

COTTON HARVEST AID

Acala and Pima Defoliation

Research Progress Report 2008



University of California Cooperative

Extension:

Steve Wright, Farm Advisor, Tulare/Kings
County

Bob Hutmacher, Cotton Specialist, Westside
Research Extension Center

Laboratory Assistants:

Sarah Hutmacher, Tulare/Kings County
Marlee Tollison, Tulare/Kings County
Linzy Morris, Tulare/Kings County

Staff Research Associates:

Lalo Banuelos, Tulare/Kings County
Mark Keeley, Shafter Research Extension
Center

Agricultural Technicians:

Matt Mills, Tulare County
Craig Yancy, Tulare County
Tony Garcia, Kings County

Westside Research & Extension Center:

Ed Scott
Merf Solorio



2008 Cotton Harvest Aid Research Summary

This report summarizes the applied defoliation research studies conducted during 2008. All projects were conducted at the West Side Research and Extension Center. Five studies were conducted on Acala cotton.

Although it is one of the last management decisions in the cotton production cycle, defoliation timing and application are critical to producing a profitable crop. Improper timing will compromise both seed cotton yield and quality. In light of the premium and discounts for fiber quality brought about by High Volume Instrumentation (HVI), proper choice and timing of harvest aid chemicals are of paramount importance. Ideally, the proper harvest aid materials should defoliate the entire plant within 14 days after application with minimal desiccation. However, plant maturity, moisture status, nitrogen status, and environmental conditions dictate this response. In 2008 it took at least 21 days due to a late rigorous crop and cool weather.

The objective of these studies was to define the most appropriate conditions for ideal defoliation and crop termination. In addition, it is necessary to evaluate alternative, as well as new materials, to current defoliation programs in a manner to insure optimum performance and minimum impact on fiber quality.

ACKNOWLEDGMENTS

We gratefully acknowledge the assistance and support provided by the West Side Research and Extension Center in supplying land, labor, and equipment to conduct these studies.

Support to conduct these studies was provided by Cotton Incorporated

AMVAC	Arysta LifeScience
Bayer Crop Science	Catalyst Products Group
DuPont Chemical	FMC
Nichino America	Syngenta
Valent	

HARVEST AIDS TESTED IN THESE STUDIES

Brand Name	Common Chemical Name/Formulation	Company
Agridex	Crop Oil Concentrate	Helena
Shark	Carfentrazone-ethyl	FMC
CottonQuik	2.25 lb/G Ethephon	Dupont
Def 6	6 lb/G Tribufos	Bayer
Defol 6	6 lb/G Sodium Chlorate	Monterey
ET Herbicide/Defoliant	0.2 EC Pyraflufen-ethyl	Nichino
Finish 6	6.75 lb/G Ethephon & Cyclanilide	Bayer
Ginstar	1.5 EC Thidiazuron & Diuron	Bayer
Gramoxone Inteon	Paraquat	Syngenta
Insure	Buffer Adjuvant	J.R. Simplot
Induce	Nonionic Surfactants	Helena
Integrate	Surfactant (catalyst)	Catalyst
Prep	6 lb/G Ethephon	Bayer
Resource	0.86 EC Flumiclorac pentyl ester	Valent
Adios	1.5 EC Thidiazuron & Diuron	Arysta LifeScience
Folex	6 lb/G Tributyl phosphorothioate	AMVAC

Cotton Harvest Aid Management 2008

Trial 1 - In summary, Ginstar treatments at 3-6 oz rate applied at the 6 nodes above cracked boll followed by a secondary treatment of 6-8 oz of Ginstar or Sodium Chlorate gave 20 percent higher defoliation, 30 percent higher desiccation, and 15 percent improved open boll compared to similar treatments with a two shot approach applied at the standard 4 NACB stage. See pictures below. The 4 NACB treatments did not improve open boll even after 32 DAT. Yield data was collected but we are waiting for gin turnouts to determine the impact of the timing on yields. Micronaire was slightly reduced with the 6 NACB timing but not in a negative way.

Trial 2 - In summary, most treatments were not very ready for harvest until 21 days after treatment. All required two shots resulting in approximately 90 percent defoliation. Differences were minor between treatments for defoliation and desiccation. Open boll was less than desirable (less than 90%). Treatments with Def + Prep plus Integrate or Indicate gave 5-10 percent improved boll opening compared to other treatments in this study.

Trial 3 - In summary, ET and Shark combinations gave comparable defoliation at 21 DAT as Ginstar + Finish. Differences were minor for percent open boll and regrowth.

Trial 4 - In summary, Shark or ET or Ginstar enhanced defoliation compared to paraquat. ET and Ginstar treatments gave slightly improved open boll however open boll was less than desired.



Acala Defoliation (Pre-Treatment Approach)

UCCE--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wroble,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with Roundup Ready Flex Phytogen 725RF on April 15, 2008 with seed rate of 14 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. In addition, the field received 6 ounces of Pix Ultra on June 27, 20 ounces of Pix Ultra on two weeks later. The plot size was 4-40" rows x 65', 4 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 7, 2008, using a Hagie High Cycle sprayer when the cotton was at 6 nodes above cracked boll (NACB), with temperature of 75°F and wind factor of 4-6 mph. The second application was applied on October 14, 2008, using a High Clearance Spider when the cotton was at 4NACB, with temperature of 82°F and wind factor of 0-3 mph. The third application was applied on October 16, 2008, using a High Clearance Spider, with temperature of 75°F and wind factor of 0-3 mph. The last application was applied on October 23, 2008, using a High Clearance Spider with temperature of 82°F with wind factor of 0-3 mph. Defoliation, desiccation, and open boll percentages were visually recorded at 7, 14, 21, and 28 days after treatment (DAT).

At 7 DAT, all treatments displayed average defoliation percentages, averaging approximately 25 percent. Treatment 1 (Ginstar 4 oz + Agridex 1 pt) exhibited the lowest average defoliation percent, 19 percent, and treatment 8 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) exhibited the highest, 35 percent (Table 1). Desiccation averaged approximately 17 percent. Treatment 6 (Ginstar 4 oz + Agridex 1pt) exhibited the lowest, 8 percent, and treatments 5 (Ginstar 6 oz + Agridex 1 pt) and 8 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) exhibited the highest, 25 percent (Table 2). Open boll averaged approximately 68 percent and treatment 8 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) showing the highest with 76 percent (Table 3).

At 14 DAT, all treatments showed various defoliation percentages with treatment 5 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt) being the highest, 54 percent, and treatment 10 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt) being the lowest at 35 percent (Table 1). Desiccation was still fairly low for most treatments, but treatment 7 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) had the highest rating, 68 percent and treatment 2 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) showing the lowest, 28 percent (Table 2). Open boll ratings were in the mid 70 percent range for most treatments with treatment 8 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) at the highest, 83 percent, and treatments 1 (Ginstar 4 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and 2 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) at the lowest, 73 percent (Table 3).

At 21 DAT, treatment 9 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) had the highest defoliation ratings at 73 percent, and treatment 1 (Ginstar 4 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) having the lowest ratings at 50 percent (Table 1). Treatment 7 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) also had the highest desiccation at 71 percent, and treatment 5 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt) having the lowest rating at 53 percent (Table 2). Open boll ratings, with treatments 6 (Ginstar 4 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and 8 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) showing the highest at 93 percent and treatment 2 (Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) having the lowest at 79 percent (Table 3).

