

Williamson County Result Demonstration Report



COTTON HARVEST AID EVALUATION

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SUMMARY:

Thirty harvest aid treatments were applied on August 2, 2005 to cotton just west of Thrall. Treatments containing Ginstar generally provided better overall defoliation for the cost. Many other treatments did very well also, but most were slower in their performance which was a function of the relatively cooler than normal weather that persisted for the week following the initiation of the trial. Also, the same treatments did not exhibit regrowth through 10 DAT (days after treatment) as did the desiccant treatments.

OBJECTIVE:

The effectiveness of cotton harvest aids vary from season to season and even within a season based on various environmental factors. The purpose of this study was to evaluate the performance/economics of thirty potential harvest aid treatments under early harvest-season environmental conditions.

MATERIALS & METHODS:

Treatments were applied on August 2, 2005 to a field of DP 444BG/RR that was planted on April 2. The cotton ranged between 75-85% open at the time of application. Total fertility

was 84-28-0-8. The field was located on Hwy. 79 about 1/4 mile west of CR 421. The cotton was on 38" rows and plots were 4 rows wide and approximately 150 ft. in length. Treatments were applied with a self-propelled sprayer operating at 3 mph. Two 11002 nozzles per row were operated at 50 psi delivering 11 gallons per acre.

RESULTS AND DISCUSSION:

A list of all of the harvest aid treatments applied for this evaluation and approximate retail cost are listed in Table 1. Ginstar @ 3 oz/acre provided the highest defoliation rating of all the treatments at 7 DAT (days after treatment) with a rating of 88%. Another surprise was from Gramoxone Max @ 6 oz that provided 72 % defoliation and 20% desiccation at 7 DAT. Besides the untreated control, the Dropp SC @ 2.4 and 3.2 oz/ac had the lowest percent defoliation at 7 DAT at 60%.

The evening the treatments were applied, a relatively strong cool front blew into the region causing morning low temperatures to drop to around 60° F for 6 days and the daily high temperatures were in the 80s compared to upper 90s which is typical for that time of the year. As a result, many of the treatments that are more affected by cool weather, did not perform as usual for that time of the year, such as Dropp. However, one product, Ginstar, which is less affected by temperature performed well. In addition, the treatments which included Aim or ET performed very well compared to what was observed last year.

It is worth noting that at 10 DAT, some of the products such as Dropp SC, Ginstar and Ginstar plus CottonQuick treatments showed very high levels of defoliation.

From an economic analysis viewpoint, the Ginstar @ 3 oz/ac plus Crop Oil Concentrate @ 16 oz provided very good defoliation at 7 DAT and had a cost of only \$5.35 per acre. On the high end of the treatment cost range was the Dropp SC @ 1.6 oz/ac and CottonQuick @ 48 oz/ac which had a price of \$16.34 per acre. It performed very well at dropping leaves and providing some desiccation, but it was a little slower than the Ginstar @ 3 oz/ac.

ACKNOWLEDGMENTS:

Appreciation is expressed to Mr. Billy Carlson for his patience in allowing us to put out this trial. I also want to thank Dr. Robert Lemon, and his assistant, Joel Pigg, for there support of this trial. Also, thanks to Bayer CropScience, and Syngenta and the local ag distributors for their participation in this program.

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Cost of Products in Harvest Aid Trial. Billy Carlson, Williamson Co., TX. 2005.

