



## Result Demonstration/Applied Research Report

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2006 Tom Green County  
Ignite 280 Test  
Cooperator: Stephen Halfmann

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### Summary

This test was established to determine the effectiveness of Ignite 280 herbicide in controlling morningglory. The Liberty Link cotton was planted on June 15 and ten days later the first herbicide application was needed. Ignite is a contact herbicide that can control a high percentage of seedling morningglory if applied correctly. Applications of Ignite 280 were made on June 26, July 18, and September 12 to actively growing and unstressed morningglory that had vines less than 4 inches long. Each application of the herbicide eliminated all morningglory plants that existed and provided a window of opportunity for the cotton to develop with no weed competition. Each rainfall event resulted in additional morningglory germination. The herbicide applied did control the weeds that were growing at the time the application(s) were made. However, reinfestation continued throughout the growing season.

### Problem

In the Rolling Plains of Texas, Ivyleaf Morningglory (*Ipomoea hederacea*) have distinctive purple to blue or white flowers, 3-lobed leaves, and leaves, stems, and petioles with hairs that stick straight out. The characteristic leaves of ivyleaf morningglory help to distinguish it from all of the other morningglories at the 'mature' stage of growth. However, identification of morningglories at the cotyledon stage of growth is much more difficult, and often more important. The cotyledons of ivyleaf morningglory most closely resemble those of Entireleaf Morningglory (*Ipomoea hederacea* var. *integriuscula*) and Tall Morningglory (*Ipomoea purpurea*). However, the cotyledons of tall morningglory are usually more square in outline when compared to the cotyledons of both ivyleaf and entireleaf morningglory. The cotyledons of both ivyleaf and entireleaf morningglory are nearly identical and usually cannot be distinguished until the second true leaf emerges. The seed of morningglory are hard and can remain viable in the soil for more than 20 years. Aggressive control is needed to prevent seed production from occurring.

**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 Producer: Stephen Halfmann  
 Location: 3 mile northeast of San Angelo, Texas

Application Information:

Date Applied:	June 26, 2006	July 18, 2006	September 12, 2006
Time of Application:	9:30 a.m. - 10:30 a.m.	8:30 a.m. - 9:30 a.m.	8:00 a.m. - 9:00 a.m.
Wind Speed:	8 to 10 miles per hour	4 to 7 miles per hour	2 to 4 miles per hour
Wind Direction:	East by Northeast	Southwest	North
Air Temperature:	72 to 76 <sup>0</sup> Fahrenheit	84 to 88 <sup>0</sup> Fahrenheit	68 to 73 <sup>0</sup> Fahrenheit
Relative Humidity:	43 to 47 %	45 to 50%	79 to 91%
Spray Volume	17.0 gallons per acre	16.0 gallons per acre	15.0 gallons per acre
Pressure:	32 p.s.i.	32 p.s.i.	65 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	13.0 miles per hour
Nozzle:	11002 Air Induction Flat Fan on 20 inch center.	11002 Air Induction Flat Fan on 20 inch center.	8004 Flat Fan on 20 inch centers.
Boom Height:	16 inches	20 inches	32 inches
Morningglory:	1 true leaf stage	2 true leaf stage	1 to 4 inch runners
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 the effectiveness of Ignite 280 herbicide in controlling morningglory. The Liberty Link cotton was planted on June 15 and ten days later the first herbicide application was needed. Ignite is a contact herbicide that can control a high percentage of seedling morningglory if applied correctly. Applications of Ignite 280 were made on June 26, July 18, and September 12 to actively growing and unstressed morningglory that had vines less than 4 inches long. Each application of the herbicide eliminated all morningglory plants that existed and provided a window of opportunity for the cotton to develop with no weed competition. Each rainfall event resulted in additional morningglory germination. The herbicide applied did control the weeds that were growing at the time the application(s) were made. However, reinfestation continued throughout the growing season.

On June 26 the test plots were sprayed with two different rates of Ignite 280 and then combined with two different rates of Staple LX for a total of six treatments plus a check plot in each of the three replications. DynaPack surfactant was used in all treatments applied. The test plot was evaluated on July 5 and all plots were weed free except the check plots. By July 18 the plots needed to be sprayed again.