In summary, Ginstar treatments at 4-6 oz rate applied at the 4 nodes above cracked boll followed by a secondary treatment of 6-8 oz of Ginstar gave 20 percent higher defoliation, no difference in desiccation, and 10 percent improved open boll compared to similar treatments with a two shot approach applied at the standard 6 NACB stage. The 6 NACB treatments did improve open boll after 28 DAT. Yield data was collected and there was no significance between the timing on yields.

Table 1.

Percent Defoliation						
Treatments	Rate pr/A	Timing	14-Oct	21-Oct	28-Oct	4-Nov
			7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	19	53	50	70
2. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	23	45	53	69
3. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	25	45	58	66
4. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	6NACB	23	48	55	73
5. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	6NACB	30	54	65	74
				7 DAT	14 DAT	21 DAT
6. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		23	39	71
7. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		24	45	68
8. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		35	53	71
9. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	4NACB		30	36	73
10. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	4NACB		21	35	71
11. Untreated	---	---	9	26	20	36

* 6NACB 1st application Oct. 7 & 2nd application Oct. 16

* 4NACB 1st application Oct. 14 & 2nd application Oct. 23

Table 2.

Percent Desiccation						
Treatments	Rate pr/A	Timing	14-Oct	21-Oct	28-Oct	4-Nov
			7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	18	31	66	71
2. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	18	28	68	63
3. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	16	33	59	73
4. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	6NACB	23	35	61	75
5. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	6NACB	25	29	53	58
				7 DAT	14 DAT	21 DAT
6. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		8	39	60
7. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		16	68	71
8. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		25	54	66
9. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	4NACB		14	46	61
10. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	4NACB		13	59	66
11. Untreated	---	---	6	10	8	15

Table 3.

Percent Open Boll						
Treatments	Rate pr/A	Timing	14-Oct	21-Oct	28-Oct	4-Nov
			7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	68	73	80	91
2. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	65	73	79	90
3. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	69	75	81	91
4. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	6NACB	73	80	85	94
5. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	6NACB	69	78	80	90
				7 DAT	14 DAT	21 DAT
6. Ginstar + Agridex	4oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		65	75	93
7. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		65	76	89
8. Ginstar + Finish + Agridex	4oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB		76	83	93
9. Ginstar + Finish + Agridex	6oz + 12oz + 1pt					
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	4NACB		66	78	91
10. Ginstar + Agridex	6oz + 1pt					
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	4NACB		68	76	90
11. Untreated	---	---	63	68	70	76

Table 4.

Treatment	Rate pr/A	Timing	Lint %	Gin T.O. %	Lint Yield Lbs/A
1. Ginstar + Agridex	4oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	36.9 ab	32.8 bc	1326 a
2. Ginstar + Agridex	6oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	37.0 a	33.0 abc	1271 a
3. Ginstar + Finish + Agridex	4oz + 12oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	6NACB	37.0 a	33.3 ab	1289 a
4. Ginstar + Finish + Agridex	6oz + 12oz + 1pt				
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	6NACB	37.1 a	33.3 ab	1301 a
5. Ginstar + Agridex	6oz + 1pt				
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	6NACB	36.9 ab	33.6 a	1225 ab
6. Ginstar + Agridex	4oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB	37.1 a	33.2 abc	1301 a
7. Ginstar + Agridex	6oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB	37.0 a	33.5 ab	1274 a
8. Ginstar + Finish + Agridex	4oz + 12oz + 1pt				
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	4NACB	36.9 ab	33.3 ab	1254 a
9. Ginstar + Finish + Agridex	6oz + 12oz + 1pt				
B. Ginstar + Finish + Agridex	1.6qt + 1pt + 1pt	4NACB	36.7 b	32.5 c	1310 a
10. Ginstar + Agridex	6oz + 1pt				
B. Ginstar + Finish + Agridex	8oz + 20oz + 1pt	4NACB	36.8 ab	33.0 abc	1323 a
11. Untreated	---	---	36.1 c	31.7 d	1110 b
LSD .05			0.37	0.68	NS
% CV			0.69	1.43	7.35

Defoliation Study in Acala Cotton - 2

UCCE--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wroble,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with Roundup Ready Flex Phytogen 715RF on March 28, 2007 with seed rate of 16 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. In addition, the field received 12 ounces of Pix Ultra at first flower and 12 ounces of Pix Ultra two weeks later. The plot size was 4-40" rows x 65', 4 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 8, 2008, using a High Clearance Spider when the cotton was at 40% openboll, with temperature of 82°F and wind factor of 9-10 mph. The last application was applied on October 16, 2008, using a High Clearance Spider with temperature of 75°F with wind factor of 0-3 mph. Defoliation, desiccation, and open boll percentages were visually recorded at 7, 14, and 21 days after treatment (DAT).

At 7 DAT, all treatments displayed average defoliation percentages, averaging approximately 20 percent. Treatment 13 (Shark + Ginstar + Agridex) exhibited the lowest average defoliation percent, 14 percent, and treatment 3 (ET 2floc + CT-301 1.2floc + Prep 2pts + Agridex 1pt) and treatment 9 (Prep 2pts + Def 2pts + Gramoxone Inteon 8floc + Induce 1.6 pt) Desiccation averaged approximately 30 percent. Treatment 11 (Shark 0.5 fl oz + Prep 2 pt + Agridex 1 pt) exhibited the lowest at 16 percent, and treatment 14 (Def 2 pt + Prep 2 pt + Agridex 1 pt) the highest, 46 percent (Table 2). Open boll averaged approximately 66 percent. Treatments 2 (ET 2 fl oz + CT-301 1.2 fl oz + Prep 2 pt + Agridex 1 pt) and treatment 14 (Def 2 pt + Prep 2 pt + Agridex 1 pt) showing the highest with 70-71 percent (Table 3).

At 14 DAT, all treatments displayed average defoliation percentages, averaging approximately 39 percent. Treatment 13 (Shark 2.75 fl oz + Ginstar 8 oz + Agridex 1 pt) exhibited the lowest average defoliation percent, 31 percent, and treatment 15 (Def 2 pt + CottonQuik 3 pt + Agridex 1 pt) the highest, 49 percent (Table 1). Desiccation averaged approximately 30 percent. Treatment 5 (Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt) and treatment 11 (Shark 0.5 fl oz + Prep 2 pt + Agridex 1 pt) exhibited the lowest, 20 percent, and treatment 15 (Def 2 pt + CottonQuik 3 pt + Agridex 1 pt) the highest, 48 percent (Table 2). Open boll averaged approximately 72 percent. Treatments 10 (Ginstar 8 oz + Finish 20 oz + Agridex 1 pt followed by Defol 7 1.6 qts + firestorm 1pt + Induce 1.6 pt) and treatment 14 (Def 2 pt + Prep 2 pt + Agridex 1 pt followed by Defol 7 1.6 qt + Gramoxone Inteon 1 pt + Induce 1.6 pt) showing the highest with 76 percent (Table 3).

