COTTON WEED MANAGEMENT

Cotton Incorporated Project #05-653CA
RESEARCH PROGRESS REPORT 2009




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Support to conduct these studies was provided by:

HERBICIDES, FUNGICIDES & COMPOUNDS TESTED IN THESE STUDIES

Brand Name	Common Chemical Name/Formulation	Company
Agridex	*Crop Oil Concentrate*	Helena
AMS	*Ammonium sulfate*	United Suppliers Inc
Chateau	*Flumioxazin*	Valent
Direx	*Diuron*	DuPont
Envoke	*2-pyridinesulfonamide*	Syngenta
ET	*Pyraflufen ethyl*	Helena
Goal Tender	*Oxyfluorfen*	Dow Agro Sciences
Glyfos X-TRA	*Glyphosate*	Cheminova
Gramoxone Inteon	*Paraquat dichloride*	Syngenta
Ignite 280	*Glufosinate*	Bayer
Karmex	*Diuron*	DuPont
NAI-1500		
NNH-950-4		
Prep	*Ethephon*	Bayer
Roundup Weathermax	*Glyphosate*	Monsanto
Shark	*Carfentrazone-ethyl*	FMC Corporation
Staple	*Pyrithiobac sodium*	DuPont
UN32		
2, 4-D	*Dimethylamine salt*	Frontline

Cotton Weed Control Summary:

Pages 5-7
Weed Control in Fallowbed:

The objective of this study was to evaluate the effectiveness of various herbicides at controlling volunteer wheat (*Triticum sp.)*, field bindweed (*Convolvulus arvensis)*, shepherd's purse (*Capsella bursa-pastoris)*, chickweed (*Stellaria media*), and London Rocket (*Sisymbrium irio*). Treatments that gave excellent control of volunteer wheat at 21 days after treatment were Roundup Weathermax at 32 fl oz, Roundup Weathermax + Shark at 22 fl oz + 1 fl oz, Roundup Weathermax + ET at 22 fl oz + 1 fl oz, Roundup Weathermax + Chateau at 22 oz + 2 fl oz, Ignite at 29 fl oz, NNH-950-4 at 23 fl oz, NNH-950-4 at 33 fl oz, NNH-950-4 at 45 fl oz, Gramoxone Inteon at 32 fl oz, and Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz. Treatments that gave excellent control of field bindweed at 21 days after treatment were Roundup Weathermax + ET at 22 fl oz + 1 fl oz, Roundup Weathermax + Chateau at 22 fl oz + 2 oz, Ignite at 29 fl oz, and NNH-950-4 at 23 fl oz. All treatments gave excellent control of shepherd's purse and chickweed at 21 days after treatment. All treatments gave good to excellent control on London rocket.

Pages 8-10
Weed Control in Fallowground:

The objective of this study was to evaluate the effectiveness of herbicides at controlling ripgut brome (*Bromus diandrus*), redstem Filaree (*Erodium cicutarium*), fiddleneck *(Amsinckia menziesii)*, and black mustard *(Brassica cretica).* All treatments controlling ripgut brome that produced good to excellent control included Roundup Weathermax at 29 fl oz, Roundup Weathermax + Shark at 29 fl oz + 1 fl oz, Roundup Weathermax + ET at 29 fl oz + 1 fl oz, Roundup Weathermax + Chateau at 22 fl oz + 2 fl oz, Roundup Weathermax + 2,4-D at 22 fl oz + 16 fl oz, Ignite at 29 fl oz, NNH-950-4 at 23 fl oz, NNH-950-4 at 33 fl oz, NNH-950-4 at 45 fl oz, Gramoxone Inteon at 32 fl oz, and Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz. Fiddleneck control gave the best percent with almost all treatments producing complete control, with the exception of a few. Excellent to fair control was observed over black mustard weed control.

Pages 11-12
Crop Safety Study of Glytol + Liberty Link Cotton:

The objective of this study was to evaluate which herbicides would produce injury over cotton at different timings and if it made a difference when herbicides were applied. From the beginning or the trial to the last day recorded for observations of cotton injury, no cotton injury occurred. Treatments Ignite 280 at three timings at 29 fluid ounces per acre and Glyfos X-Tra at 32 fluid ounces at first and third timings with Ignite 280 at the second timings produced highest yields.

Pages 13-15
Crop Safety Study of in Wide-Strike Cotton:

The objective of this study was to evaluate the potential of using Ignite (*glufosinate-ammonium)* in Wide-Strike Cotton with four different cotton timings and three rates. Cotton injury was least noticeable after 28 days after treatment. The timing at 8 leaf stage averaged the highest lint yield 1831 and the last timing at 20 leaf stage averaged the lowest lint yield 1752.

Pages 16-18
Pressure Study in Roundup Ready Flex Cotton:

The objective of this study was to evaluate the effectiveness of various herbicides at controlling tall morningglory (*Ipomoea purpurea*), purple nutsedge (*Cyperus rotundus*), and Johnsongrass (*Sorghum halepense*) in Roundup Ready cotton. Roundup Weathermax + AMS at 32 floz + 10 #, Ignite at 29 floz, Shark + Agridex at 2 floz + 1% v/v, ET + Agridex at 1 floz + 1% v/v, Chateau + Agridex at 2 oz + 1% v/v, Karmex + Agridex at 2 # + 1% v/v, Roundup Weathermax + AMS at 32 floz + 10 #, Ignite at 29 floz, Shark + Agridex at 2 floz + 1% v/v, ET + Agridex at 1 floz + 1% v/v, Chateau + Agridex at 2 oz + 1% v/v, and Karmex + Agridex at 2 # + 1% v/v produced excellent control. 30 days after treatment, treatments gave less control and produced poor to extremely poor control over nutsedge. All treatments concerning johnsongrass gave adequate to poor control 30 days after treatment, while some produced zero percent cotton injury. Roundup Weathermax + AMS at 32 floz + 10 #, Ignite at 29 floz, Roundup Weathermax + AMS at 32 floz + 10 #, and Ignite at 29 floz were the treatments that produced zero percent cotton injury, while ET + Agridex at 1 floz + 1% v/v, Karmex + Agridex at 2 # + 1% v/v, Shark + Agridex at 2 floz + 1% v/v, ET + Agridex at 1 floz + 1% v/v, and Karmex + Agridex at 2 # + 1% v/v produced exceptionally low percent cotton injury.

Pages 19-20
Spray Gallonage Comparison in Liberty Link Cotton:

The objective of this study was to evaluate the effectiveness of various gallonages of herbicides at controlling tall morningglory (*Ipomoea purpurea*), purple nutsedge (*Cyperus rotundus*), black nightshade (*Solanum nigrum)*, and Johnsongrass (*Sorghum halepense*). Treatments that gave good to excellent control of tall morningglory at 14 days after treatment were Ignite at 29 fl oz 5 gpa, Ignite at 29 fl oz 10 gpa, Ignite at 29 fl oz 15 gpa, and Ignite at 29 fl oz 20 gpa. One treatment gave good control of Johnsongrass which was Ignite at 29 fl oz 15 gpa. At 14 days after treatment, none of the treatments produced control of purple nutsedge. All of the treatments produced good control of black nightshade at 14 days after treatment, Ignite at 29 fl oz 5 gpa, Ignite at 29 fl oz 10 gpa, Ignite at 29 fl oz 15 gpa, and Ignite at 29 fl oz 20 gpa. And none of the treatments produced any cotton injury.

Pages 21-22
Spray Gallonage Comparison in Roundup Ready Flex Cotton:

The objective of this study was to evaluate the effectiveness of various spray gallonages of Roundup at controlling tall morningglory (*Ipomoea purpurea*) and purple nutsedge (*Cyperus rotundus*). All treatments did not give complete to excellent control over tall morningglory and nutsedge. One treatment gave good control 14 days after treatment, Roundup Weathermax 32 fl oz + AMS 10 lbs at 5 gpa. There was not much difference between the 10 to 20 gpa rates with annual morningglory. All treatments for nutsedge gave extremely poor control 14 days after treatment. Roundup Weathermax 32 fl oz + AMS 10 lbs at 15 gpa improved slightly, while Roundup Weathermax 32 fl oz + AMS 10 lbs at 5 gpa, Roundup Weathermax 32 fl oz + AMS 10 lbs at 10 gpa, and Roundup Weathermax 32 fl oz + AMS 10 lbs at 20 gpa were closer to no control than anything.

Pages 23
Tall Morningglory Control in Liberty Link Cotton:

The objective of this study was to evaluate the effectiveness at controlling tall morningglory in Liberty Link cotton using different rates of Glufosinate (*Ignite 280*) with multiple applications. The tall morningglory was in its 2 to 3 leaf stage at the beginning of the study. The two treatments that were compared were Glufosinate at 29 oz with three applications and Glufosinate at one application of 43 oz and a second application at 29 oz. Both treatments produced similar results. 19 days after treatment following the second application, complete control of tall morningglory was observed.

