



Cotton Stalk Herbicide Trial 2022

Sponsor Name: Cotton Incorporated

Sponsor Award Number: 20-550TX

PI: Danielle Sekula – Texas A&M AgriLife Extension

Co pi: Josh McGinty– Texas A&M AgriLife Extension

Hidalgo County, TX

Texas AgriScience, LLC. In Lyford, TX

Crop: PHY 400 Cotton, irrigated

Location: Lyford, TX

Plot Size: 40 ft. x 2 rows

Experimental Design: Randomized Complete Block; 4 Replications.

Information:

- Cotton stalks were shredded September 7th and we had 3 weeks of regrowth with 2 rains in between totaling 2 inches that allowed for some very large regrowth, double the amount of regrowth we normally try to spray for.
- September 26th we went and marked all plots and did pre-counts. All cotton stalks were evaluated and counted per plot. Total regrowth and hostable cotton stalk numbers were taken. **Hostable cotton stalks were considered as any cotton stalks that had pin head squares that were still green. Regrowth was any green growth on the cotton stalk that was considered still alive.** At this time all regrowth on the stalks were hostable as everything had pin head squares, many stalks had leaves 3 to 4 inches or greater in diameter. I have 8 treatments and 1 nontreated control. The trial was replicated 4 times totaling 36 plots. My plots were 2 rows by 40ft.
- First spray application was applied on September 27 from 10:30 am – 11:30 am with wind speeds of 6-8 mph, temperature at 80° F. All 8 treatments were applied successfully at 15 GPA at a walking speed of 3 mph. Treatments were on the plots for 4 hours when it rained at 3pm that day 0.67 inches.
- Counts were taken at 7, 14, 21, 28 and 38 days respectively after first spray application.

- Second spray application was 12 days later October 6th from 9:34 am – 9:48 am with wind speeds at 4 mph at 74° F. Only treatments 7 & 8 were treated with a second spray application, and these 2 treatments were applied successfully at 15 GPA at a walking speed of 3 mph. We received a 0.04 inch of rain the following day on October 7th.
- Counts were taken at 7, 14, 21, 28, and 38 days respectively after second spray application to see a real separation between the spray treatments.
- Total rainfall received during the trial from start of October to last count in early November totaled 2.29 inches. This rainfall helped us to see and separate out which treatments gave good control and least amount of regrowth/ hostable cotton.

Evaluation: Evaluated stalks using (SAS 9.4 using Anova, lsd of .05).

Results: Herbicide Spray treatments used:

	Treatment	Prices for trt
1	Duplosan @ 32 fl oz/a + COC @ 1%	\$12.96
2	Duplosan @ 24 fl oz/a + Reviton @ 1 fl oz/a + MSO @ 1%	\$15.50
3	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1%	\$13.50
4	Engenia @ 25.6 fl oz/a + COC @ 1%	\$20.64
5	Engenia @ 19.2 fl oz/a + Reviton @ 1 fl oz/a + MOS @ 1%	\$21.26
6	Engenia @ 19.2 fl oz/a + Freefall @ 3,2 fl oz/a + COC @ 1%	\$19.26
7	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Duplosan @ 24 fl oz/a + COC @ 1%	\$23.26
8	Engenia @ 19.2 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Engenia @ 19.2 fl oz/a + COC @ 1%	\$34.78
9	Nontreated Control	\$32.50

*MSO stands for Methylated Seed Oil

*COC stands for Crop Oil Concentrate

***fb (followed by)**

(**Note prices for treatments were “ballpark” figures given by local chemical reps in the area and are not the exact final price but give a good idea of prices per treatment overall. Also Nontreated Control was calculated based on the weekly fine totaled for untreated cotton stalks established by TDA & the TBWEP).

- Treatments 2 & 7 proved to be the best treatments with no regrowth (0c) and no hostable (0c) cotton stalks at the very end of the trials on November 4, 2022. Treatment 2 had one spray application made and treatment 7 had two spray applications made. However, between the two treatments, treatment 2 (Duplosan + Reviton + MSO) is considerably cheaper (~\$7.76 less) than treatment 7 (Engenia + COC fb Engenia + COC)
- Treatments 1 & 3, both being Duplosan treatments showed very little regrowth after 38 days after a gradual decline, most importantly they had very few stalks that were hostable with pinhead squares. Both treatments were relatively the cheapest out of all treatments at ~\$13.00
- Treatment 5 showed promise as well with very little regrowth and hardly any at all hostable at (1.75c). However, this trt 5 was relatively expensive at \$21.26 and that's just one application.
- Treatment 2 & 4 both tested new product Reviton. And both gave excellent control for 2022, as well as the year before 2021 when I first tested it, proving that the product Reviton works very well.
- The information gathered from these trials will help all cotton growers but definitely the growers in the LRGV that grow Phytogen cotton that is resistant to 2-4D.

