



Result Demonstration/Applied Research Report

2006 Tom Green County
Stance Plant Growth Regulator Test
Cooperators: John and Doug Wilde

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Summary

This test was established to determine what rate of STANCE needs to be applied to irrigated cotton to control growth in the cotton plant. The protocol for the test called for three applications of stance to be made at 2.0, 2.5 and 3.0 ounces per acre. All of the rates used in this test resulted in plant stunting and reduced yields. FiberMax 9063 was the variety of cotton that was sprayed in this test and it was not a vigorous growing cotton plant like many of the picker varieties grown in the Concho Valley of Texas. Additional test work with STANCE will need to be conducted using a more aggressive growing variety.

Problem

STANCE has multiple modes of action. There are two major hormones that result in the growth of a cotton plant -auxin and gibberellic acid. STANCE inhibits auxin transport and gibberellic acid synthesis. This dual mode of action is new to cotton plant regulation and is why STANCE works differently and at a standard rate compared to other plant growth regulators on the market today.

Objective

Through the use of a field test: 1) determine the effectiveness of herbicides at controlling the weed, 2) provide producers the opportunity of observing how effectively the herbicides control the weed, and 3) determine the economic feasibility of applying the herbicides for weed control.

Materials and Methods

Cooperating County Producers: John and Doug Wilde
 Location: 3 mile southeast of San Angelo, Texas

Application Information:

Date Applied:	June 26, 2006	July 5, 2006	July 18, 2006
Time of Application:	1:15 p.m. - 2:00 p.m.	8:30 a.m. - 9:30 a.m.	11:00 to 11:45 a.m.
Wind Speed:	10 to 11 miles per hour	5 to 6 miles per hour	4 to 5 miles per hour
Wind Direction:	East by Northeast	Northeast	Southeast
Air Temperature:	87 to 89 ⁰ Fahrenheit	74 to 78 ⁰ Fahrenheit	94 to 96 ⁰ Fahrenheit
Relative Humidity:	36 to 42 %	70 to 82%	29 to 33%
Spray Volume	17.0 gallons per acre	17.0 gallons per acre	16.0 gallons per acre
Pressure:	32 p.s.i.	32 p.s.i.	32 p.s.i.
Application Device:	Self propelled sprayer	Self propelled sprayer	Self propelled sprayer
Ground Speed:	3.0 miles per hour	3.0 miles per hour	3.0 miles per hour
Nozzle:	11002 Air Induction Flat Fan on 20 inch center.	11002 Air Induction Flat Fan on 20 inch center.	11002 Air Induction Flat Fan on 20 inch center.
Boom Height:	25 inches	30 inches	35 inches
Cotton Plant:	matchhead stage	½ to 2/3 grown squares	Early bloom stage also 5 nodes above white flower
All plots:			
Plot Size:	13.33 feet wide by 50 feet long		
Test Design:	randomized complete block design with three replications		

Results and Discussion

This test was established to determine what rate of STANCE needs to be applied to irrigated cotton to control growth in the cotton plant. The protocol for the test called for three applications of stance to be made at 2.0, 2.5 and 3.0 ounces per acre. All of the rates used in this test resulted in plant stunting and reduced yields. FiberMax 9063 was the variety of cotton that was sprayed in this test and it was not a vigorous growing cotton plant like many of the picker varieties grown in the Concho Valley of Texas. The range of plant height reduction was 1.1 to 6.0 inches. In this test it would have been better not to apply any plant growth regulators during the growing season. Additional test work with STANCE will need to be conducted using a more aggressive growing variety.

On September 14, five plants from each plot was plant mapped and a total of 15 plants per treatment is summarized in the table below.

Average plant from 15 plants mapped	Treatment Number						
	1	2	3	4	5	6	7
Average Plant Height (inches)	23.7	23.3	22.3	21.2	27.2	26.1	25.4
Number of Vegetative Nodes	6.1	6.5	6.7	7.3	6.8	5.9	6.5
Number of Reproductive Nodes	13.5	13.9	13.2	12.3	14.5	14.5	14.3
Average Internode Length (inches)	1.2	1.1	1.1	1.1	1.3	1.3	1.3
Nodes Above White Flower	3.0	1.0	3.0	2.0	2.0	2.0	3.0
Nodes Above Last Open Bolls	6	9	6	6	7	7	5
% Fruit Retention on Position 1 Bolls	58.1	48.3	45.5	49.2	54.4	52.3	51.1
% Fruit Retention on Position 2 Bolls	60.2	56.0	47.8	40.0	48.7	54.2	50.8
% Maturity	87.2	87.5	63.7	78.7	81.1	86.0	79.0
Number of Bolls	366.4	376.3	375.2	369.3	375.4	373.0	373.8
Number of Bolls Per Foot of Row	20.1	18.7	21.2	20.8	24.7	20.1	23.8
Estimated Yield	715.7	648.3	739.6	734.8	861.0	701.3	831.9

TRT1- 4 ounces of Pentia applied June 26, July 5, and July 18	\$6.09
TRT2- 2 ounces of Stance applied June 26, July 5, and July 18	\$8.46
TRT3- 2.5 ounces of Stance applied June 26, July 5, and July 18	\$10.59
TRT4- 3 ounces of Stance applied June 26, July 5, and July 18	\$12.69
TRT5 - Check	\$0.00
TRT6- 3 ounces of Stance applied July 18	\$4.23
TRT7- 5 ounces of Stance applied July 18	\$7.05

Acknowledgments

We want to take this opportunity to thank John and Doug Wilde for their help in plot establishment and management.

We would also like to thank Bayer CropScience for providing STANCE and BASF Company for providing the Pentia.

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