Pages 24

Tall Morningglory Control in Roundup Ready Flex Cotton:

The objective of this study was to evaluate the effectiveness at controlling tall morningglory in Roundup Ready Flex cotton using different rates of Glyphosate (*Roundup*) with multiple applications. The tall morningglory was in its 2 to 3 leaf stage at the beginning of the study. The two treatments that were compared were Glyphosate at 22 oz with three applications and Glyphosate at 32 oz with three applications. Both treatments produced similar results. 19 days after treatment following the second application, excellent control of tall morningglory was observed. Glyphosate at 32 oz generated the best result.

Pages 25-27

Layby Study in Roundup Ready Cotton:

The objective of this study was to evaluate the effectiveness of various herbicides at controlling annual morningglory, nutsedge, and Johnsongrass. There were only four treatments that were recorded to have nutsedge present, which were NAI + Roundup Weathermax + Agridex at 59.4 floz + 32 + .5% v/v, Shark + Agridex at 2 oz + .5%, Envoke + Agridex at .15 oz + .5% v/v, and Envoke + Roundup Weathermax + Agridex at .15 oz + 32 oz + .5% v/v. These treatments after 30 days, showed extremely poor control over nutsedge. Only nine treatments had Johnsongrass emerging within the plots, which included ET + Roundup Weathermax + Agridex at 1 oz + 32 oz + .5% v/v, ET + Direx + Roundup Weathermax + Agridex at .75 oz + 17 oz + 32 oz + .5%, NAI + Roundup Weathermax + Agridex at 32 floz + 32 + .5% v/v, Shark + Roundup Weathermax + Agridex 2 oz + 32 0z + .5%, Chateau + Roundup Weathermax + Agridex at 2 oz + 32 oz + .5% v/v, Envoke + Agridex at .15 oz + .5% v/v, Envoke + Roundup Weathermax + Agridex at .15 oz + 32 oz + .5% v/v, Roundup Weathermax + AMS at 32 floz + 10 #, and Prep + Roundup Weathermax + Agridex at 8 oz + 32 oz + .5%. All of the treatments, 30 days after treatment, produced poor control over Johnsongrass. There was cotton injury present throughout the trial, except for in Roundup Weathermax + AMS at 32 floz + 10 # and Ignite at 43 oz. All other treatments 30 days after treatment had little to some injury.

Pages 28-29

UN32 Tankmix Layby Weed Control in Cotton:

The objective of this study was to evaluate the effectiveness of various herbicides at controlling annual morningglory, nutsedge, and Johnsongrass in cotton. All treatments that produced excellent control over annual morningglory 36 days after treatment were Roundup Weathermax + UN32 at 32 oz + 5 gallons, Ignite + UN32 at 43 oz + 5 gallons, Shark + UN32 at 2 oz + 5 gallons, ET + UN32 at 1 oz + 5 gallons, and Chateau + UN32 at 2 oz + 5 gallons. All treatments in control over nutsedge produced poor control 36 days after treatment. Roundup Weathermax + UN32 at 32 oz + 5 gallons, Ignite + UN32 at 43 oz + 5 gallons, and Shark + UN32 at 2 oz + 5 gallons gave fair control over Johnsongrass 36 days after treatment. All treatments had cotton injury 7 and 15 days after treatment. Only one treatment, Roundup Weathermax + UN32 at 32 oz + 5 gallons, produced no cotton injury 36 days after treatment.

Weed Control in Cotton Fallow Bed

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Steve Wright, Lalo Banuelos, Matt Mills, Craig Yancy, Tony Garcia, Sara Avila

This study was conducted at the West Side Research and Extension Center in Five Points. The treatments were applied on February 27, 2009. The temperature at application was 64°F and the wind speed varied from 0 to 3 mph. All plots were 10 feet by 25 feet, with 4 replications. The treatments were applied using a CO_2 backpack sprayer at 30 psi, 17 gpa, 3 mph, and a mix size of 3 L. The sprayer had 8002 flat fan nozzles. The weeds present at the time of application were volunteer wheat, field bindweed (*Convolvulus arvensis*), shepherd's purse (*Capsella bursa-pastoris)*, and chickweed (*Stellaria media*).

The objective of this study was to evaluate the effectiveness of various herbicides at controlling volunteer wheat, field bindweed, shepherd's purse, and chickweed. Treatments that gave excellent control of volunteer wheat at 21 days after treatment were (1) Roundup Weathermax at 32 fl oz, (2) Roundup Weathermax + Shark at 22 fl oz + 1 fl oz, (3) Roundup Weathermax + ET at 22 fl oz + 1 fl oz, (4) Roundup Weathermax + Chateau at 22 oz + 2 fl oz, (6) Ignite at 29 fl oz, (9) NNH-950-4 at 23 fl oz, (10) NNH-950-4 at 33 fl oz, (11) NNH-950-4 at 45 fl oz, (12) Gramoxone Inteon at 32 fl oz, and (13) Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz (Table 1).

Treatments that gave excellent control of field bindweed at 21 days after treatment were (3) Roundup Weathermax + ET at 22 fl oz + 1 fl oz, (4) Roundup Weathermax + Chateau at 22 fl oz + 2 oz, (6) Ignite at 29 fl oz, and (10) NNH-950-4 at 23 fl oz (Table 2).

All treatments gave excellent control of shepherd's purse (Table 3) and chickweed (Table 4) at 21 days after treatment. All treatments gave good to excellent control on London rocket (Table 5).

Table 1.

Volunteer Wheat (*Triticum sp.)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**21 DAT**
1. Roundup Weathermax	32 fl oz	41	94	100
2. Roundup Weathermax + Shark	22 fl oz + 1 fl oz	44	98	100
3. Roundup Weathermax + ET	22 fl oz + 1 fl oz	46	96	100
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	59	94	100
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	31	93	77
6. Ignite	29 fl oz	26	85	93
7. NAI-1500	4 fl oz	2	3	2
8. NAI-1500	6 fl oz	2	3	2
9. NNH-950-4	23 fl oz	31	95	100
10. NNH-950-4	33 fl oz	44	97	100
11. NNH-950-4	45 fl oz	50	98	100
12. Gramoxone Inteon	32 fl oz	97	98	100
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	68	97	100
14. Untreated	---	0	0	0

Table 2.

Field Bindweed (*Convolvulus arvensis)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**21 DAT**
1. Roundup Weathermax	32 fl oz	20	45	48
2. Roundup Weathermax + Shark	22 fl oz + 1 fl oz	100	100	50
3. Roundup Weathermax + ET	22 fl oz + 1 fl oz	98	100	100
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	100	100	100
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	23	43	60
6. Ignite	29 fl oz	40	85	93
7. NAI-1500	4 fl oz	100	100	78
8. NAI-1500	6 fl oz	100	100	72
9. NNH-950-4	23 fl oz	100	100	-
10. NNH-950-4	33 fl oz	90	92	93
11. NNH-950-4	45 fl oz	100	100	-
12. Gramoxone Inteon	32 fl oz	79	79	78
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	100	100	-
14. Untreated	---	0	0	0

Table 3.

Shepherd's Purse (*Capsella bursa-pastoris)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**21 DAT**
1. Roundup Weathermax	32 fl oz	44	95	100
2. Roundup Weathermax + Shark	22 fl oz + 1 fl oz	78	100	100
3. Roundup Weathermax + ET	22 fl oz + 1 fl oz	65	98	100
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	80	99	100
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	31	88	100
6. Ignite	29 fl oz	65	93	100
7. NAI-1500	4 fl oz	86	90	96
8. NAI-1500	6 fl oz	89	91	98
9. NNH-950-4	23 fl oz	74	96	100
10. NNH-950-4	33 fl oz	79	96	100
11. NNH-950-4	45 fl oz	80	96	100
12. Gramoxone Inteon	32 fl oz	100	100	100
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	53	95	100
14. Untreated	---	0	0	0

Table 4.

Chickweed (*Stellaria media*) Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**21 DAT**
1. Roundup Weathermax	32 fl oz	20	93	100
2. Roundup Weathermax + Shark	22 fl oz + 1 fl oz	38	96	100
3. Roundup Weathermax + ET	22 fl oz + 1 fl oz	63	98	100
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	88	100	100
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	26	85	100
6. Ignite	29 fl oz	44	100	100
7. NAI-1500	4 fl oz	94	99	96
8. NAI-1500	6 fl oz	84	100	99
9. NNH-950-4	23 fl oz	91	98	100
10. NNH-950-4	33 fl oz	89	99	100
11. NNH-950-4	45 fl oz	88	98	100
12. Gramoxone Inteon	32 fl oz	100	100	93
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	18	95	100
14. Untreated	---	0	0	0

Table 5.

