



Result Demonstration/Applied Research Report

2004 - 2005 Jones County
Silverleaf Nightshade Control Demonstration
Cooperator: Gary and Susie Lovvorn

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Summary

Five treatments were applied to Silverleaf nightshade on October 18, 2004. A wide range of control was achieved with the herbicides applied. Tordon 22K plus 2,4-D provided the highest level of Silverleaf nightshade control seven months after the test was established. The higher rates of Clarity and Tordon 22K had enough soil activity that the broadleaf weeds were still being controlled when plots were evaluated on June 16, 2005.

Problem

In the Rolling Plains of Texas, Silverleaf nightshade (*Solanum elaeagnifolium*) is a problem in crop production and non-crop areas. Silverleaf nightshade is a perennial that grows up to 3 feet tall. Leaves are an inch or less in width, lance shaped, somewhat wavy along the edges, and up to 5 inches long. Stems are armed with a few yellowish thorns. Both stems and leaves are covered with downy hairs, giving the plant a silvery appearance. Flowers are about 1 inch wide with 5 bluish to lavender petals, surrounding 5 bright yellow anthers clustered in the center. Flowers can be seen from midsummer until frost. Fruits are smooth, orange-yellow to dark colored, many-seeded berries. The plant has extensive horizontal rhizomes from the crown.

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: Gary and Susie Lovvorn
Location: 0.5 miles south of Corinth on east side of Highway 277

Application Information:

Date Applied:	October 18, 2004
Time:	11:00 a.m. to 12:30 p.m.
Wind Speed:	6 to 9 miles per hour
Wind Direction:	West
Air Temperature:	80 to 82 ⁰ Fahrenheit
Relative Humidity:	31 to 38%
Pressure:	32 pounds per square inch
Boom Height:	19 inches
Water Applied:	17 gallons per acre
Nozzle:	Air Induction 11002 on 20 inch centers
Ground Speed:	3.0 miles per hour
Application Device:	Self propelled rig
Plot Size:	13.33 feet wide by 25 feet long
Plot Locations:	Plot 101 starts at the first telephone pole south of the house.
Test Design:	Randomized complete block design with three replications

Plant Information

The Silverleaf nightshade plants were actively growing at the time the herbicides were applied. The plants were 6 to 10 inches tall growing in an unstressed condition with no blooms.

Results and Discussion

These plots were evaluated on June 16, 2005 (seven months after plot establishment) and only one of the treatments provided a significantly higher level of weed control than the check. The variability between plots was the primary reason that most treatments were shown not to provide any higher level of weed control than the check. The information collected on June 16 is summarized in Table 1.

To simplify the explanations in this section, I will discuss each chemical and the level of weed control observed.

Clarity provided only 28 percent control of the Silverleaf nightshade in this test. It has the potential to be used in the fall and then planted back to cotton the next spring. At 32 ounces per acre the soil residual should be at a minimum seven months after application. At 64 ounce per acre the impact to emerging cotton the next spring should be easily seen.

Remedy and Reclaim provided 60 percent control of the Silverleaf nightshade. There is no method to legally use this herbicide combination on cropland. In rangeland it does have potential to be used for Silverleaf nightshade control.

Roundup WeatherMAX at 56 ounces took out 67 percent of the Silverleaf nightshade. Since this herbicide has no soil activity, the plots were infested with weeds at the seven month rating.

Tordon 22K when combined with 2,4-D did an impressive job in controlling the Silverleaf nightshade in this test. This was the only treatment providing significantly better control than the check. The 32 ounce rate of Tordon 22K still had a lot of soil activity at the seven month rating.

Factors improving the performance of the herbicides in this test were: actively growing Silverleaf nightshade, increased gallonage of water, and applying the material under favorable environmental conditions.

Table 1. Data collected from Gary and Susie Lovvorn's Silverleaf Nightshade Control Test (Jones County, 2005)

Treatment	Cost of Herbicide Per Acre	Percent Silverleaf Nightshade Control (June 16, 2005)
Tordon 22K @ 32 ounces per acre + 2,4-D @ 32 ounces per acre + C.O.C. @ 1% v/v	\$25.38	94.7 a
Roundup WeatherMAX @ 56 oz. per acre + Ammonium Sulphate @ 0.17 pound per gallon	\$24.50	66.7 ab
Remedy @ 1.0% v/v + Reclaim @ 1.0% v/v	\$37.10	59.7 ab
Tordon 22K @ 32 ounces per acre + C.O.C. @ 1% v/v	\$20.48	30.0 ab
Clarity @ 32 ounces per + C.O.C. @ 1% v/v	\$22.00	28.0 ab
Check	\$0.00	0.0 b

NOTE: In Table 1, the individual or combination of letter a or b beside the number are to indicate statistical significance. There is no statistical difference between numbers that have the same letter to the side (even when there appears to be a large difference in results between the materials applied).

Acknowledgments

We want to take this opportunity to thank Gary and Susie Lovvorn for their help in plot establishment and management.

Also, we would like to thank the following companies for providing herbicide for this test.

Monsanto provided Roundup WeatherMAX

BASF provided the Clarity

Dow AgroSciences LLC provided the Remedy, Reclaim and Tordon 22K

UAP provided the 2,4-D and C.O.C.

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