



Applied Research Report

Herbicide Tolerant Cotton Systems

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Summary

A trial was conducted with the purpose of evaluating the weed control of Round Up in Round Up Flex Cotton and Ignite in Liberty Link Cotton. All herbicide applications provided good weed control with the exception of Envoke. The Envoke application was made to weeds that were taller than label recommendations. It is critical to follow all label requirements to achieve the desired weed control with any herbicide. The inclusion of a soil residual herbicide can be important in delaying the need for other herbicides and reducing the chances for herbicide resistance.

Objectives

The objective of this project was to evaluate control of pigweed and barnyard grass in cotton tolerant to Round Up or Ignite.

Materials and Methods

A trial was planted on 5 April 2005 with the purpose of evaluating the weed control of Round Up in Round Up Flex Cotton and Ignite in Liberty Link Cotton. The cotton was planted at a rate of 5.7 seed per foot on 38 inch rows. Plots were 6 rows, 35 feet long. Dual applications were made in a 20 inch band at planting.

Treatments were as follows:

- 1) Dual (10.4 oz/A) and Round Up (4-22 oz/A applications)
- 2) Dual (10.4 oz/A) and Ignite (2-32 oz/A and 1-16 oz/A applications)
- 3) Round Up (4-22 oz/A applications)
- 4) Ignite (2-32 oz/A and 1-16 oz/A applications)
- 5) Dual (10.4 oz/A) and Envoke (0.10 oz/A) at 6th true leaf (TL)
- 6) Dual (10.4 oz/A), Sequence (16 oz/A) at 4 TL and Round Up (22 oz/A Under Hood)

Crop Injury and weed control evaluations were made 7 days after each treatment (DAT).

Results Discussion

Both the Round Up Flex and the ignite weed control systems provided excellent weed control with and without the addition of Dual at planting. The Envoke was made when the cotton had 6 true leaves, but after the weeds had exceeded the label recommended weed height. The Dual, Sequence (Dual and Glyphosate), and Round Up treatment also provided good weed control.

Discussion

The use of a Round Up Flex cotton variety allowed season long application Round Up. This will allow the farmer to determine Round Up applications based on weed height and not crop stage. Two factors will still remain important in this system. First, just because Round Up can control bigger weeds than some other herbicides does not mean that these weeds are not causing yield reductions while they are still alive in the field. Weed control is essential for maintaining higher yields

Second, in order to combat the possibility of weeds gaining tolerance or resistance to Glyphosate, it is important to use alternative modes of action such soil residual herbicides. The addition of these residual herbicides may allow the farmer to delay the Round Up application later into the season. Thereby reducing the number of Round Up applications needed.

The level of control gained by Ignite was due to making the applications within the weed height restrictions of the product label. While Ignite has been seen to kill larger weeds, this is not always the case. To assure weed control, applications must be made in a timely manner. There are no guarantees that weed control will be accomplished with any herbicide if the herbicide is applied after the weed has exceeded the label recommended growth stage.

In other tests, Envoke has provided good control of pigweeds. However, in this test, the pigweeds were taller than the height recommendations found on the product label. This demonstrated the need for proper use of any pesticide. It is important to follow all label recommendations.

Table 1. Percent control of pigweed (Palmer amaranth and Waterhemp) seven days after each herbicide application.

	2 May 7 DA1 st T	19 May 7 DA2 nd T	9 June 7 DA3 ^{ed} T	24 July 7 DA4 th T
Dual Round Up	98.3 a	98.3 a	98.3 a	100 a
Dual Ignite	96.7 a	98.3 a	96.7 a	91.7 ab
Round Up	100 a	100 a	98.3 a	100 a
Ignite	100 a	100 a	98.3 a	68.3 b
Dual Envoke	53.3 b	18.3 b	0 b	0 c

Dual Sequence Round Up	98.3 a	98.3 a	98.3 a	100 a
LSD (P=.10)	10	6.86	3.83	25.32
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001

Table 2. Percent control of barnyardgrass seven days after each herbicide application.

	2 May 7 DA1 st T	19 May 7 DA2 nd T	9 June 7 DA3 rd T	24 July 7 DA4 th T
Dual Round Up	98.3 ab	98.3 a	100 a	96 a
Dual Ignite	98.3 ab	98.3 a	95 b	91 a
Round Up	95 b	98.3 a	98.3 ab	98.3 a
Ignite	98.3 ab	98.3 a	98.3 ab	53.3 b
Dual Envoke	46.7 c	28.3 b	0 c	0 c
Dual Sequence Round Up	100 a	100 a	96.7 ab	97.7 a
LSD (P=.10)	3.43	9.7	4.2	23.53
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001

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.