London Rocket (*Sisymbrium irio*) Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**21 DAT**
1. Roundup Weathermax	32 fl oz	50	100	100
2. Roundup Weathermax + Shark	22 fl oz + 1 fl oz	83	100	100
3. Roundup Weathermax + ET	22 fl oz + 1 fl oz	-	-	-
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	-	-	-
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	40	100	100
6. Ignite	29 fl oz	70	98	100
7. NAI-1500	4 fl oz	83	83	85
8. NAI-1500	6 fl oz	-	-	-
9. NNH-950-4	23 fl oz	75	93	98
10. NNH-950-4	33 fl oz	83	93	100
11. NNH-950-4	45 fl oz	80	95	100
12. Gramoxone Inteon	32 fl oz	-	-	-
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	-	-	-
14. Untreated	---	-	-	0

Weed Control in Fallowground

UCCE - Tulare/Kings - Visalia- 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was established in Visalia on February 19, 2009. The temperature at the time of application was 70°F and the wind speeds varied from 0 to 3 mph. Treatments were applied with a CO2 backpack with 8002 flat fan nozzles at a speed of 3.5 mph. The spray pressure was 40 PSI with a volume of 15 GPA. Also at the time of application, the weeds population varied from light to very heavy. The weeds present were fiddleneck *(Amsinckia menziesii)*, black mustard *(Brassica cretica)*, Filaree *(Erodium cicutarium)*, chickweed *(Cerastium fontanum)*, and ripgut brome *(Bromus diandrus)*.

The objective of this study was to evaluate the effectiveness of herbicides at controlling ripgut brome *(Bromus diandrus)*, redstem Filaree *(Erodium cicutarium)*, fiddleneck *(Amsinckia menziesii)*, and black mustard *(Brassica cretica)*.Treatment (14) was the untreated treatment, which it gave zero percent control for weeds observed in the trial. All treatments controlling ripgut brome that produced good to excellent control included (1) Roundup Weathermax at 29 fl oz, (2) Roundup Weathermax + Shark at 29 fl oz + 1 fl oz, (3) Roundup Weathermax + ET at 29 fl oz + 1 fl oz, (4) Roundup Weathermax + Chateau at 22 fl oz + 2 fl oz, (5) Roundup Weathermax + 2,4-D at 22 fl oz + 16 fl oz, (6) Ignite at 29 fl oz, (9) NNH-950-4 at 23 fl oz, (10) NNH-950-4 at 33 fl oz, (11) NNH-950-4 at 45 fl oz, (12) Gramoxone Inteon at 32 fl oz, and (13) Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz (Table 1).

Treatments that gave good to excellent control over redstem Filaree were treatments (1) Roundup Weathermax at 29 fl oz, (2) Roundup Weathermax + Shark at 29 fl oz + 1 fl oz, (3) Roundup Weathermax + ET at 29 fl oz + 1 fl oz, (4) Roundup Weathermax + Chateau at 22 fl oz + 2 fl oz, (6) Ignite at 29 fl oz, (9) NNH-950-4 at 23 fl oz, (10) NNH-950-4 at 33 fl oz, (11) NNH-950-4 at 45 fl oz, and (13) Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz (Table 2). All other treatments concerning control over redstem Filaree produced fair control.

Fiddleneck control gave the best percent with almost all treatments producing complete control, with the exception of a few. Treatments (1) Roundup Weathermax at 29 fl oz, (2) Roundup Weathermax + Shark at 29 fl oz + 1 fl oz, (3) Roundup Weathermax + ET at 29 fl oz + 1 fl oz, (5) Roundup Weathermax + 2,4-D at 22 fl oz + 16 fl oz, (6) Ignite at 29 fl oz, (9) NNH-950-4 at 23 fl oz, (10) NNH-950-4 at 33 fl oz, (11) NNH-950-4 at 45 fl oz, and (13) Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz gave complete control along with treatments (4) Roundup Weathermax + Chateau at 22 fl oz + 2 fl oz and (12) Gramoxone Inteon at 32 fl oz giving good control over fiddleneck (Table 3).

Table 4 describes the control over black mustard with various herbicides at different rates. In conclusion, treatments (1) Roundup Weathermax at 29 fl oz, (2) Roundup Weathermax + Shark at 29 fl oz + 1 fl oz, (3) Roundup Weathermax + ET at 29 fl oz + 1 fl oz, (4) Roundup Weathermax + Chateau at 22 fl oz + 2 fl oz, (8) NAI-1500 at 6 fl oz, (9) NNH-950-4 at 23 fl oz, (10) NNH-950-4 at 33 fl oz, (11) NNH-950-4 at 45 fl oz, and (13) Roundup Weathermax + Goal Tender at 22 fl oz + 8 fl oz produced good to excellent control over black mustard (Table 4). The other remaining treatments gave fair control over black mustard.

Table 1.

Ripgut Brome *(Bromus diandrus)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**22 DAT**
1. Roundup Weathermax	29 fl oz	5	75	94
2. Roundup Weathermax + Shark	29 fl oz + 1 fl oz	5	77	90
3. Roundup Weathermax + ET	29 fl oz + 1 fl oz	7	77	98
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	17	83	92
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	7	73	88
6. Ignite	29 fl oz	43	80	85
7. NAI-1500	4 fl oz	2	1	1
8. NAI-1500	6 fl oz	2	1	0
9. NNH-950-4	23 fl oz	4	75	88
10. NNH-950-4	33 fl oz	7	75	92
11. NNH-950-4	45 fl oz	8	73	96
12. Gramoxone Inteon	32 fl oz	95	85	82
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	5	80	99
14. Untreated	---	0	0	0

Table 2.

Redstem Filaree *(Erodium cicutarium)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**22 DAT**
1. Roundup Weathermax	29 fl oz	25	40	90
2. Roundup Weathermax + Shark	29 fl oz + 1 fl oz	63	58	92
3. Roundup Weathermax + ET	29 fl oz + 1 fl oz	45	80	85
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	33	65	88
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	73	70	78
6. Ignite	29 fl oz	75	80	80
7. NAI-1500	4 fl oz	40	55	60
8. NAI-1500	6 fl oz	50	70	60
9. NNH-950-4	23 fl oz	40	58	78
10. NNH-950-4	33 fl oz	68	70	85
11. NNH-950-4	45 fl oz	43	53	89
12. Gramoxone Inteon	32 fl oz	70	60	60
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	50	70	93
14. Untreated	---	0	0	0

Table 3.

Fiddleneck *(Amsinckia menziesii)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**22 DAT**
1. Roundup Weathermax	29 fl oz	57	98	100
2. Roundup Weathermax + Shark	29 fl oz + 1 fl oz	75	99	100
3. Roundup Weathermax + ET	29 fl oz + 1 fl oz	80	100	100
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	85	95	95
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	70	97	100
6. Ignite	29 fl oz	78	98	100
7. NAI-1500	4 fl oz	68	55	43
8. NAI-1500	6 fl oz	73	60	47
9. NNH-950-4	23 fl oz	77	99	100
10. NNH-950-4	33 fl oz	80	99	100
11. NNH-950-4	45 fl oz	75	96	100
12. Gramoxone Inteon	32 fl oz	88	93	87
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	87	99	100
14. Untreated	---	0	0	0

Table 4.

Black Mustard *(Brassica cretica)* Percent Control				
Treatments	**Rate/A**	**7 DAT**	**14 DAT**	**22 DAT**
1. Roundup Weathermax	29 fl oz	43	75	96
2. Roundup Weathermax + Shark	29 fl oz + 1 fl oz	48	82	94
3. Roundup Weathermax + ET	29 fl oz + 1 fl oz	47	80	93
4. Roundup Weathermax + Chateau	22 fl oz + 2 oz	45	88	96
5. Roundup Weathermax + 2,4-D	22 fl oz + 16 fl oz	63	87	92
6. Ignite	29 fl oz	65	68	73
7. NAI-1500	4 fl oz	52	70	72
8. NAI-1500	6 fl oz	63	73	83
9. NNH-950-4	23 fl oz	50	75	90
10. NNH-950-4	33 fl oz	53	83	91
11. NNH-950-4	45 fl oz	48	92	95
12. Gramoxone Inteon	32 fl oz	67	70	63
13. Roundup Weathermax + Goal Tender	22 fl oz + 8 fl oz	48	82	98
14. Untreated	---	0	0	0

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This study was established in Five Points near Coalinga at the WSREC on May 8, 2009. On the day of May 8, 2009 the cotton was planted by an International 185 4-row planter with a soil temperature of 65°F. The first application was applied on May 28, 2009. The temperature at the time of application was 87°F and the wind speeds varied from 2 to 4 mph. Treatments were applied with a red tractor with 8002 flat fan nozzles at a speed of 4 mph. The spray pressure was 40 psi with a volume of 15 GPA. Also at the time of application, the cotton was in a stage of its true two leaf with heights varied around two to four inches tall. Throughout all the applications, first, second, and third, the middle two rows were the only ones sprayed by the herbicide. The second application was applied on June 2, 2009. The temperature at the time of application was 78°F and the wind speeds varied from 4 to 6 mph. Treatments were applied with a Hagie High Cycle with 8002 flat fan nozzles at a speed of 4 mph. The spray pressure was 40 psi with a volume of 15 GPA. At the time of application, the cotton was in a stage of five to six leaves. The third application was applied on June 30, 2009. The temperature at the time of application was 83°F and the wind speeds varied from 2 to 3 mph. Treatments were applied with a Hagie High Cycle with 8002 flat fan nozzles at speeds of 0 to 4 mph. The spray pressure was 40 psi with a volume of 15 GPA. And, at the time of application, the cotton had average heights of twenty six inches tall.