- Posted online under "Important Resources in IPM" at:
<https://southtexas.tamu.edu/programs-and-services/ipm/>

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Cotton Stalks with Regrowth Herbicide trial 2022

	Treatment	Mean # cotton stalks with Regrowth (any green growth)						Prices for trt
		26-Sep	4-Oct	11-Oct	17-Oct	25-Oct	4-Nov	
		Precounts	7 DAT	14 DAT	21 DAT	28 DAT	38 DAT	
1	Duplosan @ 32 fl oz/a + COC @ 1%	106.50	92.75	64.25	28.00	17.50	13 c	\$12.96
2	Duplosan @ 24 fl oz/a + Reviton @ 1 fl oz/a + MSO @ 1%	104.00	0.00	0.00	0.00	0.00	0 c	\$15.50
3	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1%	112.00	69.25	31.00	13.50	8.50	5 c	\$13.50
4	Engenia @ 25.6 fl oz/a + COC @ 1%	105.00	89.00	86.50	87.00	87.00	61.75 b	\$20.64
5	Engenia @ 19.2 fl oz/a + Reviton @ 1 fl oz/a + MOS @ 1%	104.75	6.75	5.00	3.00	3.75	1.75 c	\$21.26
6	Engenia @ 19.2 fl oz/a + Freefall @ 3,2 fl oz/a + COC @ 1%	102.25	94.25	86.25	89.50	88.00	93.25 a	\$19.26
7	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Duplosan @ 24 fl oz/a + COC @ 1%	108.75	59.00	8.75	0.75	0.00	0 c	\$23.26
8	Engenia @ 19.2 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Engenia @ 19.2 fl oz/a + COC @ 1%	114.50	104.75	98.50	87.50	74.25	63 b	\$34.78
9	Nontreated Control	108.50	108.50	108.50	108.50	108.50	108.5 a	\$32.50
	* fb = second spray treatment sprayed on Oct 6, 9 days after first treatment was done							

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*Treatments 1-6 only received one spray treatment

*fb (followed by) means treatments 7 & 8 had first spray treatment followed by (fb) a second spray treatment 9 days later

*First spray treatment occurred on September 27th and second spray treatment occurred on October 6th.

Means within a column followed by the same letter are not significantly different (P>0.05; PROC ANOVA; Mean comparison by LSD [SAS 9.4])

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Hostable Cotton Stalks Herbicide trial 2022

	Treatment	Mean # cotton stalks with Hostable pinhead squares						Prices for trt
		26-Sep	4-Oct	11-Oct	17-Oct	25-Oct	4-Nov	
		Precounts	7 DAT	14 DAT	21 DAT	28 DAT	38 DAT	
1	Duplosan @ 32 fl oz/a + COC @ 1%	106.50	6.25	4.00	7.50	8.25	9.25 c	\$12.96
2	Duplosan @ 24 fl oz/a + Reviton @ 1 fl oz/a + MSO @ 1%	104.00	0.00	0.00	0.00	0.00	0 c	\$15.50
3	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1%	112.00	0.25	0.25	1.75	2.25	3.75 c	\$13.50
4	Engenia @ 25.6 fl oz/a + COC @ 1%	105.00	3.50	26.00	68.75	87.00	61.75 b	\$20.64
5	Engenia @ 19.2 fl oz/a + Reviton @ 1 fl oz/a + MOS @ 1%	104.75	1.25	1.00	2.00	3.00	1.75 c	\$21.26
6	Engenia @ 19.2 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1%	102.25	0.00	0.00	89.50	88.00	93.25 a	\$19.26
7	Duplosan @ 24 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Duplosan @ 24 fl oz/a + COC @ 1%	108.75	0.25	0.00	0.00	0.00	0 c	\$23.26
8	Engenia @ 19.2 fl oz/a + Freefall @ 3.2 fl oz/a + COC @ 1% fb Engenia @ 19.2 fl oz/a + COC @ 1%	114.50	0.25	0.00	0.00	0.00	0.5 c	\$34.78
9	Nontreated Control	108.50	108.50	108.50	108.50	108.50	108.5 a	\$32.50
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