 DAT
1. Roundup Weathermax + AMS	32 floz + 10 lbs	30 psi	5	5	3
2. Ignite	29 floz	30 psi	0	0	0
3. Shark + Agridex	2 floz + 1% v/v	30 psi	17	13	13
4. ET + Agridex	1 floz + 1% v/v	30 psi	18	12	15
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	12	10	12
6. Karmex + Agridex	2 # + 1% v/v	30 psi	10	5	7
7. Roundup Weathermax + AMS	32 floz + 10 lbs	60 psi	5	5	5
8. Ignite	29 fl oz	60 psi	0	0	0
9. Shark + Agridex	2 floz + 1% v/v	60 psi	15	10	12
10. ET + Agridex	1 floz + 1% v/v	60 psi	15	8	12
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	17	12	10
12. Karmex + Agridex	2 lbs + 1% v/v	60 psi	7	7	8

Crop Safety in Roundup Ready Cotton

UCCE - Kings/Tulare Co. - WSREC – 2007

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This study was conducted at the West Side Research and Extension Center. The first application was applied on April 27, 2007 to Phy-725 RF cotton. Temperature was 78° F with 0-2 mph wind factor. A CO₂ backpack was used with 8002 flat fan nozzles at a speed of 5 mph, volume of 10 gpa, and pressure of 30 psi. The second application was applied on June 12, 2007. Temperature was 84°F with a wind factor of approximately 3-5 mph. A CO₂ backpack was used with 8002 flat fan nozzles at a speed of 5 mph, volume of 10 gpa, and pressure of 30 psi.

The objective of this study was to evaluate the cotton injury caused by varying rates of Sandea and other herbicides. Sandea applied over the top to young cotton at all rates and MSMA caused cotton injury for 5 weeks after application. Envoke caused slight injury for 3 weeks. Sandea and MSMA caused plant injury for 3 weeks after a directed spray. The shielded spray with Sandea had less injury for 3 weeks. There were no differences in total nodes at harvest however most Sandea, Envoke, and MSMA treatments reduced plant height by 2-5 inches except for Sandea over the top or shielded at the low rate and Envoke as a directed spray. Sandea applied over the top or shielded at lowest rate, Roundup, and Envoke at the lowest rate applied in 2 applications resulted in the same yields as the Untreated Check. Sandea with directed sprays caused the most severe yield loss. MSMA caused a slight yield reduction

Table 1.

Percent Cotton Injury												
Treatment	Rate pr/A	Timing	Method	7 DAT	14 DAT	23 DAT	28 DAT	42 DAT	56 DAT	63 DAT	77 DAT	99 DAT
				2- May	8- May	17- May	22- May	5- Jun	19- Jun	26- Jun	10- Jul	1- Aug
1. Sandea	0.67 oz	A	OTT	28	26	19	15	11	0	0	0	0
2. Sandea	1.0 oz	A	OTT	35	36	41	39	18	0	0	0	0
3. Sandea	1.3 oz	A	OTT	30	39	55	54	28	0	0	0	0
4. Sandea + COC	0.67 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	21	8	0	0
5. Sandea + COC	1.0 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	25	20	5	0
6. Sandea + COC	1.3 oz + 0.25% v/v	B	Shielded	0	0	0	0	0	28	19	8	0
7. Sandea + COC	0.67 oz + 0.25% v/v	B	Directed	0	0	0	0	0	58	53	53	16
8. Sandea + COC	1.0 oz + 0.25% v/v	B	Directed	0	0	0	0	0	58	58	58	19
9. Sandea + COC	1.3 oz + 0.25% v/v	B	Directed	0	0	0	0	0	45	45	45	8
10. MSMA + COC	2.4 pt + 0.25% v/v	AB	OTT/ Directed	33	36	21	18	10	26	23	15	3
11. Roundup WeatherMax + AMS	22.0 oz + 10 lbs	AB	OTT/ Directed	13	11	7	5	0	0	0	0	0
12. Envoke + COC	0.15 oz + 0.25% v/v	A	OTT/ Directed	23	15	8	5	0	0	0	0	0
13. Envoke + COC	0.15 oz + 0.25% v/v	B	Directed	0	0	0	0	0	23	16	8	0
14. Untreated	0.67 oz	A	OTT	0	0	0	0	0	0	0	0	0

*OTT=Over the top

Table 2.

June 19 Plant Mapping Data					
Treatment	Rate pr/A	Timing	Method	Height	Total nodes
1. Sandea	0.67 oz	A	OTT	24	16
2. Sandea	1.0 oz	A	OTT	22	15
3. Sandea	1.3 oz	A	OTT	17	18
4. Sandea + COC	0.67 oz + 0.25% v/v	B	Shielded	22	17
5. Sandea + COC	1.0 oz + 0.25% v/v	B	Shielded	20	16
6. Sandea + COC	1.3 oz + 0.25% v/v	B	Shielded	17	15
7. Sandea + COC	0.67 oz + 0.25% v/v	B	Directed	18	15
8. Sandea + COC	1.0 oz + 0.25% v/v	B	Directed	17	15
9. Sandea + COC	1.3 oz + 0.25% v/v	B	Directed	18	15
10. MSMA + COC	2.4 pt + 0.25% v/v	AB	OTT/Directed	21	16
11. Roundup WeatherMax + AMS	22.0 oz + 10 lbs	AB	OTT/Directed	24	17
12. Envoke + COC	0.15 oz + 0.25% v/v	A	OTT/Directed	24	17
13. Envoke + COC	0.15 oz + 0.25% v/v	B	Directed	19	17
14. Untreated	0.67 oz	A	OTT	23	16

*OTT=Over the top

Table 3.

Yield Data				
Treatment	Rate pr/A	Timing	Method	Lint Yield LBS/A
1. Sandea	0.67 oz	A	OTT	2125
2. Sandea	1.0 oz	A	OTT	2118
3. Sandea	1.3 oz	A	OTT	1822
4. Sandea + COC	0.67 oz + 0.25% v/v	B	Shielded	2078
5. Sandea + COC	1.0 oz + 0.25% v/v	B	Shielded	1618
6. Sandea + COC	1.3 oz + 0.25% v/v	B	Shielded	1497
7. Sandea + COC	0.67 oz + 0.25% v/v	B	Directed	398
8. Sandea + COC	1.0 oz + 0.25% v/v	B	Directed	698
9. Sandea + COC	1.3 oz + 0.25% v/v	B	Directed	994
10. MSMA + COC	2.4 pt + 0.25% v/v	AB	OTT/Directed	1708
11. Roundup WeatherMax + AMS	22.0 oz + 10 lbs	AB	OTT/Directed	2215
12. Envoke + COC	0.15 oz + 0.25% v/v	A	OTT/Directed	2142
13. Envoke + COC	0.15 oz + 0.25% v/v	B	Directed	1806
14. Untreated	0.67 oz	A	OTT	2158

*OTT=Over the top