



Result Demonstration/Applied Research Report

2003 and 2004 Tom Green County
Western Horsenettle Control Demonstration
Cooperator: Alton Cavaness

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Summary

Over a two year period, starting the spring of 2003 and ending the fall of 2004, six applications of Roundup WeatherMAX was applied to Western Horsenettle to determine if exclusive use of glyphosate could result in acceptable levels of control. During 2003 and 2004 a 28 ounce application of Roundup WeatherMAX was applied within seven days after the first bloom appeared on the Western Horsenettle. During 2003 there were three applications made and the same number of applications were needed in 2004. The level of control at the middle of October is still higher than 97 percent when compared to the adjacent check.

Problem

In the Rolling Plains of Texas, Western Horsenettle (*Solanum carolinense*) is a problem in crop production and non-crop areas. Horsenettle is a perennial herb with branching rootstocks and creeping rhizomes. Two distinctive vegetative features of the plant are the yellow star shaped spines that are directly attached to the stems and leaves of the four to eight branched plant. The leaves are alternate, egg-shaped, with strongly waving to slightly lobed margins. Spines on the leaves are usually found along the major veins. The inflorescences are 5 to 20 flowered in cymose or racemose clusters. The petals are pale violet to white. Horsenettles are found in fields, pastures and bar ditches and extracts moisture and nutrients that could be used for the production of a crop and grass. The seed is poisonous if ingested. The plant has spines and should be handled carefully.

Objective

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

Materials and Methods

Cooperating County Producer: Alton Cavaness
Location: 1.25 miles east of Water Valley on Old Sterling City Highway

Application Information:

Date Applied:	Each of six application were applied within one week of first bloom
Time of Application:	between 6:00 and 7:30 p.m.
Wind Speed:	2 to 3 miles per hour
Wind Direction:	South by Southwest
Air Temperature:	68 to 86 ⁰ Fahrenheit
Relative Humidity:	25 to 70%
Herbicide Applied:	Roundup WeatherMAX
Spray Volume	16.0 gallons per acre
Nozzle:	8002 Extended Range
Plot Size:	4 feet wide by 100 feet long
Weed:	Height usually ranged from 8 to 12 inches

Results and Discussion

Roundup (glyphosate) has been used for several years to provide suppression to Western Horsenettle. The successful elimination of Horsenettle has not been achieved using two applications of glyphosate. The purpose of the test was to determine if Horsenettle could be controlled and how many application would be needed.

To prevent the development of seed, all applications were made within the first week after the Horsenettle bloomed. Each application reduced the Horsenettle plant population. By the end the third application in 2003 the population of Western Horsenettle was less than 60 percent. In the spring of 2004 the emerging plants were less vigorous and plant development was slow. After the first application the plant population was reduced by 85 percent as compared to the adjacent check plot. At the end of the second application the level of control was higher than 95 percent. The third application was made in September and only two plants remain in the 100 foot treated area. The plot will be observed again in 2005 and if needed another application will be made.

The competition of the Western Horsenettle was dramatically reduced but it took six \$8.00 applications (\$48 for the herbicide alone and two years). The reduction in total population should be long term and not require this aggressive treatment program in the future if plants are not allowed to reestablish.

Acknowledgments

I want to take this opportunity to thank Alton Cavaness for his help in plot establishment and management.

I would also like to thank Monsanto for providing Roundup WeatherMAX for this test.

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