The objective of this study was to evaluate which herbicides would produce injury over cotton at different timings and if it made a difference when herbicides were applied. From the beginning or the trial to the last day recorded for observations of cotton injury, no cotton injury occurred (Table 1). After harvest, treatments (3) Ignite 280 at three timings at 29 fluid ounces per acre and (5) Glyfos X-Tra at 32 fluid ounces at first and third timings with Ignite 280 at the second timings showed productions of highest yields (Table 2). Treatment (3) Ignite 280 at three consecutive timings at 29 fluid ounces per acre had 1680 pounds per acre and treatment (5) Glyfos X-Tra at 32 fluid ounces at first and third timings with Ignite 280 at the second timing had 1612 pounds per acre in lint yield. All other treatments produced lower yields in the 1500 pound range.

Table 1.

Percent Cotton (*Gossypium spp.*) Injury												
Treatments	**Timing**	**G ai/ha**	**Prod./A**	**5/22**	**6/3**	**6/9**	**6/18**	**6/27**	**7/3**	**7/14**	**10/1**	**10/8**
1. UTC – Untreated Weed Free	---	---	---	0	0	0	0	0	0	0	0	0
2. Glyfos X-TRA	ABC	1121	32 fl oz	0	0	0	0	0	0	0	0	0
3. Ignite 280	ABC	600	29 fl oz	0	0	0	0	0	0	0	0	0
4. Ignite 280	AC	600	29 fl oz	0	0	0	0	0	0	0	0	0
4. Glyfos X-TRA	B	1121	32 fl oz	0	0	0	0	0	0	0	0	0
5. Glyfos X-TRA	AC	1121	32 fl oz	0	0	0	0	0	0	0	0	0
5. Ignite 280	B	600	29 fl oz	0	0	0	0	0	0	0	0	0
6. Ignite 280	AC	1200	58 fl oz	0	0	0	0	0	0	0	0	0
6. Glyfos X-TRA	B	2242	64 fl oz	0	0	0	0	0	0	0	0	0
7. Glyfos X-TRA + Ignite 280	ABC	1121 + 600	32 floz + 29 floz	0	0	0	0	0	0	0	0	0
8. Glyfos X-TRA + Ignite 280	ABC	2242 + 1200	58 fl oz + 64 floz	0	0	0	0	0	0	0	0	0

Table 2.

Lint Yield						
Treatments	**Timing**	**G ai/ H**	**Rate/ A**	**Lint %**	**Gin T.O. %**	**Lint Yield Lbs/A**
1. UTC – Weed Free	---	---	---	35.5	30.2	1546
2. Glyfos X-Tra	ABC	1121	32 floz	36.4	31.8	1505
3. Ignite 280	ABC	600	29 floz	36.4	31.4	1680
4. Ignite 280 4. Glyfos X-Tra	AC B	600 1121	29floz 32floz	36.2	31.2	1592
5. Glyfos X-Tra 5. Ignite 280	AC B	1121 600	32 floz 29floz	36.6	31.7	1612
6. Ignite 280 6. Glyfos X-Tra	AC B	1200 2242	58floz 64floz	36.2	32.4	1597
7. Glyfos X-Tra + Ignite 280	ABC	1121 + 600	32floz + 29 floz	37.0	32.2	1561
8. Glyfos X-Tra + Ignite 280	ABC	2242 + 1200	58 floz + 64 floz	36.0	31.3	1509
			LSD	**NS**	**NS**	**NS**
			% CV	**1.95**	**5.25**	**6.53**

Crop Safety Study in Wide-Strike Cotton

UCCE - Tulare/Kings Co. – WSREC - 2009
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The objective of this study was to evaluate the potential of using Ignite (*glufosinate-ammonium)* in Wide-Strike Cotton with four different cotton timings and three rates. This study was conducted at the Westside Research and Extension Field Station, near Five Points, California on PHY 755 RF cotton. This study had four application timings throughout the season. The sprayer used was a High Clearance Tractor with an 8002 flat fan nozzle at a speed of 4 mph. The spray pressure was 40 psi with a volume of 17 gpa. The plot size was 4-40 inch rows by 65 feet with 4 replications. The first application went out at the cotyledons stage over the top on April 28th. The temperature was 67°F and wind speed of 1 to 4 mph. The second application went at the two true leaf over the top on May 12th. The temperature was 81°F and the wind speed was 4 to 7 mph. The third application went out at the 7 to 8 node stage as a directed spray on June 2nd. The temperature was 80°F and the wind speed was 1 to 4 mph. The fourth application went out at the late lay-by stage (20 to 22 nodes) as a directed spray on June 30th. The temperature was 83°F and the wind speed was 0 to 4 mph.

Table1.

April 28th Application Over the Top								
Cotton (*Gossypium spp.*) Injury								
			7-May	**12-May**	**19-May**	**27-May**	**2-Jun**	**17-Jun**
Treatments	**Rate/A**	**Stage**	**7 DAT**	**14 DAT**	**21 DAT**	**28 DAT**	**35 DAT**	**50 DAT**
1. Staple + COC	1 oz + 1% v/v	Cot.	4	3	0	0	0	0
2. Roundup Weathermax	32 oz	Cot.	0	0	0	0	0	0
3. Ignite 280	29 oz	Cot.	7	6	2	0	0	0
4. Ignite 280	43 oz	Cot.	24	16	10	5	1	0
5. Ignite 280	86 oz	Cot.	58	54	21	10	3	0
18. UTC			0	0	0	0	0	0

Table 2.

May 12th Application Over the Top								
Cotton (*Gossypium spp.*) Injury								
			19-May	**27-May**	**2-Jun**	**17-Jun**	**22-Jun**	**30-Jun**
Treatments	**Rate/A**	**Stage**	**7 DAT**	**14 DAT**	**21 DAT**	**36 DAT**	**40 DAT**	**48 DAT**
6. Roundup Weathermax	32 oz	2LF	0	0	0	0	0	0
7. Ignite 280	29 oz	2LF	21	15	5	0	0	0
8. Ignite 280	43 oz	2LF	45	35	21	1	1	0
9. Ignite 280	86 oz	2LF	58	48	36	4	2	0
18. UTC			0	0	0	0	0	0

Table 3.

June 2th Application Directed Spray with Drops										
Cotton (*Gossypium spp.*) Injury										
			17-Jun	**22-Jun**	**30-Jun**	**8-Jul**	**14-Jul**	**21-Jul**	**27-Jul**	**11-Aug**
Treatments	**Rate/A**	**Stage**	**15 DAT**	**20 DAT**	**28 DAT**	**44 DAT**	**50 DAT**	**57 DAT**	**62 DAT**	**77 DAT**
10. Roundup Weathermax	32 oz	8LF	0	0	0	0	0	0	0	0
11. Ignite 280	29 oz	8LF	18	10	3	1	0	0	0	0
12. Ignite 280	43 oz	8LF	23	16	8	4	2	1	0	0
13. Ignite 280	86 oz	8LF	38	24	16	9	6	1	4	0
18. UTC			0	0	0	0	0	0	0	0

Table 4.

June 30th Application Directed Spray with Drops							
Cotton (*Gossypium spp.*) Injury							
			8-Jul	**14-Jul**	**21-Jul**	**27-Jul**	**11-Aug**
Treatments	**Rate/A**	**Stage**	**16 DAT**	**22 DAT**	**29 DAT**	**34 DAT**	**49 DAT**
14. Roundup Weathermax	32 oz	24-26"	0	0	0	0	0
15. Ignite 280	29 oz	24-26"	2	1	1	1	0
16. Ignite 280	43 oz	24-26"	8	5	1	5	0
17. Ignite 280	86 oz	24-26"	16	13	2	11	0
18. UTC			0	0	0	0	0

Table 5.