At 21 DAT, all treatments displayed average defoliation percentages, averaging approximately 58 percent. Treatment 5 (Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) and treatment 13 (Shark 2.75 fl oz + Ginstar 8 oz + Agridex 1 pt followed by Shark + Gramoxone Inteon + Induce) exhibited the lowest average defoliation percent, 53 percent, and treatment 7 (ET 2.75 fl oz + Ginstar 8 oz + Agridex 1 pt followed by ET + Gramoxone Inteon + Induce) and treatment 15 (Def 2 pt + CottonQuik 3 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) the highest, 69 percent (Table 1). Desiccation averaged approximately 56 percent. Treatment 4 (ET 2 fl oz + Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by ET + Gramoxone Inteon + Induce) and treatment 5 (Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) exhibited the lowest, 48-49 percent, and treatment 17 (Ginstar 6 oz + Prep 2 pt + Integrate 1 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) the highest, 68 percent (Table 2). Open boll averaged approximately 82 percent and treatment 2 (ET 2 oz + CT-301 1.2 oz + Prep 2 pt + Agridex 1 pt followed by ET 2 floc + CT-301 2.4 floc + Agridex 1 pt) showing the highest with 85 percent.

At 28 DAT, all treatments displayed average defoliation percentages, averaging approximately 64 percent. Treatment 5 (Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) exhibited the lowest average defoliation percent, 59 percent, and treatment 14 (Def 2 pt + Prep 2 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) the highest, 73 percent. Desiccation averaged approximately 36 percent. Treatment 5 (Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) and treatment 12 (Shark 0.5 fl oz + Ginstar 6 oz + CottonQuik 3 pt + Agridex 1 pt followed by Shark + Gramoxone Inteon + Induce) exhibited the lowest, 30-31 percent, and treatment 17 (Ginstar 6 oz + Prep 2 pt + Integrate 1 pt + Agridex 1 pt followed by Defol 7 + Gramoxone Inteon + Induce) the highest, 50 percent (Table 2). Open boll averaged approximately 83 percent and treatment 2 (ET 2 oz + CT-301 1.2 oz + Prep 2 pt + Agridex 1 pt followed by ET 2 floc + CT-301 2.4 floc + Agridex 1 pt) and 14 (Ginstar 6 oz + Def 2 pt + Agridex 1 pt followed by Defol 7 1.6 qt + Gramoxone Inteon 1 pt + Induce 1.6 pt) showing the highest with 85 percent (Table 3).

Table 1.

Percent Defoliation					
Treatment	Rate pr/A	7 DAT	14 DAT	21 DAT	28 DAT
1. ET + Prep + Agridex B. ET + Agridex	2floz + 2pts + 1pt 2floz + 1pt	16	34	58	64
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 1.2floz + 2pts + 1pt 2floz + 1.2floz + 1pt	21	34	59	65
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 2.4floz + 2pts + 1pt 2floz + 2.4floz + 1pt	26	40	56	66
4. ET + Ginstar + CottonQuik + Agridex B. ET + Gramoxone Inteon + Induce	2floz + 6floz + 3pts + 1pt 2.75floz + 1pt + 1.6pt	21	38	55	63
5. Ginstar + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 3pts + 1pt 1.6qts + 1pt + 1.6pt	16	38	53	59
6. Ginstar + Finish + Agridex B. Defol 7 + Gramoxone Inteon + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	18	39	61	68
7. ET + Ginstar + Agridex B. ET + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	18	46	69	70
8. Ginstar + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	8floz + 5floz + 1pt 1.6qts + 1pt + 1.6pt	25	40	65	69
9. Prep + Def + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 8floz + 1.6pt 1.6qts + 1pt + 1.6pt	26	40	58	65
10. Ginstar + Finish + Agridex B. Defol 7 + Firestorm + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	24	44	61	65
11. Shark + Prep + Agridex B. Shark + Agridex	.5floz + 2pts + 1pt 1floz + 1pt	19	41	58	64
12. Shark + Ginstar + CottonQuik + Agridex B. Shark + Gramoxone Inteon + Induce	.5floz + 6floz + 3pts + 1pt 1floz + 1pt + 1.6pt	19	41	55	65
13. Shark + Ginstar + Agridex B. Shark + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	14	31	53	61
14. Def + Prep + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt 1.6qts + 1pt + 1.6pt	21	43	68	73
15. Def + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 3pts + 1pt 1.6qts + 1pt + 1.6pt	20	49	69	70
16. Ginstar + Def + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pt 1.6qts + 1pt + 1.6pt	23	45	63	70
17. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pts + 1pt 1.6qts + 1pt + 1.6pt	16	39	64	66
18. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt + 1pt 1.6qts + 1pt + 1.6pt	23	43	63	66
19. Untreated	-----	10	16	24	24

Table 2.

Percent Desiccation					
Treatment	Rate pr/A	7 DAT	14 DAT	21 DAT	28 DAT
1. ET + Prep + Agridex B. ET + Agridex	2floz + 2pts + 1pt 2floz + 1pt	21	28	59	40
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 1.2floz + 2pts + 1pt 2floz + 1.2floz + 1pt	21	25	58	39
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 2.4floz + 2pts + 1pt 2floz + 2.4floz + 1pt	29	31	58	40
4. ET + Ginstar + CottonQuik + Agridex B. ET + Gramoxone Inteon + Induce	2floz + 6floz + 3pts + 1pt 2.75floz + 1pt + 1.6pt	24	31	49	33
5. Ginstar + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 3pts + 1pt 1.6qts + 1pt + 1.6pt	24	20	48	31
6. Ginstar + Finish + Agridex B. Defol 7 + Gramoxone Inteon + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	23	25	60	35
7. ET + Ginstar + Agridex B. ET + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	24	33	63	35
8. Ginstar + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	8floz + 5floz + 1pt 1.6qts + 1pt + 1.6pt	20	28	59	39
9. Prep + Def + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 8floz + 1.6pt 1.6qts + 1pt + 1.6pt	33	30	59	33
10. Ginstar + Finish + Agridex B. Defol 7 + Firestorm + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	29	38	50	38
11. Shark + Prep + Agridex B. Shark + Agridex	.5floz + 2pts + 1pt 1floz + 1pt	16	20	51	34
12. Shark + Ginstar + CottonQuik + Agridex B. Shark + Gramoxone Inteon + Induce	.5floz + 6floz + 3pts + 1pt 1floz + 1pt + 1.6pt	25	35	54	30
13. Shark + Ginstar + Agridex B. Shark + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	19	25	51	34
14. Def + Prep + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt 1.6qts + 1pt + 1.6pt	46	39	65	45
15. Def + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 3pts + 1pt 1.6qts + 1pt + 1.6pt	36	48	66	39
16. Ginstar + Def + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pt 1.6qts + 1pt + 1.6pt	30	43	65	45
17. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pts + 1pt 1.6qts + 1pt + 1.6pt	28	34	68	50
18. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt + 1pt 1.6qts + 1pt + 1.6pt	33	28	59	41
19. Untreated	-----	8	13	18	7

Table 3.