| TRT# | Treatment | Rate | Product Cost | Treatment Cost |
|------|-----------------------------|--------------------------------|----------------------------|----------------|
| 1 | Dropp SC | 1.6 oz/A | \$4.40 | \$4.40 |
| 2 | Dropp SC (8 rows) | 3.2 oz/A | \$8.80 | \$8.80 |
| 3 | Dropp SC Ginstar | 1.6 oz/A 3 oz/A | \$4.40 \$5.07 | \$9.47 |
| 4 | Dropp SC Finish 6 Pro | 1.6 oz./A 16 oz/A | \$4.40 \$9.60 | \$14.00 |
| 5 | Dropp SC Def | 1.6 oz/A 12 oz/A | \$4.40 \$5.28 | \$9.68 |
| 6 | Dropp SC ET COC | 1.6 oz/A 1.5 oz/A 1% V/V | \$4.40 N/A \$0.84 | N/A |
| 7 | Dropp SC Aim NIS | 1.6 oz/A 1 oz/A 0.25%V/V | \$4.40 \$1.45 \$0.53 | \$6.38 |
| 8 | Dropp SC Blizzard COC | 1.6 oz/A N/A 1% V/V | \$4.40 N/A \$0.84 | N/A |
| 9 | Resource Prep COC | 6 oz/A 21 oz/A 1% V/V | \$7.74 \$7.14 \$0.84 | \$15.98 |
| 10 | Ginstar | 6 oz/A | \$10.14 | \$10.14 |
| 11 | Ginstar Finish 6 Pro | 3 oz/A 16 oz/A | \$5.07 \$9.60 | \$14.67 |
| 12 | Untreated | | | |
| 13 | Def Finish 6 Pro | 6 oz/A 12 oz/A | \$2.64 \$7.20 | \$9.84 |
| 14 | Ginstar Prep | 3 oz/A 16 oz/A | \$5.07 \$5.44 | \$10.51 |
| 15 | Def Prep | 8 oz/A 16 oz/A | \$3.52 \$5.44 | \$8.96 |
| 16 | Freefall CottonQuik | 0.1 LB/A 48 oz/A | \$6.44 \$9.00 | \$15.44 |
| 17 | Dropp SC ESO (Hasten) | 1.6 oz/A 8 oz/A | \$4.40 \$1.65 | \$6.05 |
| 18 | Dropp SC Silicon | 1.6 oz/A 4 oz/A | \$4.40 \$0.65 | \$5.05 |
| 19 | Gramoxone Max NIS | 6 oz/A 0.25 % V/V | \$1.98 \$0.53 | \$2.51 |

| | | | | |
|----|-----------------------------|---|----------------------------|---------|
| 20 | Gramoxone Max COC | 6 oz/A 1% V/V | \$1.98 \$0.84 | \$2.82 |
| 21 | Gramoxone Max NIS | 4 oz/A 0.25% V/V | \$1.32 \$0.53 | \$1.85 |
| 22 | Gramoxone Max COC | 4 oz/A 1% V/V | \$1.32 \$0.85 | \$2.17 |
| 23 | Untreated | | N/A | |
| 24 | Gramoxone Max NIS AMS | 16 oz/A 0.25 % V/V 17 lbs/100 gal | \$5.28 \$0.53 \$3.74 | \$9.55 |
| 25 | Gramoxone Max NIS AMS | 21 oz/A 0.25 % V/V 17 lbs/100 gal | \$6.93 \$0.53 \$3.74 | \$11.20 |
| 26 | AIM NIS | 1 oz/A 0.25% V/V | \$1.45 \$0.53 | \$1.98 |
| 27 | Dropp SC Ginstar | 0.9 oz/A 4.2 oz/A | \$2.48 \$7.10 | \$9.58 |
| 28 | Ginstar NIS AMS | 3 oz/A 0.25% V/V 17 lb/100 gal | \$5.07 \$0.53 \$3.74 | \$9.34 |
| 29 | Dropp SC Def | 1.6 oz/A 5.3 oz/A | \$4.40 \$2.35 | \$6.75 |
| 30 | Dropp SC Prep COC | 1.6 oz/A 16 oz/A 1 % V/V | \$4.40 \$5.44 \$0.85 | \$10.69 |