Lint Yield						
Treatments	**Rate/A**	**Stage**	**Seed Cotton Lbs/ A**	**Lint %**	**Gin T.O. %**	**Lint Yield Lbs/A**
1. Staple + COC	1 oz + 1% v/v	Cot.	5470	35.7	32.7	1790
2. Roundup Weathermax	32 oz	Cot.	5466	36	32.7	1787
3. Ignite 280	29 oz	Cot.	5458	35.8	32.6	1778
4. Ignite 280	43 oz	Cot.	5448	36.1	33.1	1804
5. Ignite 280	86 oz	Cot.	5144	35.5	32.3	1661
6. Roundup Weathermax	32 oz	2LF	5878	36.1	32.8	1861
7. Ignite 280	29 oz	2LF	5298	36.3	33.4	1766
8. Ignite 280	43 oz	2LF	5400	35.8	32.8	1769
9. Ignite 280	86 oz	2LF	5375	35.9	33.1	1778
10. Roundup Weathermax	32 oz	8LF	5653	35.9	32.8	1856
11. Ignite 280	29 oz	8LF	5708	35.9	32.4	1849
12. Ignite 280	43 oz	8LF	5434	35.9	32.9	1787
13. Ignite 280	86 oz	8LF	5585	35.9	32.8	1833
14. Roundup Weathermax	32 oz	24-26"	5280	35.9	32.8	1731
15. Ignite 280	29 oz	24-26"	5265	36	33	1735
16. Ignite 280	43 oz	24-26"	5376	36	33	1777
17. Ignite 280	86 oz	24-26"	5440	35.7	32.5	1766
18. UTC			5218	36.7	33.6	1747
		LSD	**NS**	**NS**	**NS**	**NS**
		% CV	**3.14**	**0.47**	**0.87**	**2.35**

Pressure Study in Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. – Tulare - 2009
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This study was established in Tulare on July 13, 2009. The temperature at the time of application was 86°F and the wind speeds varied from 2 to 4 mph. Treatments were applied with a CO2 backpack with 8002 flat fan nozzles with drops at 2 per row at a speed of 3.5 mph. The spray pressures were 30 psi and 60 psi with a volume of 15 GPA. Also at the time of application, the cotton was in a stage of 18 to 22 inches in height, while the morningglory was in its 2 leaf to twining stage. The weeds present were annual morningglory (*Ipomoea purpurea*), nutsedge (*Cyperus esculentus*), and Johnsongrass (*Sorghum halepense)*.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling annual morningglory, nutsedge, and Johnsongrass in Roundup Ready cotton. After taking ratings on the cotton, and 30 days after treatment, all showed complete control over annual morningglory. Treatments (1) Roundup Weathermax + AMS at 32 floz + 10 #, (2) Ignite at 29 floz, (3) Shark + Agridex at 2 floz + 1% v/v, (4) ET + Agridex at 1 floz + 1% v/v, (5) Chateau + Agridex at 2 oz + 1% v/v, (6) Karmex + Agridex at 2 # + 1% v/v, (7) Roundup Weathermax + AMS at 32 floz + 10 #, (8) Ignite at 29 floz, (9) Shark + Agridex at 2 floz + 1% v/v, (10) ET + Agridex at 1 floz + 1% v/v, (11) Chateau + Agridex at 2 oz + 1% v/v, and (12) Karmex + Agridex at 2 # + 1% v/v produced excellent control in every plot (Table 1).

Treatments 30 days after treatment, experienced less control over nutsedge compared to 9 days after treatment. There were four trials without any life of nutsedge, in which the data did not pertain to, treatments (2) Ignite at 29 floz, (5) Chateau + Agridex at 2 oz + 1% v/v, (7) Roundup Weathermax + AMS at 32 floz + 10 #, and (10) ET + Agridex at 1 floz + 1% v/v (Table 2). All other treatments produced poor to extremely poor control over nutsedge.

All treatments concerning johnsongrass gave adequate to poor control 30 days after treatment (Table 3). All treatments decreased in control compared to 9 days after treatment, making it not very effective.

Some treatments, 30 days after treatment, produced zero percent cotton injury (Table 4). Treatments (1) Roundup Weathermax + AMS at 32 floz + 10 #, (2) Ignite at 29 floz, (7) Roundup Weathermax + AMS at 32 floz + 10 #, and (8) Ignite at 29 floz were the treatments that produced zero percent cotton injury, while treatments (4) ET + Agridex at 1 floz + 1% v/v, (6) Karmex + Agridex at 2 # + 1% v/v, (9) Shark + Agridex at 2 floz + 1% v/v, (10) ET + Agridex at 1 floz + 1% v/v, and (12) Karmex + Agridex at 2 # + 1% v/v produced exceptionally low percent cotton injury.

Table 1.

Annual Morningglory (*Ipomoea purpurea*) Percent Control				
Treatments	**Rate/A**	**Pressure**	**9 DAT**	**30 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 #	30 psi	98	100
2. Ignite	29 floz	30 psi	100	100
3. Shark + Agridex	2 floz + 1% v/v	30 psi	100	100
4. ET + Agridex	1 floz + 1% v/v	30 psi	100	100
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	100	100
6. Karmex + Agridex	2 # + 1% v/v	30 psi	100	100
7. Roundup Weathermax + AMS	32 floz + 10 #	60 psi	97	100
8. Ignite	29 floz	60 psi	100	100
9. Shark + Agridex	2 floz + 1% v/v	60 psi	100	100
10. ET + Agridex	1 floz + 1% v/v	60 psi	100	100
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	100	100
12. Karmex + Agridex	2 # + 1% v/v	60 psi	100	100

Table 2.

Purple Nutsedge (*Cyperus esculentus*) Percent Control				
Treatments	**Rate/A**	**Pressure**	**9 DAT**	**30 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 #	30 psi	40	25
2. Ignite	29 floz	30 psi	-	-
3. Shark + Agridex	2 floz + 1% v/v	30 psi	35	20
4. ET + Agridex	1 floz + 1% v/v	30 psi	35	20
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	-	-
6. Karmex + Agridex	2 # + 1% v/v	30 psi	43	23
7. Roundup Weathermax + AMS	32 floz + 10 #	60 psi	-	-
8. Ignite	29 floz	60 psi	60	35
9. Shark + Agridex	2 floz + 1% v/v	60 psi	45	28
10. ET + Agridex	1 floz + 1% v/v	60 psi	-	-
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	50	25
12. Karmex + Agridex	2 # + 1% v/v	60 psi	20	10

Table 3.

Johnsongrass (*Sorghum halepense)* Percent Control				
Treatments	**Rate/A**	**Pressure**	**9 DAT**	**30 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 #	30 psi	62	47
2. Ignite	29 floz	30 psi	68	50
3. Shark + Agridex	2 floz + 1% v/v	30 psi	53	37
4. ET + Agridex	1 floz + 1% v/v	30 psi	52	37
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	57	37
6. Karmex + Agridex	2 # + 1% v/v	30 psi	40	25
7. Roundup Weathermax + AMS	32 floz + 10 #	60 psi	63	48
8. Ignite	29 floz	60 psi	63	47
9. Shark + Agridex	2 floz + 1% v/v	60 psi	50	38
10. ET + Agridex	1 floz + 1% v/v	60 psi	50	35
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	48	30
12. Karmex + Agridex	2 # + 1% v/v	60 psi	48	38

Table 4.

Percent Cotton (*Gossypium spp.*) Injury				
Treatments	**Rate/A**	**Pressure**	**9 DAT**	**30 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 #	30 psi	0	0
2. Ignite	29 floz	30 psi	2	0
3. Shark + Agridex	2 floz + 1% v/v	30 psi	27	12
4. ET + Agridex	1 floz + 1% v/v	30 psi	18	5
5. Chateau + Agridex	2 oz + 1% v/v	30 psi	27	12
6. Karmex + Agridex	2 # + 1% v/v	30 psi	12	5
7. Roundup Weathermax + AMS	32 floz + 10 #	60 psi	0	0
8. Ignite	29 floz	60 psi	1	0
9. Shark + Agridex	2 floz + 1% v/v	60 psi	25	7
10. ET + Agridex	1 floz + 1% v/v	60 psi	20	5
11. Chateau + Agridex	2 oz + 1% v/v	60 psi	28	15
12. Karmex + Agridex	2 # + 1% v/v	60 psi	12	7

Spray Gallonage Comparison in Liberty Link Cotton

UCCE - Tulare/Kings Co. – Tulare - 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was established near Tulare on May 21, 2009. The temperature at application was 79°F and the wind speeds varied from 0 to 3 mph. Treatments were applied with a CO2 backpack with four different nozzle types: 8001, 8002, 8003, and 8004 flat fan nozzles at a speed of 3.5 mph. The spray pressure was 30 psi with volumes of 5, 10, 15, and 20 GPA. The plot size was 4-30 inch rows by 30 feet with 4 replications. The cotton variety was Fibermax 966 LL and the weeds present were tall morningglory (*Ipomoea purpurea*), yellow nutsedge (*Cyperus esculentus)*, black nightshade (*Solanum nigrum)*, and johnsongrass (*Sorghum halepense*).

The objective of this study was to evaluate the effectiveness of various gallonages of herbicides at controlling tall morningglory, yellow nutsedge, black nightshade, and johnsongrass in Liberty Link cotton. Treatments (1) Ignite at 29 fl oz 5 gpa, (2) Ignite at 29 fl oz 10 gpa, (3) Ignite at 29 fl oz 15 gpa, and (4) Ignite at 29 fl oz 20 gpa produced good to excellent control of tall morningglory at 14 days after treatment (Table 1). One treatment that gave good control of johnsongrass was (3) Ignite at 29 fl oz 15 gpa (Table 2). At 14 days after treatment, none of the treatments produced control of yellow nutsedge (Table 3). All of the treatments, (1) Ignite at 29 fl oz 5 gpa, (2) Ignite at 29 fl oz 10 gpa, (3) Ignite at 29 fl oz 15 gpa, and (4) Ignite at 29 fl oz 20 gpa produced good control of black nightshade at 14 days after treatment (Table 4). None of the treatments produced any cotton injury (Table 5).

Table 1.

Tall Morningglory (*Ipomoea purpurea*)					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**28-May 7 DAT**	**4-Jun 14 DAT**
1. Ignite	29 floz	5 gpa	8001	89	91
2. Ignite	29 floz	10 gpa	8002	86	90
3. Ignite	29 floz	15 gpa	8003	80	85
4. Ignite	29 floz	20 gpa	8004	73	73

Table 2.