Percent Open Boll					
Treatment	Rate pr/A	7 DAT	14 DAT	21 DAT	28 DAT
1. ET + Prep + Agridex B. ET + Agridex	2floz + 2pts + 1pt 2floz + 1pt	66	73	84	84
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 1.2floz + 2pts + 1pt 2floz + 1.2floz + 1pt	71	74	85	85
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2floz + 2.4floz + 2pts + 1pt 2floz + 2.4floz + 1pt	64	69	79	81
4. ET + Ginstar + CottonQuik + Agridex B. ET + Gramoxone Inteon + Induce	2floz + 6floz + 3pts + 1pt 2.75floz + 1pt + 1.6pt	66	76	83	83
5. Ginstar + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 3pts + 1pt 1.6qts + 1pt + 1.6pt	65	69	81	83
6. Ginstar + Finish + Agridex B. Defol 7 + Gramoxone Inteon + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	64	70	83	83
7. ET + Ginstar + Agridex B. ET + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	66	71	81	83
8. Ginstar + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	8floz + 5floz + 1pt 1.6qts + 1pt + 1.6pt	66	74	83	83
9. Prep + Def + Gramoxone Inteon + Induce B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 8floz + 1.6pt 1.6qts + 1pt + 1.6pt	69	74	84	84
10. Ginstar + Finish + Agridex B. Defol 7 + Firestorm + Induce	8floz + 20floz + 1pt 1.6qts + 1pt + 1.6pt	68	76	84	84
11. Shark + Prep + Agridex B. Shark + Agridex	.5floz + 2pts + 1pt 1floz + 1pt	64	70	79	81
12. Shark + Ginstar + CottonQuik + Agridex B. Shark + Gramoxone Inteon + Induce	.5floz + 6floz + 3pts + 1pt 1floz + 1pt + 1.6pt	68	74	83	83
13. Shark + Ginstar + Agridex B. Shark + Gramoxone Inteon + Induce	2.75floz + 8floz + 1pt 2.75floz + 1pt + 1.6pt	63	71	80	81
14. Def + Prep + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt 1.6qts + 1pt + 1.6pt	70	76	84	85
15. Def + CottonQuik + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 3pts + 1pt 1.6qts + 1pt + 1.6pt	68	73	83	84
16. Ginstar + Def + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pt 1.6qts + 1pt + 1.6pt	68	75	84	84
17. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6floz + 2pts + 1pts + 1pt 1.6qts + 1pt + 1.6pt	63	73	81	83
18. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2pts + 2pts + 1pt + 1pt 1.6qts + 1pt + 1.6pt	65	73	80	81
19. Untreated	-----	64	68	75	76

Defoliation Study in Acala Cotton - 3

UCCE--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wroble,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with Roundup Ready Flex Phytogen 715RF on March 28, 2007 with seed rate of 16 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. In addition, the field received 12 ounces of Pix Ultra at first flower and 12 ounces of Pix Ultra two weeks later. The plot size was 4-40" rows x 65', 4 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 7, 2008, using a Hagie High Cycle when the cotton was at 40% open boll, with temperature of 75°F and wind factor of 4-7 mph. The last application was applied on October 16, 2008, using a High Clearance Spider with temperature of 78°F with wind factor of 0-3 mph. Defoliation, desiccation, and open boll percentages were visually recorded at 7, 14, 21, and 28 days after treatment (DAT).

At 7 DAT, all treatments displayed average defoliation percentages, averaging approximately 23 percent. Treatment 3 (Ginstar 6oz + Finish 20oz + Agridex 1pt) exhibited the lowest average defoliation percent, 14 percent, and treatment 9 (Adios 6oz + Prep 2pts + Agridex 1 pt) the highest, 30 percent. Desiccation averaged approximately 20 percent. Treatment 3 (Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) exhibited the lowest, 14 percent, and treatment 12 (Adios 60z + Prep 2pts + Agridex 1 pt) the highest, 26 percent (Table 1). Open boll averaged approximately 62 percent and treatments 5 (Ginstar 6oz + Finish 20oz + Agridex 1 pt) showing the highest with 68 percent (Table 2).

At 14 DAT, all treatments displayed average defoliation percentages, averaging approximately 43 percent. Treatment 1 (Ginstar 6 floz + Finish 20 oz + Agridex 1 pt) and treatment 3 (Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) exhibited the lowest average defoliation percent, 35 percent, and treatment 4 (Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and treatment 5 (Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) the highest, 51 percent. Desiccation averaged approximately 19 percent. Treatment 14 (Ginstar 6floz + Finish 20 oz + Agridex 1pt) exhibited the lowest, 14 percent, and treatment 2 (Ginstar 6 oz + Finish 20 oz + Agridex 1pt) the highest, 28 percent (Table 1). Open boll averaged approximately 71 percent and treatment 10 (Adios 6 floz + Prep 2pts + Agridex 1 pt) showing the highest with 78 percent (Table 2).

At 21 DAT, all treatments displayed average defoliation percentages, averaging approximately 59 percent. Treatment 9 (Adios 6oz + Prep 2pts + Agridex 1 pt) exhibited the lowest average defoliation percent, 48 percent, and treatment 5 (Ginstar 6oz + Finish 20oz + Agridex 1 pt followed by Shark 1.6 oz + Agridex 1 pt), treatment 11 (Adios 6 oz + prep 2 pts + Agridex 1 pt followed by Gramoxone Inteon 1 pt + Induce 1.6 pt) and Treatment 16 (Adios 6 oz + Prep 2 pts + Agridex 1 pt followed by Adios 8 oz + Agridex 1 pt) all having the highest, 68 percent. Desiccation averaged approximately 51 percent. Treatment 1 (Ginstar 6 oz + Prep 20oz + Agridex 1 pt) exhibited the lowest, 31 percent, and treatment 5 (Ginstar 6 floz + Finish 20 oz + Agridex 1 pt) the highest, 64 percent (Table 1). Open boll averaged approximately 80 percent and treatment 2 (Ginstar 6 oz + Finish 20 oz + Agrimax 1 pt) showing the highest with 86 percent.

At 28 DAT, all treatments displayed average defoliation percentages, averaging approximately 64 percent. Treatment 9 (Adios 6 oz + Prep 2 pts + Agridex 1 pt) exhibited the lowest defoliation percent, 51 and treatment 11 (Adios 6 oz + prep 2 pts + Agridex 1 pt followed by Gramoxone Inteon 1 pt + Induce 1.6 pt) has the highest, 73 percent (Table 1). Desiccation averaged approximately 35 percent. Treatment 9 (Adios 6 oz + Prep 2 pts + Agridex 1 pt) exhibited the lowest, 13 percent, and treatment 11 (Adios 6 oz + prep 2 pts + Agridex 1 pt followed by Gramoxone Inteon 1 pt + Induce 1.6 pt) has the highest, 53 percent (Table 2). Open boll averaged approximately 83 percent and treatment 2 (Ginstar 6oz + Finish 20 oz + Agridex followed by Defol 7 1.6 qts + Gramoxone Inteon 1 pt + Induce 1.6 pts) and 10 (Adios 6 oz + Prep 2 pts + Agridex 1 pt followed by Defol 7 1.6pts + Gamoxone Inteon 1pt + Induce 1.6 pt) showing the highest with 89 percent.

Table 1.

