



Result Demonstration/Applied Research Report

2004 - 2005 Hog Potato Weed Control Demonstration
Nolan County
Cooperator: Bill Hunter

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Summary

Six treatments were applied to Hog Potato on December 9, 2004. A wide range of control was achieved with the herbicides applied. Tordon 22K, Surmount, and a combination of Remedy and Reclaim provided the highest level of Hog Potato control six months and 11 months after the test was established. The treatments that included Tordon 22K or Surmount had enough soil activity that the broadleaf weeds were still being controlled when plots were evaluated on June 16, 2005. In a non-crop situation these herbicides would be useful.

Problem

In the Rolling Plains of Texas, Hog Potato (*Hoffmanseggia densiflora*) is a problem in crop production and non-crop areas. This weed is a low growing, slender stemmed perennial, that is 6 to 10 inches tall. It reproduces from seeds, from creeping underground horizontal roots, and from deep seated nutlike tuberous enlargements of the roots. The twice divided leaves are alternate, 2 to 5 inches long including the stalks, and are covered with glandular dots and fine incurved hairs. They are divided into 3 to 5 pairs of primary leaflets (or divisions), each of which is further divided into 5 to 10 pairs of oblong secondary leaflets only 1/8 to 1/4 inch long. The flowers have 5 yellow or orange red petals about 1/2 inch long, each narrowed into a stalk covered with small glands. The flowers occur along the upper part of the stems, the flowering part only about 2 to 6 inches long and covered with small sticky tackshaped reddish glands. The flattened, slightly curved pods, 2/3 to 1 2/3 inches long, are dark reddish brown, and have few to several seeds. The grayish seeds are smooth, flattened eggshaped, and slightly more than 1/8 inch long. A common native weed, often forming large colonies in heavy alkaline soil along roadsides, ditch banks, and waste places, becoming a troublesome pest when it spreads to adjacent cultivated lands and pastures.

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: Bill Hunter
Location: Three miles west of Trent, Texas

Application Information:

Date Applied:	December 9, 2004	Time:	9:30 to 11:00 a.m.
Wind Speed:	10 miles per hour	Wind Direction:	West
Air Temperature:	54 to 59 ⁰ Fahrenheit	Relative Humidity:	40 to 50%
Ground Speed:	3.0 miles per hour		
Application Device:	Self propelled rig		
Pressure:	32 pounds per square inch		
Boom Height:	10 inches above the top of the weed		
Water Applied:	18 gallons per acre		
Nozzle:	Air Induction 11002 on 20 inch centers		
Plot Size:	13.33 feet wide by 60 feet long		
Test Design:	randomized complete block design with three replications		

Plant Information

December 9, the Hog Potato plants were four to six inches tall and still green and growing when the herbicides were applied. High gallonage was needed to get adequate spray coverage to the plant. The Hog Potato plant population averaged 3 per square foot.

Results and Discussion

These plots were evaluated on June 16, 2005 (six months after plot establishment) and on November 7, 2005. The information collected is reported in Table 1. Several of the herbicide treatments controlled 100 percent of the Hog Potato. Some of the products applied still had soil activity at the time the plot was rated June 16.

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

Tordon 22K did an impressive job in controlling the Hog potato. The 32 ounce rate still had some soil activity six months after the plot was established. The addition of 32 ounces of 2,4-D in a tank mix did not increase the level of weed control in this test. The soil activity resulted in injury to cotton planted for 2005.

Reclaim and Remedy was used at two different rates in this test and both provided excellent control of the Hog potato plants. At the time plots were rated for weed control, there was no evidence of injury to cotton.

Surmount used at 32 ounces per acre was effective in controlling the Hog potato, but there was soil activity resulting in injury to the cotton.

PastureGard (triclopyr + fluroxypyr) at a 64 ounce rate provided minimal control of the Hog potato initially but had an improved rating on November 7. This product has a limited use on ditch banks and CRP acreage.

Table 1. Data collected from Bill Hunter's Hog Potato Control Test (Nolan County, 2005)

Treatment	Cost of Herbicide Per Acre	Percent Hog Potato Control (June 6, 2005)	Percent Hog Potato Control (Nov. 7, 2005)
Tordon 22K @ 32 ounces per acre + C.O.C. @ 1% v/v	\$20.48	100 a	91 a
Tordon 22K @ 32 ounces per acre + 2,4-D @ 32 ounces per acre + C.O.C. @ 1% v/v	\$25.38	100 a	90 a
Surmount @ 32 ounces per acre + C.O.C. @ 1% v/v	\$12.22	100 a	90 a
Remedy @ 1.0% v/v + Reclaim @ 1.0% v/v	\$37.10	100 a	90 a
Remedy @ 0.5% v/v + Reclaim @ 0.5% v/v	\$18.55	100 a	93 a
PastureGard @ 64 ounces + C.O.C. @ 1% v/v	\$21.93	0 b	68 a
Check	\$0.00	0 b	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.

Acknowledgments

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

I would also like to thank Dow AgroSciences LLC for providing the PastureGard, Reclaim, Remedy, Surmount and Tordon 22K and UAP for providing the 2,4-D and C.O.C. for this test.

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.