On July 18, the plots sprayed with Staple LX at 1.3 and 1.9 ounces had 70 to 80 percent of the morningglory controlled but the plots had to be sprayed because there were 4 to 6 morningglory per square foot remaining in these plots. Prior to any morningglory blooming the check plots were oversprayed with Ignite 280 at 29 ounces plus Staple LX at 1.9 ounces per acre this prevented any seed from being produced. The number of morningglory plants in the check plots averaged 25 plants per square foot.

All plots were sprayed with the original treatments again on July 18 and the level of control was 100 percent. The field remained weed free until the first part of September when rainfall resulted in another flush of weeds. The plots where Staple LX was applied had significantly less weeds than the plots where Ignite 280 was applied alone. However, too many morningglory still remained and all plots had to be sprayed again on September 12. The cooperater oversprayed the plot with 40 ounces of Ignite 280 and the field should remain clean until the next rain.

Some important practices were used in this test that made the level of control impressive. Weeds were sprayed early and not allowed to stress. More than 15 gallons of water was applied each time resulting in complete coverage of the weeds with Ignite 280 which is a contact herbicide. Moderate air temperatures and desirable relative humidity allowed the herbicide more time to enter the plant.

Rates used ranged from 22 to 40 ounces per acre. The addition of Staple LX resulted in a higher level of morningglory suppression, however, herbicides still needed to be applied because of the high number of weeds that continued to emerge after each rain. The test plot cooperater felt that the 40 ounce rate of Ignite 280 provided him with a wider range of weed control.

Table 1. Data collected from Stephen Halfmann's Morningglory Control Test (Tom Green County, 2006)

Treatment	Cost of Herbicide Per Acre
Check ----->followed by Ignite 280 @ 29 oz. per acre plus 1.9 ounces of Staple LX (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$0.00 \$10.88 \$12.52 <u>\$15.00</u> \$38.40
Ignite 280 @ 22 oz. per acre (June 26)----->followed by Ignite 280 @ 22 oz. per acre (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$8.25 \$8.25 <u>\$15.00</u> \$31.50
Ignite 280 @ 22 oz. per acre plus 1.3 ounces of Staple LX (June 26) ----->followed by Ignite 280 @ 22 oz. per acre plus 1.3 ounces of Staple LX (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$8.25 \$8.57 \$8.25 \$8.57 <u>\$15.00</u> \$48.64
Ignite 280 @ 22 oz. per acre plus 1.9 ounces of Staple LX (June 26) ----->followed by Ignite 280 @ 22 oz. per acre plus 1.9 ounces of Staple LX (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$8.25 \$12.52 \$8.25 \$12.52 <u>\$15.00</u> \$56.54
Ignite 280 @ 29 oz. per acre (June 26)----->followed by Ignite 280 @ 29 oz. per acre (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$10.88 \$10.88 <u>\$15.00</u> \$36.76
Ignite 280 @ 29 oz. per acre plus 1.3 ounces of Staple LX (June 26) ----->followed by Ignite 280 @ 29 oz. per acre plus 1.3 ounces of Staple LX (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$10.88 \$8.57 \$10.88 \$8.57 <u>\$15.00</u> \$53.90
Ignite 280 @ 29 oz. per acre plus 1.9 ounces of Staple LX (June 26) ----->followed by Ignite 280 @ 22 oz. per acre plus 1.9 ounces of Staple LX (July 18) ----->followed by Ignite 280 @ 40 oz. per acre (September 12)	\$10.88 \$12.52 \$10.88 \$12.52 <u>\$15.00</u> \$61.80

### Economics

Weed control from the herbicides applied was impressive. The cost per acre was high enough that producers may have to mark only the areas of the field that need treating and use an aggressive spot treatment program. The Liberty Link program gives producers a useful tool in controlling weeds throughout the season. Since the mode of action for weed control is different than the glyphosate resistant cotton it will help reduce the potential for resistant weeds being produced. Since the weeds were controlled while they were young their impact to the cotton plant development was reduced allowing the producer the opportunity of having income from lint and seed production to help offset the cost of the herbicides applied.

### **Acknowledgments**

We want to take this opportunity to thank Stephen Halfmann for his help in plot establishment and management.

We would also like to thank Bayer CropScience for providing Ignite 280 and DuPont Company for providing the Staple LX.

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