Percent Defoliation					
Treatments	Rate/A	7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	19	35	49	54
2. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	16	40	59	68
3. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	14	35	50	63
4. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. ET + Agridex	2.75floz + 1pt	20	51	66	68
5. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Shark + Agridex	1.6oz + 1pt	28	51	68	71
6. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	24	44	65	65
7. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	26	46	64	65
8. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Ginstar + Agridex	8oz + 1pt	29	44	63	69
9. Adios + Prep + Agridex	6oz + 2pts + 1pt	30	40	48	51
10. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	23	44	65	68
11. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	25	48	68	73
12. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. ET + Agridex	2.75floz + 1pt	25	40	64	68
13. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Shark + Agridex	1.6oz + 1pt	29	45	60	64
14. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	21	46	65	65
15. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	24	45	59	63
16. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Adios + Agridex	8oz + 1pt	23	46	68	68
17. Untreated	-----	15	26	34	46

Table 2.

Percent Desiccation					
Treatments	Rate/A	7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	23	19	31	16
2. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	20	28	60	44
3. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	14	16	44	40
4. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. ET + Agridex	2.75floz + 1pt	19	19	56	35
5. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Shark + Agridex	1.6oz + 1pt	23	19	64	38
6. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	18	18	63	35
7. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	21	18	58	38
8. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Ginstar + Agridex	8oz + 1pt	19	14	58	49
9. Adios + Prep + Agridex	6oz + 2pts + 1pt	24	15	26	13
10. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	20	26	63	44
11. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	25	25	63	53
12. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. ET + Agridex	2.75floz + 1pt	26	16	53	31
13. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Shark + Agridex	1.6oz + 1pt	25	18	44	33
14. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	21	24	59	34
15. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	20	23	45	33
16. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Adios + Agridex	8oz + 1pt	16	23	63	46
17. Untreated	-----	8	6	15	16

Table 3.

Percent Open Boll					
Treatments	Rate/A	7 DAT	14 DAT	21 DAT	28 DAT
1. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	64	70	78	80
2. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	63	76	86	89
3. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	59	68	75	83
4. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. ET + Agridex	2.75floz + 1pt	64	74	80	83
5. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Shark + Agridex	1.6oz + 1pt	68	74	81	84
6. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	60	68	80	80
7. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	65	73	81	84
8. Ginstar + Finish + Agridex	6oz + 20oz + 1pt				
B. Ginstar + Agridex	8oz + 1pt	64	68	76	83
9. Adios + Prep + Agridex	6oz + 2pts + 1pt	63	70	76	80
10. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Gramoxone Inteon + Induce	1.6qts + 1pt + 1.6pt	65	78	84	89
11. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Gramoxone Inteon + Induce	1pt + 1.6pt	60	70	85	88
12. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. ET + Agridex	2.75floz + 1pt	66	73	80	83
13. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Shark + Agridex	1.6oz + 1pt	61	74	80	84
14. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + ET + Agridex	1.6qts + 2.75oz + 1pt	60	71	79	81
15. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Defol 7 + Shark + Agridex	1.6qts + 1.6oz + 1pt	63	73	79	83
16. Adios + Prep + Agridex	6oz + 2pts + 1pt				
B. Adios + Agridex	8oz + 1pt	60	69	81	83
17. Untreated	-----	59	65	73	75

Defoliation Study in Acala Cotton - 4

UCCE--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wroble,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with Roundup Ready Flex Phytogen 715RF on March 28, 2007 with seed rate of 16 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. In addition, the field received 12 ounces of Pix Ultra at first flower and 12 ounces of Pix Ultra two weeks later. The plot size was 4-40" rows x 65', 4 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on September 25, 2008, using a Hagie High Cycle when the cotton was at 15% open boll, with temperature of 95°F and wind factor of 2-4 mph. The second application was applied on October 7, 2008, using a Hagie High Cycle when the cotton was at 40% open boll, with temperature of 75°F with wind factor of 4-7 mph. The last application was applied on October 17, 2008, using a High Clearance John Deere with temperature of 72°F with wind factor of 0 mph. Defoliation, desiccation, and open boll percentages were visually recorded at 7, 14, 21, and 28 days after treatment (DAT).

At 7 DAT, all treatments which were sprayed at 15% OB displayed average defoliation percentages of 0 percent. On the treatment 4(Finish 1 floz + Agridex 1 pt) which was sprayed at 40% OB showed percentages of 26 at 7 DAT. Desiccation averaged approximately 4 percent on all treatments sprayed at 15% OB (Table 1). On treatment 4 the percentages showed 18. Open boll averaged approximately 27 percent on all treatments at 15% OB. On treatment 4 it showed a 69 percent open boll (Table 2).

At 14 DAT, all treatments sprayed at 15% OB displayed average defoliation percentages, averaging approximately 8 percent. Treatment 1 (Shark 1 floz + Agridex 1 pt) exhibited the lowest average defoliation percent, 6 percent, and treatment 3 (Shark 1 floz + Agridex 1 pt) the highest, 9 percent. Treatment 4 showed a defoliation percent of 36. Desiccation averaged approximately 11 percent on all of the 15% OB applications. Treatment 1 (Shark 1 floz + Agridex 1 pt) exhibited the lowest, 10 percent, and treatment 3 (Shark 1 floz + Agridex 1 pt) the highest, 13 percent. Treatment 4 showed 18 percent desiccation (Table 1). Open boll averaged approximately 50 percent on all 15% treatments and treatments 3 (Shark 1 floz + Agridex 1 pt) showing the highest with 51 percent and treatment 4 showing 74 percent (Table 2).

At 21 DAT, treatment 1 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) exhibited the lowest average defoliation percent, 30 percent, and treatment 2 (Shark 1 floz + Agridex 6 oz followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) the highest, 43 percent. Desiccation averaged approximately 32 percent. Treatment 1 (Shark 1 floz + Agridex 1 pt followed by Ginstar 4 oz + Finish 20 oz + Agridex 1) exhibited the lowest, 28 percent, and treatment 2 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) the highest, 36 percent (Table 1). Open boll averaged approximately 74 percent and treatment 2 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and treatment 3(Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) showing the highest with 76 percent.

At 28 DAT, treatment 1 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) exhibited the lowest average defoliation percent, 44 percent, and treatment 2 (Shark 1 floz + Agridex 6 oz followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and treatment 3(Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) showed the highest, 55 percent. Desiccation averaged approximately 37 percent and treatment 1, treatment 1 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) exhibited the lowest and treatments 2 (Shark 1 floz + Agridex 6 oz followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) and treatment 3(Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) showed the highest, 45 percent. Open boll 85 and treatment 2 (Shark 1 floz + Agridex 1 pt followed by Ginstar 6 oz + Agridex 1 pt followed by Ginstar 6 oz + Finish 20 oz + Agridex 1 pt) the highest, 91 percent (Table 1).

– In summary, most treatments were not very ready for harvest until 35 days after treatment. Shark, followed by Ginstar, followed by third shot of Ginstar + Finish gave 90 percent open boll. Yield data was collected and there was no significance between the timing on yields.

Table 1.

Percent Défoliation							
			2-Oct.	9-Oct.	16-Oct.	23-Oct.	30-Oct.
Treatment	Rate pr/A	Timing	7 DAT	14 DAT	21 DAT	28 DAT	35 DAT
1. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	0	6	30	44	48
2. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Agridex	6oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	0	8	43	55	64
3. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	0	9	40	55	55
					7 DAT	14 DAT	21 DAT
4. Finish + Agridex	12oz + 1pt	40% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	60% OB			26	36	44
5. Untreated	-----	----	0	0	23	30	35

* 1st application sprayed on 25-Sept.