Table 2. Percent Defoliation and Desiccation at 7 DAT. Billy Carlson, Williamson Co., TX. 2005

| Treatment | Rate | % Defoliation n 7 DAT | % Dessication 7 DAT | Terminal Regrowth % 7 DAT | Basal Regrowth % 7 DAT |
|-----------------------------|----------------------------------|--|--------------------------------|--|---------------------------------------|
| Dropp SC | 1.6 oz/A | 20 | 0 | 60 | 25 |
| Dropp SC | 3.2 oz/A | 20 | 0 | 60 | 25 |
| Dropp SC Ginstar | 1.6 oz/A 4.3 oz/A | 80 | 0 | 60 | 5 |
| Dropp SC Finish 6 Pro | 1.6 oz/A 16 oz/A | 30 | 0 | 60 | 10 |
| Dropp SC Def | 1.6 oz/A 12 oz/A | 80 | 1 | 40 | 5 |
| Dropp SC ET COC | 1.6 oz/A 1.5 oz/A 1 % V/V | 85 | 1 | 60 | 10 |
| Dropp SC AIM NIS | 1.6 oz/A 1 oz/A 0.25 % V/V | 50 | 0 | 60 | 15 |
| Dropp SC Blizzard COC | 1.6 oz/A 0.5 oz/A 1 % V/V | 80 | 1 | 60 | 10 |
| Resource Prep COC | 6 oz/A 21 oz/A 1 % V/V | 50 | 1 | 60 | 20 |
| Ginstar | 6 oz/A | 88 | 2 | 20 | 2 |
| Ginstar Finish 6 Pro | 3 oz/A 16 oz/A | 70 | 0 | 50 | 15 |
| Untreated | | 5 | 0 | 0 | 0 |
| Def Finish 6 Pro | 8 oz/A 16 oz/A | 55 | 0 | 60 | 25 |
| Ginstar Prep | 3 oz/A 16 oz/A | 75 | 0 | 50 | 25 |
| Def Prep | 8 oz/A 16 oz/A | 60 | 0 | 60 | 15 |
| Freefall CottonQuik | 0.1 lb/A 48 oz/A | 50 | 0 | 50 | 15 |

| | | | | | |
|-----------------------------|--|----|---|----|----|
| Dropp SC ESO | 1.6 oz/A 8 oz/A | 60 | 0 | 30 | 5 |
| Dropp SC Silicon | 1.6 oz/A 4 oz/A | 2 | 0 | 60 | 5 |
| Gramoxone Max NIS | 6 oz/A 0.25% V/V | 40 | 0 | 60 | 5 |
| Gramoxone Max COC | 6 oz/A 1 % V/V | 40 | 0 | 60 | 5 |
| Gramoxone Max NIS | 4 oz/A 0.25 % V/V | 35 | 0 | 60 | 5 |
| Gramoxone Max COC | 4 oz/A 1 % V/V | 35 | 0 | 60 | 2 |
| Untreated | | 5 | 0 | 0 | 0 |
| Gramoxone Max NIS AMS | 16 oz/A 0.25 % V/V 17 lb/100 gal | 60 | 1 | 60 | 15 |
| Gramoxone Max NIS AMS | 21 oz/A 0.25 % V/V 17 lb/100 gal | 50 | 1 | 60 | 10 |
| AIM NIS | 1 oz/A 0.25 % V/V | 50 | 0 | 60 | 10 |
| Dropp SC Ginstar | 0.9 oz/A 4.2 oz/A | 85 | 0 | 30 | 5 |
| Ginstar NIS AMS | 3 oz/A 0.25 % V/V 17 lb/100 gal | 80 | 0 | 30 | 10 |
| Dropp SC Def | 1.6 oz/A 5.3 oz/A | 50 | 1 | 40 | 2 |
| Dropp SC Prep COC | 1.6 oz/A 16 oz/A 1 % V/V | 40 | 0 | 4 | 10 |

Other Harvest Aid Product Evaluation Studies

The following sets of data were obtained from the various harvest aid studies conducted at the Stiles Farm Foundation in 2004 with Dr. Robert Lemon, Cotton Specialist, Texas Cooperative Extension.