Johnsongrass (*Sorghum halepense)*					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**28-May 7 DAT**	**4-Jun 14 DAT**
1. Ignite	29 floz	5 gpa	8001	60	40
2. Ignite	29 floz	10 gpa	8002	50	40
3. Ignite	29 floz	15 gpa	8003	60	65
4. Ignite	29 floz	20 gpa	8004	40	44

Table 3.

Purple Nutsedge (*Cyperus esculentus*) Percent Control					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**28-May 7 DAT**	**4-Jun 14 DAT**
1. Ignite	29 floz	5 gpa	8001	33	26
2. Ignite	29 floz	10 gpa	8002	20	23
3. Ignite	29 floz	15 gpa	8003	28	19
4. Ignite	29 floz	20 gpa	8004	20	16

Table 4.

Black Nightshade (*Solanum nigrum*) Percent Control					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**28-May 7 DAT**	**4-Jun 14 DAT**
1. Ignite	29 floz	5 gpa	8001	83	88
2. Ignite	29 floz	10 gpa	8002	70	80
3. Ignite	29 floz	15 gpa	8003	80	70
4. Ignite	29 floz	20 gpa	8004	73	78

Table 5.

Cotton (*Gossypium spp.*) Injury					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**28-May 7 DAT**	**4-Jun 14 DAT**
1. Ignite	29 floz	5 gpa	8001	0	0
2. Ignite	29 floz	10 gpa	8002	0	0
3. Ignite	29 floz	15 gpa	8003	0	0
4. Ignite	29 floz	20 gpa	8004	0	0

Spray Gallonage Comparison in Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. - Tulare – 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was established near Tulare on May 21, 2009. The temperature at application was 79°F and the wind speeds varied from 0 to 3 mph. Treatments were applied with a CO2 backpack with four different nozzle types: 8001, 8002, 8003, and 8004 flat fan nozzles at a speed of 3.5 mph. The spray pressure was 30 psi with volumes of 5, 10, 15, and 20 GPA. The plot sizes were 4-30 inch rows by 30 feet with 4 replications. The cotton variety was PHY 755 Wide-Strike and the weeds present were annual morningglory (*Ipomoea purpurea*) and nutsedge (*Cyperus esculentus*).

The objective of this study was to evaluate the effectiveness of various spray gallonages of Roundup at controlling annual morningglory and yellow nutsedge in RR Flex cotton. All treatments did not give complete to excellent control over tall morningglory and nutsedge (Table 1, Table 2). After 14 days after treatment, the treatment (1) Roundup Weathermax 32 fl oz + AMS 10 lbs at 5 gpa gave good control of annual morningglory compared to the 10, 15, and 20 gpa rates (Table 1). There was not much difference between the 10 to 20 gpa rates with annual morningglory.

All treatments for nutsedge gave extremely poor control 14 days after treatment. Treatment (3) Roundup Weathermax 32 fl oz + AMS 10 lbs at 15 gpa improved slightly, but still at a poor control. Treatments (1) Roundup Weathermax 32 fl oz + AMS 10 lbs at 5 gpa, (2) Roundup Weathermax 32 fl oz + AMS 10 lbs at 10 gpa, and (4) Roundup Weathermax 32 fl oz + AMS 10 lbs at 20 gpa were closer to no control than anything. There was no difference between 5, 10, and 20 gp rates, while there was barely a difference in the 15 gpa compared to all of them (Table 2).

And, 14 days after treatment, there wasn't any cotton injury, as well as 7 days after treatment there wasn't any either (Table 3).

Table 1.

Tall Morningglory (*Ipomoea purpurea*) Percent Control					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**7 DAT**	**14 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 lbs	5 gpa	8001	72	88
2. Roundup Weathermax + AMS	32 floz + 10 lbs	10 gpa	8002	48	70
3. Roundup Weathermax + AMS	32 floz +10 lbs	15 gpa	8003	28	53
4. Roundup Weathermax + AMS	32 floz +10 lbs	20 gpa	8004	47	65

Table 2.

Purple Nutsedge (*Cyperus esculentus*) Percent Control					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**7 DAT**	**14 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 lbs	5 gpa	8001	10	5
2. Roundup Weathermax + AMS	32 floz + 10 lbs	10 gpa	8002	5	5
3. Roundup Weathermax + AMS	32 floz +10 lbs	15 gpa	8003	5	12
4. Roundup Weathermax + AMS	32 floz +10 lbs	20 gpa	8004	5	5

Table 3.

Percent Cotton (*Gossypium spp.*) Injury					
Treatment	**Rate/A**	**Gal.**	**Nozzles**	**7 DAT**	**14 DAT**
1. Roundup Weathermax + AMS	32 floz + 10 lbs	5 gpa	8001	0	0
2. Roundup Weathermax + AMS	32 floz + 10 lbs	10 gpa	8002	0	0
3. Roundup Weathermax + AMS	32 floz +10 lbs	15 gpa	8003	0	0
4. Roundup Weathermax + AMS	32 floz +10 lbs	20 gpa	8004	0	0

Tall Morningglory Control in Liberty Link Cotton

UCCE - Tulare/Kings Co. – Tulare - 2009
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This study was conducted on May 22, 2009 near Tulare. The cotton variety used in this trial was FM 966 Liberty Link. Three applications were applied to 4 plots with 30" inch rows by 30' feet with 4 replications. Treatments were applied with a CO_2 backpack at a speed of 3.5 mph. The weeds present were tall morningglory (*Ipomoea purpurea*), nutsedge (*Cyperus esculentus*), and Johnsongrass (*Sorghum halepense*).

The temperature at the first application was 79°F and the wind speeds varied from 1 to 3 mph. The first application used 8002 flat fan nozzles at a spray pressure of 30 PSI with a volume of 15 GPA. Cotton heights ranged from 1 to 5 inches tall either in the 2 or 3 leaf stage.

The temperature at the second application was 78°F and a wind speed of 5 mph. The second application used 8002 flat fan direct nozzles at a spray pressure of 30 PSI with a volume of 15 GPA. Cotton heights ranged from 18 to 20 inches tall.

The temperature at the third application was 92°F and a wind speed of 5 mph. The third application used 8004 nozzles on the second row, 8003 on the first row, and 6503 on the outside rows at a spray pressure of 30 PSI with a volume of 20 GPA. Cotton heights ranged from 18 to 20 inches tall.

The objective of this study was to evaluate the effectiveness at controlling tall morningglory in Liberty Link cotton using different rates of Glufosinate (*Ignite 280*) with multiple applications. The tall morningglory was in its 2 to 3 leaf stage at the beginning of the study. The two treatments that were compared were Glufosinate at 29 oz with three applications and Glufosinate at one application of 43 oz and a second application at 29 oz. Both treatments produced similar results. 19 days after treatment following the second application, complete control of tall morningglory was observed (Table 1). Throughout the entire trial, no cotton injury was experienced (Table 2).

Table 1.

Tall Morningglory (*Ipomoea purpurea*) Percent Control							
Treatments	**Rate/A**	**Timing**	**7 DAT**	**14 DAT**	**7 DAT**	**15 DAT**	**19 DAT**
1. Ignite 280	29 oz	ABC	79	80	88	95	100
2. Ignite 280	43 oz 29 oz	A B	80	91	90	97	100
3. Untreated	---	---	0	0	0	0	0

Table 2.

Percent Cotton (*Gossypium spp.)* Injury							
Treatments	**Rate/A**	**Timing**	**7 DAT**	**14 DAT**	**7 DAT**	**15 DAT**	**19 DAT**
1. Ignite 280	29 oz	ABC	0	0	0	0	0
2. Ignite 280	43 oz 29 oz	A B	0	0	0	0	0
3. Untreated	---	---	0	0	0	0	0

Tall Morningglory Control in Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. – Tulare - 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was conducted on May 22, 2009 near Tulare. The cotton variety used in this trial was PHY 755 wide-Strike. Three applications were applied to 4 plots with 30" inch rows by 30' feet with 4 replications. Treatments were applied with a CO_2 backpack at a speed of 3.5 mph. The weeds present were tall morningglory (*Ipomoea purpurea*), nutsedge (*Cyperus esculentus*), and Johnsongrass (*Sorghum halepense*).

The first application was given on May 22, 2009. The temperature at the first application was 79°F and the wind speeds varied from 1 to 3 mph. The first application used 8002 flat fan nozzles at a spray pressure of 30 PSI with a volume of 15 GPA. Cotton heights ranged from 1 to 5 inches tall either in the 2 or 3 leaf stage.

The second application was applied on July 7, 2009. The temperature at the second application was 78°F and a wind speed of 5 mph. The second application used 8002 flat fan direct nozzles at a spray pressure of 30 PSI with a volume of 15 GPA. Cotton heights ranged from 18 to 20 inches tall.

The third application was given on July 23, 2009. The temperature at the third application was 88°F and the wind speeds varied from 0 to 2 mph. The third application used 8002 flat fan direct nozzles at a spray pressure of 30 PSI with a volume of 20 GPA. Cotton heights ranged from 18 to 20 inches tall.