* 2nd application sprayed on 9-Oct.

* Last application sprayed on 16-Oct.

Table 2.

Percent Dessiccation							
			2-Oct.	9-Oct.	16-Oct.	23-Oct.	30-Oct.
Treatment	Rate pr/A	Timing	7 DAT	14 DAT	21 DAT	28 DAT	35 DAT
1. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	5	10	28	21	20
2. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Agridex	6oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	4	11	36	45	44
3. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	4	13	31	45	45
					7 DAT	14 DAT	21 DAT
4. Finish + Agridex	12oz + 1pt	40% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	60% OB			18	18	19
5. Untreated	-----	----	0	0	16	14	13

Table 3.

Percent Open Boll							
			2-Oct.	9-Oct.	16-Oct.	23-Oct.	30-Oct.
Treatment	Rate pr/A	Timing	7 DAT	14 DAT	21 DAT	28 DAT	35 DAT
1. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	35	50	71	76	84
2. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Agridex	6oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	26	50	76	84	91
3. Shark + Agridex	1floz + 1pt	15% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	40% OB					
C. Ginstar + Finish + Agridex	6oz + 20oz + 1pt	60% OB	28	51	76	80	81
					7 DAT	14 DAT	21 DAT
4. Finish + Agridex	12oz + 1pt	40% OB					
B. Ginstar + Finish + Agridex	6oz + 12oz + 1pt	60% OB			69	74	76
5. Untreated	-----	----	20	38	70	73	78

Table 4.

Percent Open Boll					
Treatment	Rate pr/A	Timing	Lint %	Gin T.O. %	Lint Yield Lbs/A
1. Shark + Agridex B. Ginstar + Finish + Agridex	1floz + 1pt 6oz + 20oz + 1pt	15% OB 60% OB	36.6 b	31.8	1168
2. Shark + Agridex B. Ginstar + Agridex C. Ginstar + Finish + Agridex	1floz + 1pt 6oz + 1pt 6oz + 20oz + 1pt	15% OB 40% OB 60% OB	37.0 ab	32.6	1312
3. Shark + Agridex B. Ginstar + Finish + Agridex C. Ginstar + Finish + Agridex	1floz + 1pt 6oz + 12oz + 1pt 6oz + 20oz + 1pt	15% OB 40% OB 60% OB	37.1 a	32.6	1222
4. Finish + Agridex B. Ginstar + Finish + Agridex	12oz + 1pt 6oz + 12oz + 1pt	40% OB 60% OB	37.1 a	32.4	1307
5. Untreated	-----	-----	36.7 ab	32.0	1211
LSD .05	-----	-----	0.48	NS	NS
% CV	-----	-----	0.85	1.77	6.24

Defoliation Study in Pima Cotton - 1

UCCE--Tulare/Kings Co.--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wrobles,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with PhytoGen 830 on March 2008 with seed rate of 17 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. The plot size was 4-40" rows x 65', 3 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 15, 2008, using a Hagie High Cycle sprayer when the cotton was at 10-20 percent open boll. The temperature was 75°F and wind factor of 4- 7 mph.

The last application was applied on November 4, 2008, using a Hagie High Cycle when the cotton was at 60-70 percent open boll. The temperature was 75°F with wind factor of 4-7 mph.

Defoliation, desiccation, and open boll percentages were visually recorded at 7-10 days after treatment (DAT). No terminal or basal regrowth evaluations were taken.

At 7-DAT Treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1% v/v) had the lowest defoliation percent with 18 percent, while treatment 2 (Shark 0.75 oz + Agridex 1% v/v) had the highest percent with 26 percent defoliation (Table 1). Desiccation had average rates and treatment 1 (Shark 0.5 floz + Agridex 1% v/v) had the lowest percent with 23 percent desiccation and treatment 3 (Shark 1 floz + Agridex 1% v/v) had the highest percent with 38 percent. Open boll had average results with treatment 2 (Shark 0.75 floz + Agridex 1% v/v) having the highest percentage with 31 percent (Table 3).

At 13-DAT, for defoliation, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt) had the lowest rating with 21 percent and treatments 2 (Shark 0.75 floz + Agridex 1% v/v) and 3 (Shark 1 floz + Agridex 1% v/v) had the highest rating with 31 percent (Table 1). For desiccation, treatment 1 (Shark 0.5 oz + Agridex 1% v/v) had the lowest rating at 19 percent and treatment 2 (Shark 0.75 floz + Agridex 1% v/v) had the highest rating at 30 percent (Table 2). For open boll, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt) had the highest rating with 40 percent (Table 3).

At 20-DAT, for defoliation, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 10 oz + CottonQuik 3 pt + Agridex 1 pt) had the lowest rating with 24 percent and treatments 2 (Shark 0.75 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) and 3 (Shark 1 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) had the highest ratings with 31 percent (Table 1). For desiccation, treatment 1 (Shark 0.5 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) had the lowest ratings with 19 percent and treatment 3 (Shark 1 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) had the highest rating with 29 percent (Table 2). For open boll, treatments 3 (Shark 1 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) and treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 10 oz + CottonQuik 3 pt + Agridex 1 pt) had the highest rating with 50 percent (Table 3).

At 27-DAT, for defoliation, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 10 oz + CottonQuik 3 pt + Agridex 1 pt) had the lowest rating with 31 percent and treatments 1 (Shark 0.5 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) and 2 (Shark 0.75 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) had the highest rating with 43 percent (Table 1). For desiccation, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 10 oz + CottonQuik 3 pt + Agridex 1 pt) had the lowest rating with 19 percent and treatment 3 (Shark 1 floz + Agridex 1% v/v followed by Shark 1 floz + Ginstar 8 oz + Agridex 1 pt) had the highest rating with 28 percent (Table 2). For open boll, treatment 4 (Ginstar 5 oz + Finish 12 oz + Agridex 1 pt followed by Ginstar 10 oz + CottonQuik 3 pt + Agridex 1 pt) had the highest ratings with 55 percent (Table 3).

Table 1.

Percent Defoliation						
Treatments	Rates/A	Timing	15-Oct	21-Oct	28-Oct	4-Nov
			7-DAT	13-DAT	20-DAT	27-DAT
1. Shark + Agridex	0.5 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	20	24	26	43
2. Shark + Agridex	0.75 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	26	31	31	43
3. Shark + Agridex	1 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	25	31	31	39
4. Ginstar + Finish + Agridex	5 oz + 12 oz + 1 pt	15% OB				
B. Ginstar + CottonQuik + Agridex	10 oz + 3 pt + 1 pt	70% OB	18	21	24	31
5. Untreated	---		9	24	24	25

Table 2.

Percent Desiccation						
Treatments	Rates/A	Timing	15-Oct	21-Oct	28-Oct	4-Nov
			7-DAT	13-DAT	20-DAT	27-DAT
1. Shark + Agridex	0.5 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	23	19	19	25
2. Shark + Agridex	0.75 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	33	30	28	23
3. Shark + Agridex	1 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	38	29	29	28
4. Ginstar + Finish + Agridex	5 oz + 12 oz + 1 pt	15% OB				
B. Ginstar + CottonQuik + Agridex	10 oz + 3 pt + 1 pt	70% OB	25	20	20	19
5. Untreated	---		9	14	14	15

Table 3.