Variety: Deltapine 424 BG2RR Trial Type: Randomized Complete Block

Plot Width: 4 rows X 38" Plot Length: 40 feet

Reps: 3

Planting Date: April 17, 2004

Percent Open at Application: 75%

Nodes Above Cracked Boll: 5

Plant Height: 38 inches

HU From Application to 7DAT: 166

HU From Application to 14DAT: 289

Rainfall 7 days prior to and after application 2.63 inches

| | <u>Initial Application</u> | <u>Sequential (follow-by) (fb) Application</u> |
|------------------------------|----------------------------|--|
| Application Date | 8/25/2004 | 8/31/2004 |
| Time of Day | 9:30 a.m. | 1:00 p.m. |
| Application Timing | Preharvest | Preharvest |
| Application Type | Broadcast | Broadcast |
| Air Temperature (°F) | 83°F | 88°F |
| % Relative Humidity | 63% | 33% |
| Wind/Direction | ESE at 9 MPH | NE at 10 MPH |
| Crop Stage | Preharvest | Preharvest |
| Application Equipment | Wildcat | Wildcat |
| Operating Pressure | 45 | 45 |
| Nozzle Types | Turbo TeeJet 11002 | Turbo TeeJet 11002 |
| Nozzle Spacing | 20 inches | 20 inches |
| Nozzles per Row | 3 | 3 |
| Boom Length (in.) | 160 inches | 160 inches |
| Boom Height (in.) | 48" | 48" |
| Ground Speed (MPH) | 4 MPH | 4 MPH |
| Spray Volume (GPA) | 11 GPA | 11 GPA |

TABLE 3.

| Treatment | Rate | % Defoliation 7 DAT | % Dessication 7 DAT | % Defoliation 14 DAT | % Dessication 14 DAT |
|-----------------------------|---------------------------------|------------------------|------------------------|-------------------------|-------------------------|
| Dropp SC | 1.6 oz/A | 60 | 0 | 60 | 0 |
| Dropp SC | 2.13 oz/A | 75 | 0 | 80 | 0 |
| Dropp SC Ginstar | 1.6 oz/A 4 oz/A | 75 | 12 | 88 | 3 |
| Dropp SC Finish 6 Pro | 1.6 oz/A 16 oz/A | 85 | 3 | 88 | 1 |
| Dropp SC Prep | 1.6 oz/A 16 oz/A | 80 | 0 | 80 | 1 |
| Dropp SC Def | 1.6 oz/A 12 oz/A | 80 | 8 | 88 | 3 |
| Dropp SC ET COC | 1.6 oz/A 1.5 oz/A 1 % V/V | 60 | 15 | 85 | 5 |
| Dropp SC Aim NIS | 1.6 oz/A 1oz/A 0.25 % V/V | 55 | 15 | 75 | 5 |
| Dropp SC Blizzard COC | 1.6 oz/A 0.5 oz/A 1 % V/V | 40 | 20 | 70 | 15 |
| Resource Prep COC | 6 oz/A 21 oz/A 1 % V/v | 75 | 7 | 75 | 5 |
| Untreated | | 5 | 0 | 5 | 0 |
| Ginstar | 4 oz/A | 78 | 2 | 80 | 3 |
| Ginstar | 6 oz/A | 75 | 10 | 83 | 8 |
| Ginstar COC | 4 oz/A 1 % V/V | 70 | 0 | 78 | 3 |
| Ginstar Finish 6 Pro | 4 oz/A 16 oz/A | 80 | 7 | 82 | 10 |
| Ginstar Prep | 4 oz/A 16 oz/A | 75 | 12 | 78 | 10 |
| Freefall CottonQuik | 0.1 lb/A 48 oz/A | 75 | 12 | 77 | 4 |
| Gramoxone Max NIS | 4 oz/A 0.25 % V/V | 60 | 2 | 60 | 0 |
| Gramoxone Max NIS | 8 oz/A 0.25% V/V | 60 | 5 | 60 | 1 |
| Gramoxone Max NIS | 16 oz/A 0.25 % V/V | 70 | 10 | 70 | 18 |
| Gramoxone Max NIS | 4 oz/A 0.25 % V/V | | | | |