The objective of this study was to evaluate the effectiveness at controlling tall morningglory in Roundup Ready Flex cotton using different rates of Glyphosate (*Roundup*) with multiple applications. The tall morningglory was in its 2 to 3 leaf stage at the beginning of the study. The two treatments that were compared were Glyphosate at 22 oz with three applications and Glyphosate at 32 oz with three applications. Both treatments produced similar results. 19 days after treatment following the second application, excellent control of tall morningglory was observed (Table 1). Treatment 2, Glyphosate at 32 oz, generated the best result. Throughout the entire trial, no cotton injury was experienced (Table 2).

Table 1.

Tall Morningglory (*Ipomoea purpurea*) Percent Control							
Treatments	**Rate/A**	**Timing**	**7 DAT**	**14 DAT**	**7 DAT**	**15 DAT**	**19 DAT**
1. Roundup Weathermax	22 oz	ABC	20	71	73	75	96
2. Roundup Weathermax	32 oz	ABC	29	70	80	84	99
3. Untreated	---	---	0	0	0	0	0

Table 2.

Percent Cotton (*Gossypium spp.)* Injury							
Treatments	**Rate/A**	**Timing**	**7 DAT**	**14 DAT**	**7 DAT**	**15 DAT**	**19 DAT**
1. Roundup Weathermax	22 oz	ABC	0	0	0	0	0
2. Roundup Weathermax	32 oz	ABC	0	0	0	0	0
3. Untreated	---	---	0	0	0	0	0

Layby Study in Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. – Tulare - 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was established in Tulare on July 13, 2009. The temperature at the time of application was 86°F and the wind speeds varied from 2 to 4 mph. Treatments were applied with a CO2 backpack with an 8002 flat fan nozzle with drops, 2 per row, at a speed of 3.5 mph. The spray pressure was 30 psi with a volume of 15 GPA. Also at the time of application, the cotton was in a stage of 18 to 22 inches in height and the morningglory was in its 2 leaf to twining stage. The weeds present were annual morningglory (*Ipomoea purpurea*), purple nutsedge (*Cyperus esculentus*), and Johnsongrass (*Sorghum halepense)*.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling annual morningglory, nutsedge, and Johnsongrass in Roundup Ready cotton. Treatments that gave excellent control of annual morningglory at 30 days after treatment were (1) ET + Agridex at 1 oz + .5% v/v, (2) ET + Roundup Weathermax + Agridex at 1 oz + 32 oz + .5% v/v, (3) ET + Direx + Roundup Weathermax + Agridex at .75 oz + 17 oz + 32 oz + .5%, (4) ET + Direx + Roundup Weathermax + Agridex at 1 oz + 23 oz + 32 oz + .5%, (5) ET + Direx + Roundup Weathermax + Agridex at 1.25 oz + 28 oz + 32 oz + .5%, (6) NAI + Roundup Weathermax + Agridex at 32 floz + 32 + .5% v/v, (7) NAI + Roundup Weathermax + Agridex at 47.5 fl oz + 32 + .5% v/v, (8) NAI + Roundup Weathermax + Agridex at 59.4 floz + 32 + .5% v/v, (9) Shark + Agridex at 2 oz + .5%, (10) Shark + Roundup Weathermax + Agridex 2 oz + 32 0z + .5%, (12) Chateau + Roundup Weathermax + Agridex at 2 oz + 32 oz + .5% v/v, (13) Envoke + Agridex at .15 oz + .5% v/v, (14) Envoke + Roundup Weathermax + Agridex at .15 oz + 32 oz + .5% v/v, (15) Roundup Weathermax + AMS at 32 floz + 10 #, (16) Ignite at 43 oz, (17) Prep + Agridex at 8 oz + .5%, (18) Prep + Roundup Weathermax + Agridex at 8 oz + 32 oz + .5%, and (19) Prep + Roundup Weathermax + Agridex at 8 oz + 32 oz + .5% (Table 1). The only treatment that showed good control compared the excellent control, was treatment (11) Chateau + Agridex at 2 oz + .5% v/v.

There were only four treatments that were recorded to have nutsedge present, which were treatments (8) NAI + Roundup Weathermax + Agridex at 59.4 floz + 32 + .5% v/v, (9) Shark + Agridex at 2 oz + .5%, (13) Envoke + Agridex at .15 oz + .5% v/v, and (14) Envoke + Roundup Weathermax + Agridex at .15 oz + 32 oz + .5% v/v (Table 2). These treatments after 30 days, showed extremely poor control over nutsedge.

Only nine treatments had Johnsongrass emerging within the plots, which included treatments (2) ET + Roundup Weathermax + Agridex at 1 oz + 32 oz + .5% v/v, (3) ET + Direx + Roundup Weathermax + Agridex at .75 oz + 17 oz + 32 oz + .5%, (6) NAI + Roundup Weathermax + Agridex at 32 floz + 32 + .5% v/v, (10) Shark + Roundup Weathermax + Agridex 2 oz + 32 0z + .5%, (12) Chateau + Roundup Weathermax + Agridex at 2 oz + 32 oz + .5% v/v, (13) Envoke + Agridex at .15 oz + .5% v/v, (14) Envoke + Roundup Weathermax + Agridex at .15 oz + 32 oz + .5% v/v, (15) Roundup Weathermax + AMS at 32 floz + 10 #, and (19) Prep + Roundup Weathermax + Agridex at 8 oz + 32 oz + .5% (Table 3). All of the treatments, 30 days after treatment, produced poor control over Johnsongrass.

There was cotton injury present throughout the trial, except for in treatments (15) Roundup Weathermax + AMS at 32 floz + 10 # and (16) Ignite at 43 oz (Table 4). All other treatments 30 days after treatment had little to some injury.

Table 1.

Tall Morningglory (*Ipomoea purpurea*) Percent Control			
Treatments	**Rate/A**	**9 DAT**	**30 DAT**
1. ET + Agridex	1 oz + .5% v/v	100	100
2. ET + Roundup Weathermax + Agridex	1 oz + 32 oz + .5% v/v	100	100
3. ET + Direx + Roundup Weathermax + Agridex	.75 oz + 17 oz + 32 oz + .5%	100	100
4. ET + Direx + Roundup Weathermax + Agridex	1 oz + 23 oz + 32 oz + .5%	100	100
5. ET + Direx + Roundup Weathermax + Agridex	1.25 oz + 28 oz + 32 oz + .5%	100	100
6. NAI + Roundup Weathermax + Agridex	32 floz + 32 + .5% v/v	100	100
7. NAI + Roundup Weathermax + Agridex	47.5 floz + 32 + .5% v/v	100	100
8. NAI + Roundup Weathermax + Agridex	59.4 floz + 32 + .5% v/v	100	100
9. Shark + Agridex	2 oz + .5%	100	100
10. Shark + Roundup Weathermax + Agridex	2 oz + 32 0z + .5%	100	100
11. Chateau + Agridex	2 oz + .5% v/v	67	83
12. Chateau + Roundup Weathermax + Agridex	2 oz + 32 oz + .5% v/v	100	100
13. Envoke + Agridex	.15 oz + .5% v/v	92	100
14. Envoke + Roundup Weathermax + Agridex	.15 oz + 32 oz + .5% v/v	88	100
15. Roundup Weathermax + AMS	32 floz + 10 #	92	100
16. Ignite	43 oz	99	99
17. Prep + Agridex	8 oz + .5%	73	98
18. Prep + Roundup Weathermax + Agridex	8 oz + 32 oz + .5%	100	100
19. Prep + Ignite	8 oz + 29 oz	99	100

Table 2.

Purple Nutsedge (*Cyperus esculentus*) Percent Control			
Treatments	**Rate/A**	**9 DAT**	**30 DAT**
1. ET + Agridex	1 oz + .5% v/v	-	-
2. ET + Roundup Weathermax + Agridex	1 oz + 32 oz + .5% v/v	-	-
3. ET + Direx + Roundup Weathermax + Agridex	.75 oz + 17 oz + 32 oz + .5%	-	-
4. ET + Direx + Roundup Weathermax + Agridex	1 oz + 23 oz + 32 oz + .5%	-	-
5. ET + Direx + Roundup Weathermax + Agridex	1.25 oz + 28 oz + 32 oz + .5%	-	-
6. NAI + Roundup Weathermax + Agridex	32 floz + 32 + .5% v/v	-	-
7. NAI + Roundup Weathermax + Agridex	47.5 floz + 32 + .5% v/v	-	-
8. NAI + Roundup Weathermax + Agridex	59.4 floz + 32 + .5% v/v	55	45
9. Shark + Agridex	2 oz + .5%	45	30
10. Shark + Roundup Weathermax + Agridex	2 oz + 32 0z + .5%	-	-
11. Chateau + Agridex	2 oz + .5% v/v	-	-
12. Chateau + Roundup Weathermax + Agridex	2 oz + 32 oz + .5% v/v	-	-
13. Envoke + Agridex	.15 oz + .5% v/v	35	25
14. Envoke + Roundup Weathermax + Agridex	.15 oz + 32 oz + .5% v/v	40	25
15. Roundup Weathermax + AMS	32 floz + 10 #	-	-
16. Ignite	43 oz	-	-
17. Prep + Agridex	8 oz + .5%	-	-
18. Prep + Roundup Weathermax + Agridex	8 oz + 32 oz + .5%	-	-
19. Prep + Ignite	8 oz + 29 oz	-	-

Table 3.