Percent Open Boll						
Treatments	Rates/A	Timing	15-Oct	21-Oct	28-Oct	4-Nov
			7-DAT	13-DAT	20-DAT	27-DAT
1. Shark + Agridex	0.5 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	25	34	45	50
2. Shark + Agridex	0.75 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	31	39	48	50
3. Shark + Agridex	1 floz + 1% v/v	15% OB				
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	30	36	50	53
4. Ginstar + Finish + Agridex	5 oz + 12 oz + 1 pt	15% OB				
B. Ginstar + CottonQuik + Agridex	10 oz + 3 pt + 1 pt	70% OB	30	40	50	55
5. Untreated	---		29	40	45	50

Table 4.

Treatments	Rates/A	Timing	Lint %	Gin T.O. %	Lint Yield lbs/A
1. Shark + Agridex	0.5 floz + 1% v/v	15% OB			
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	37.3	31.1	650
2. Shark + Agridex	0.75 floz + 1% v/v	15% OB			
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	37.3	30.9	540
3. Shark + Agridex	1 floz + 1% v/v	15% OB			
B. Shark + Ginstar + Agridex	1 floz + 8 oz + 1 pt	70% OB	37.8	31.7	630
4. Ginstar + Finish + Agridex	5 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + CottonQuik + Agridex	10 oz + 3 pt + 1 pt	70% OB	37.5	31.5	555
5. Untreated	---		37.4	31.7	587
% CV			NS	NS	106.12
LSD .05			0.87	2.08	11.63

Defoliation Study in Pima Cotton - 2

UCCE--Tulare/Kings Co.--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wrobles,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with PhytoGen 830 on March 2008 with seed rate of 17 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. The plot size was 4-40" rows x 65', 3 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 15, 2008, using a Hagie High Cycle sprayer when the cotton was at 10-20 percent open boll. The temperature was 75°F and wind factor of 0-3 mph.

The last application was applied on November 4, 2008, using a Hagie High Cycle when the cotton was at 60-70 percent open boll. The temperature was 75°F with wind factor of 0-3 mph.

Defoliation, desiccation, and open boll percentages were visually recorded at 7-10 days after treatment (DAT). No terminal or basal regrowth evaluations were taken.

At 7-DAT for defoliation, treatment 5 (Ginstar 6 oz + Agridex 1 pt) had the lowest rating at 15 percent and treatment 2 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) had the highest rating at 24 percent (Table 1). For desiccation, treatments 1 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt), 3 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt), 5 (Ginstar 6 oz + Agridex 1 pt) and 8 (Ginstar 6 oz + Agridex 1 pt) had the lowest rating at 10 percent and treatment 7 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) had the highest percent at 14 percent (Table 2). Treatment 4 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) had the highest open boll rating at 40 percent (Table 3).

At 14-DAT for defoliation treatment 3 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) showed the lowest rating with 25 percent and treatment 4 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) showed the highest at 30 percent (Table 1). For desiccation, treatment 2 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) had the lowest desiccation rating at 19 percent and treatment 4 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) had the highest rating at 25 percent (Table 2). For open boll, treatment 4 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) had the highest rating at 25 percent (Table 3).

At 21-DAT for defoliation, treatment 3 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt had the lowest rating with 50 percent and treatment 1 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt had the highest rating at 59 percent (Table 1). For Desiccation, treatment 2 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) followed by Ginstar 10 oz + Finish 20 oz + Agridex 1 pt had the lowest rating with 40 percent and treatment 1 (Ginstar 4 oz + Finish 12 oz + Agridex 1 pt) followed by Ginstar 8 oz + Finish 20 oz + Agridex 1 pt had the highest rating at 53 percent (Table 2). For open boll, treatment 3 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) and treatment 4 (Ginstar 6 oz + Finish 12 oz + Agridex 1 pt) followed by Ginstar 10 oz + Finish 20 oz + Agridex 1 pt had the highest ratings with 69 percent (Table 3).

Table 1.

Percent Defoliation					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	19	26	59
2. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	24	26	51
3. Ginstar + Finish + Agridex	6 oz + 12 oz + 1pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	19	25	50
4. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	23	30	53
5. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	15	23	55
6. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 2- oz + 1 pt	70% OB	23	29	54
7. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	21	29	58
8. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	21	26	54
9. Untreated	---		16	16	34

Table 2.

Percent Desiccation					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	10	24	53
2. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	13	19	40
3. Ginstar + Finish + Agridex	6 oz + 12 oz + 1pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	10	20	44
4. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	13	25	45
5. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	10	21	48
6. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 2- oz + 1 pt	70% OB	13	20	49
7. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	14	21	44
8. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	10	21	50
9. Untreated	---		6	9	15

Table 3.

Percent Open Boll					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	38	45	66
2. Ginstar + Finish + Agridex	4 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	38	46	65
3. Ginstar + Finish + Agridex	6 oz + 12 oz + 1pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	38	45	69
4. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	40	49	69
5. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	36	45	68
6. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 2- oz + 1 pt	70% OB	35	44	65
7. Ginstar + Finish + Agridex	6 oz + 12 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	10 oz + 20 oz + 1 pt	70% OB	38	44	63
8. Ginstar + Agridex	6 oz + 1 pt	15% OB			
B. Ginstar + Finish + Agridex	8 oz + 20 oz + 1 pt	70% OB	35	45	64
9. Untreated	---		34	39	58

Defoliation Study in Pima Cotton - 3

UCCE--Tulare/Kings Co.--WSREC—2008

Steve Wright, Bob Hutmacher, Tulio Macedo, Dan Munk, Lalo Banuelos, Jon Wrobles,
Mark Keeley, Matt Mills, Craig Yancy, Tony Garcia, Ed Scott, Merf Solorio,
Carter Lovelady, Marlee Tollison, James Simonich, & WSREC Staff

The trial was conducted at the Westside Research Center in Five Points. This field was planted with PhytoGen 830 on March 2008 with seed rate of 17 lbs/A. The field was irrigated three times using pressure bomb readings of 18-20 bars to better manage plant vigor. The plot size was 4-40" rows x 65', 3 replications, with a volume of 15 gpa, pressure of 40 psi, speed of 3.5 mph and 8002 flat fan nozzles.

The first application was applied on October 15, 2008, using a High Clearance Spider sprayer when the cotton was at 10-20 percent open boll. The temperature was 78°F and wind factor of 0-3 mph.

The last application was applied on November 4, 2008, using a High Clearance Spider when the cotton was at 60-70 percent open boll. The temperature was 75°F with wind factor of 0-3 mph.

Defoliation, desiccation, and open boll percentages were visually recorded at 7-10 days after treatment (DAT). No terminal or basal regrowth evaluations were taken.

At 7-DAT, for defoliation, treatment 14 (Def 2 pt + Prep 2 pt + Integrate 1 pt + Agridex 1 pt) had the lowest rating at 30 percent and treatment 6 (Ginstar 10 oz + Finish 20 oz + Agridex 1 pt) had the highest ratings at 43 percent (Table 1).

At 14-DAT, for defoliation, treatment 9 (Adios 6 oz + CottonQuik 3 pt + Agridex 1 pt) had the lowest rating with 28 percent and treatment 6 (Ginstar 10 oz + Finish 20 oz + Agridex 1 pt) had the highest rating with 45 percent (Table 1). For desiccation, treatment 9 (Adios 6 oz + CottonQuik 3 pt + Agridex 1 pt) had the lowest rating with 27 and treatment 4 (ET 2 floz + Ginstar 6 floz + CottonQuik 3 pt + Agridex 1 pt) had the highest rating with 53 percent (Table 2). For open boll, treatment 6 (Ginstar 10 oz + Finish 20 oz + Agridex 1 pt) had the highest rating with 63 percent (Table 3).

At 21-DAT, for defoliation, treatment 4 (ET 2 floz + Ginstar 6 floz + CottonQuik 3 pt + Agridex 1 pt) followed by ET 2.75 floz + Gramoxone Inteon 16 floz + Induce 1% v/v) showed the lowest ratings with 47 percent and treatment 7 (Ginstar 13 oz + Finish 20 oz + Agridex 1 pt followed by Gramoxone Inteon 16 floz + Defol7 1.6 qt + Induce 0.25% v/v) had the highest with 58 percent (Table 1). For desiccation, treatment 12 (Prep 2 pt + Def 2 pt + Gramoxone Inteon 8 oz + Induce 1 pt followed by Gramoxone Inteon 16 floz + Defol7 1.6 pt + Induce 0.25% v/v) had the lowest rating with 40 percent and treatment 4 (ET 2 floz + Ginstar 6 floz + CottonQuik 3 pt + Agridex 1 pt followed by ET 2.75 floz + Gramoxone Inteon 16 floz + Induce 1% v/v) had the highest ratings with 67 (Table 2). For open boll, treatments 7 (Ginstar 13 oz + Finish 20 oz + Agridex 1 pt followed by Gramoxone Inteon 16 floz + Defol7 1.6 qt + Induce 0.25% v/v) and treatment 10 (Adios 10 oz + Prep 2 pt + Agridex 1 pt followed by Gramoxone Inteon 16 floz + Defol7 1.6 qt + 0.25% v/v) had the highest ratings at 75 percent (Table 3).

Table 1.

Percent Defoliation					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. ET + Prep + Agridex B. ET + Agridex	2 floz + 2 pts + 1pt 2 floz + 1 pt	15% OB 70% OB	37	42	53
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 1.2 floz + 2 pts + 1 pt 2 floz + 1.2 floz + 1 pt	15% OB 70% OB	38	42	52
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 2.4 floz + 2 pts + 1 pt 2 floz + 2.4 floz + 1 pt	15% OB 70% OB	40	43	53
4. ET + Ginstar + CottonQuik + Agridex B. ET + Ginstar + CottonQuik + Agridex	2 floz + 6 oz + 3 pt + 1pt 2.75 floz + 16 floz + 0.25% v/v	15% OB 70% OB	35	35	47
5. Ginstar + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 floz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	37	38	55
6. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 20 oz + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	43	45	52
7. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 10 oz + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	35	40	58
8. Ginstar + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	8 oz + 5 oz + 1 pt 16 oz + 1.6 qts + 0.25% v/v	15% OB 70% OB	32	37	52
9. Adios + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 oz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	22	28	48
10. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 2 pts + 1 pt 16 floz + 1.6 qts + 0.25%v/v	15% OB 70% OB	32	38	53
11. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 2 pts + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	32	35	55
12. Prep + Def + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	2 pt + 2pt + 8 oz + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	32	37	50
13. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6 oz + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	28	37	50
14. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2 pts + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	30	35	48
15. Untreated	---		18	18	23

Table 2.

Percent Desiccation					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. ET + Prep + Agridex B. ET + Agridex	2 floz + 2 pts + 1pt 2 floz + 1 pt	15% OB 70% OB	35	40	42
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 1.2 floz + 2 pts + 1 pt 2 floz + 1.2 floz + 1 pt	15% OB 70% OB	38	45	53
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 2.4 floz + 2 pts + 1 pt 2 floz + 2.4 floz + 1 pt	15% OB 70% OB	40	45	43
4. ET + Ginstar + CottonQuik + Agridex B. ET + Ginstar + CottonQuik + Agridex	2 floz + 6 oz + 3 pt + 1pt 2.75 floz + 16 floz + 0.25% v/v	15% OB 70% OB	40	53	67
5. Ginstar + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 floz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	28	32	55
6. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 20 oz + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	37	42	58
7. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 10 oz + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	32	43	55
8. Ginstar + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	8 oz + 5 oz + 1 pt 16 oz + 1.6 qts + 0.25% v/v	15% OB 70% OB	22	32	48
9. Adios + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 oz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	12	27	45
10. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 2 pts + 1 pt 16 floz + 1.6 qts + 0.25%v/v	15% OB 70% OB	25	40	52
11. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 2 pts + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	27	38	47
12. Prep + Def + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	2 pt + 2pt + 8 oz + 1pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	25	40	52
13. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6 oz + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	23	35	42
14. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2 pts + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	18	32	45
15. Untreated	---		8	8	10

Table 3.

Percent Open Boll					
Treatments	Rates/A	Timing	21-Oct	28-Oct	4-Nov
			7-DAT	14-DAT	21-DAT
1. ET + Prep + Agridex B. ET + Agridex	2 floz + 2 pts + 1 pt 2 floz + 1 pt	15% OB 70% OB	52	58	73
2. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 1.2 floz + 2 pts + 1 pt 2 floz + 1.2 floz + 1 pt	15% OB 70% OB	50	62	73
3. ET + CT-301 + Prep + Agridex B. ET + CT-301 + Agridex	2 floz + 2.4 floz + 2 pts + 1 pt 2 floz + 2.4 floz + 1 pt	15% OB 70% OB	48	53	72
4. ET + Ginstar + CottonQuik + Agridex B. ET + Ginstar + CottonQuik + Agridex	2 floz + 6 oz + 3 pt + 1 pt 2.75 floz + 16 floz + 0.25% v/v	15% OB 70% OB	50	60	77
5. Ginstar + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 floz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	50	60	73
6. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 20 oz + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	53	63	72
7. Ginstar + Finish + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 10 oz + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	48	58	75
8. Ginstar + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	8 oz + 5 oz + 1 pt 16 oz + 1.6 qts + 0.25% v/v	15% OB 70% OB	48	58	68
9. Adios + CottonQuik + Agridex B. Gramoxone Inteon + Defol 7 + Induce	6 oz + 3 pt + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	48	58	70
10. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	10 oz + 2 pts + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	48	60	75
11. Adios + Prep + Agridex B. Gramoxone Inteon + Defol 7 + Induce	13 oz + 2 pts + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	50	57	72
12. Prep + Def + Gramoxone Inteon + Induce B. Gramoxone Inteon + Defol 7 + Induce	2 pt + 2pt + 8 oz + 1 pt 16 floz + 1.6 qts + 0.25% v/v	15% OB 70% OB	43	52	72
13. Ginstar + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	6 oz + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	48	57	72
14. Def + Prep + Integrate + Agridex B. Defol 7 + Gramoxone Inteon + Induce	2 pts + 2 pts + 1 pt + 1 pt 1.6 qts + 16 oz + 1 pt	15% OB 70% OB	48	60	73
15. Untreated	---		48	48	60