Johnsongrass (*Sorghum halepense)* Percent Control			
Treatments	**Rate/A**	**9 DAT**	**30 DAT**
1. ET + Agridex	1 oz + .5% v/v	-	-
2. ET + Roundup Weathermax + Agridex	1 oz + 32 oz + .5% v/v	65	40
3. ET + Direx + Roundup Weathermax + Agridex	.75 oz + 17 oz + 32 oz + .5%	60	45
4. ET + Direx + Roundup Weathermax + Agridex	1 oz + 23 oz + 32 oz + .5%	-	-
5. ET + Direx + Roundup Weathermax + Agridex	1.25 oz + 28 oz + 32 oz + .5%	-	-
6. NAI + Roundup Weathermax + Agridex	32 floz + 32 + .5% v/v	40	40
7. NAI + Roundup Weathermax + Agridex	47.5 floz + 32 + .5% v/v	-	-
8. NAI + Roundup Weathermax + Agridex	59.4 floz + 32 + .5% v/v	-	-
9. Shark + Agridex	2 oz + .5%	-	-
10. Shark + Roundup Weathermax + Agridex	2 oz + 32 0z + .5%	60	45
11. Chateau + Agridex	2 oz + .5% v/v	-	-
12. Chateau + Roundup Weathermax + Agridex	2 oz + 32 oz + .5% v/v	70	45
13. Envoke + Agridex	.15 oz + .5% v/v	43	30
14. Envoke + Roundup Weathermax + Agridex	.15 oz + 32 oz + .5% v/v	43	28
15. Roundup Weathermax + AMS	32 floz + 10 #	65	45
16. Ignite	43 oz	-	-
17. Prep + Agridex	8 oz + .5%	-	-
18. Prep + Roundup Weathermax + Agridex	8 oz + 32 oz + .5%	-	-
19. Prep + Ignite	8 oz + 29 oz	60	40

Table 4.

Percent Cotton (*Gossypium spp.)* Injury			
Treatments	**Rate/A**	**9 DAT**	**30 DAT**
1. ET + Agridex	1 oz + .5% v/v	27	8
2. ET + Roundup Weathermax + Agridex	1 oz + 32 oz + .5% v/v	17	7
3. ET + Direx + Roundup Weathermax + Agridex	.75 oz + 17 oz + 32 oz + .5%	30	7
4. ET + Direx + Roundup Weathermax + Agridex	1 oz + 23 oz + 32 oz + .5%	22	10
5. ET + Direx + Roundup Weathermax + Agridex	1.25 oz + 28 oz + 32 oz + .5%	27	12
6. NAI + Roundup Weathermax + Agridex	32 floz + 32 + .5% v/v	38	15
7. NAI + Roundup Weathermax + Agridex	47.5 floz + 32 + .5% v/v	38	18
8. NAI + Roundup Weathermax + Agridex	59.4 floz + 32 + .5% v/v	40	18
9. Shark + Agridex	2 oz + .5%	20	7
10. Shark + Roundup Weathermax + Agridex	2 oz + 32 0z + .5%	20	10
11. Chateau + Agridex	2 oz + .5% v/v	32	13
12. Chateau + Roundup Weathermax + Agridex	2 oz + 32 oz + .5% v/v	20	7
13. Envoke + Agridex	.15 oz + .5% v/v	22	12
14. Envoke + Roundup Weathermax + Agridex	.15 oz + 32 oz + .5% v/v	15	3
15. Roundup Weathermax + AMS	32 floz + 10 #	0	0
16. Ignite	43 oz	0	0
17. Prep + Agridex	8 oz + .5%	8	3
18. Prep + Roundup Weathermax + Agridex	8 oz + 32 oz + .5%	5	3
19. Prep + Ignite	8 oz + 29 oz	10	10

UN32 Tankmix Layby Weed Control in Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. - Tulare- 2009
Steve Wright, Lalo Banuelos, Craig Yancy, Matt Mills, Sara Avila

This study was established in Tulare on July 7, 2009. The temperature at the time of application was 78°F and the wind speeds varied around 5 mph. Treatments were applied to a Widestrike cotton crop with a CO2 backpack with 8002 flat fan nozzles at a speed of 3.5 mph. The spray pressure was 30 psi with a volume of 15 GPA. Also at the time of application, the cotton was in a stage of 18 to 20 inches in height, while the tall morningglory was in its 2 to 3 leaf stage, the Johnsongrass was 30 to 57 inches tall, the purple nutsedge was 2 to 6 inches tall, and the common lambsquarter was around 2 feet tall. As previously stated, the weeds present were tall morningglory (*Ipomoea purpurea*), purple nutsedge (*Cyperus esculentus*), Johnsongrass (*Sorghum halepense),* and common lambsquarter *(Chenopodium alba)*.

The objective of this study was to evaluate the effectiveness of various herbicides at controlling annual morningglory, nutsedge, and Johnsongrass in cotton. All treatments that produced excellent control over annual morningglory 36 days after treatment were treatments (1) Roundup Weathermax + UN32 at 32 oz + 5 gallons, (2) Ignite + UN32 at 43 oz + 5 gallons, (3) Shark + UN32 at 2 oz + 5 gallons, (4) ET + UN32 at 1 oz + 5 gallons, and (5) Chateau + UN32 at 2 oz + 5 gallons (Table 1). In conclusion, all treatments should complete to excellent control over tall morningglory.

All treatments in control over nutsedge, in this trial, produced poor control 36 days after treatment (Table 2). During research, 15 days after treatment, treatment (2) Ignite + UN32 at 43 oz + 5 gallons produced good control over nutsedge, but it decreased in percent control 36 days after treatment.

Treatments (1) Roundup Weathermax + UN32 at 32 oz + 5 gallons, (2) Ignite + UN32 at 43 oz + 5 gallons, and (3) Shark + UN32 at 2 oz + 5 gallons gave fair control over Johnsongrass 36 days after treatment (Table 3). All treatments improved control from 7 days after treatment to 15 days after treatment, but went back to original control or lower, 36 days after treatment.

All treatments had cotton injury 7 and 15 days after treatment. Only one treatment, treatment (1) Roundup Weathermax + UN32 at 32 oz + 5 gallons, produced no cotton injury 36 days after treatment (Table 4). Treatments (2) Ignite + UN32 at 43 oz + 5 gallons, (3) Shark + UN32 at 2 oz + 5 gallons, (4) ET + UN32 at 1 oz + 5 gallons, and (5) Chateau + UN32 at 2 oz + 5 gallons showed cotton injury even though it was low to extremely low percent.

Table 1.

Tall Morningglory (*Ipomoea purpurea*) Percent Control				
Treatment	**Rate/A**	**7 DAT**	**15 DAT**	**36 DAT**
1. Roundup Weathermax + UN32	32 oz + 5 gal	61	92	100
2. Ignite + UN32	43 oz + 5 gal	93	99	100
3. Shark + UN32	2 oz + 5 gal	96	100	100
4. ET + UN32	1 oz + 5 gal	95	99	100
5. Chateau + UN32	2 oz + 5 gal	80	82	93

Table 2.

Purple Nutsedge (*Cyperus esculentus*) Percent Control				
Treatment	**Rate/A**	**7 DAT**	**15 DAT**	**36 DAT**
1. Roundup Weathermax + UN32	32 oz + 5 gal	30	50	35
2. Ignite + UN32	43 oz + 5 gal	-	80	50
3. Shark + UN32	2 oz + 5 gal	45	55	43
4. ET + UN32	1 oz + 5 gal	30	30	23
5. Chateau + UN32	2 oz + 5 gal	-	-	-

Table 3.

Johnsongrass (*Sorghum halepense*) Percent Control				
Treatment	**Rate/A**	**7 DAT**	**15 DAT**	**36 DAT**
1. Roundup Weathermax + UN32	32 oz + 5 gal	55	70	55
2. Ignite + UN32	43 oz + 5 gal	57	62	53
3. Shark + UN32	2 oz + 5 gal	53	63	50
4. ET + UN32	1 oz + 5 gal	50	52	42
5. Chateau + UN32	2 oz + 5 gal	40	42	30

Table 4.

Percent Cotton (*Gossypium spp.)* Injury				
Treatment	**Rate/A**	**7 DAT**	**15 DAT**	**36 DAT**
1. Roundup Weathermax + UN32	32 oz + 5 gal	15	8	0
2. Ignite + UN32	43 oz + 5 gal	27	17	5
3. Shark + UN32	2 oz + 5 gal	58	50	23
4. ET + UN32	1 oz + 5 gal	45	37	20
5. Chateau + UN32	2 oz + 5 gal	32	25	15