

Utah IPM/SA Mini-Grant
Final Project Report

Design and Implement a Practical Grazing System Using Goats to
Control Noxious Weeds
Summit County, Utah
2012

By

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USU Extension Agent

Project Title:

Design and Implement a Practical Grazing System Using Goats to Control Noxious Weeds

Location of Project:

Summit County, Utah

Total Grant Award:

\$2500.00

Principal Investigator:

Sterling Banks, USU/Summit County Extension Agent

Co-Principal Investigator

None

Cooperators:

Nell Larson, Director of Conservation USU/Swaner Eco Center

Jack Marchant, Summit County Weed Supervisor

Mindy Wheeler, Summit County Cooperative Weed Management Area Coordinator

Boyd Willoughby, Mountain States Meat Goat Association

Summary of Project:

Swaner Preserve includes 1200 acres of open space that serves as a refuge for wildlife in the area. Noxious weeds have invaded areas of the preserve, thus affecting the natural habitat. In order to help control the spread of noxious weeds on the preserve, Utah State University Extension Service and Swaner Preserve conducted a biological weed control study using goats to control noxious weeds. The purpose of this project was to determine the effectiveness of goat grazing as a weed control method in reducing the noxious weeds located on the preserve. Dyers woad and Canada thistle were the target weeds for this project. A section of the preserve is heavily infested with Dyers woad and Canada thistle, so 25 acres of this area was selected for the project. Within the 25 acre area small plots using electric net fence was established ranging in size from 1 to 6 acres depending on the weed infestation of the various plots. 30 to 40 goats were rotated between each of the plots grazing them three times throughout the summer. Rotation times were dependent on the stage of growth of the weeds and amount of forage available to the goats. Results were determined by establishing three 100' monitoring transects and counting the numbers of weeds (pre-graze and post-graze) within a 3' x 3' hoop every 10 feet along the various transects. There was a slight reduction in the number of Dyers woad plants as a result of the grazing, while Canada thistle showed no significant difference in plant numbers. Goats prefer Dyers woad plants in the vegetative stage compared to mature woad plants. Goats need to graze woad plants at least three times during the growing season to prevent them from going to seed. Also, the cost of using goats to control weeds on a per acre basis cost's approximately twice the cost of using a traditional herbicide treatment. In summary goat grazing can be an effective tool in controlling noxious weeds, but more than one year of grazing is required.

Objectives of Project:

1. Design a practical and effective grazing system with goats to control noxious weeds that other weed professionals can follow and implement.
2. Establish a large scale weed control grazing demonstration site for the public to view.
3. Determine what type of grazing system is the most effective in controlling specific target weeds.
4. Provide the partner organizations, area landowners and the public with the results of the project.
5. Control the Dyers woad in this project area using biological control techniques thus reducing the need for herbicides.

Results of Project:

1. A twenty-five (25) acre demonstration site was established at the USU/Swaner Preserve. The site included several small plots using electric net fence ranging in size from one (1) to six (6) acres. The size of each small plot was determined by the weed infestation and amount of forage available to the goats. Thirty (30) to forty (40) goats were rotated between each of the plots grazing them three times throughout the summer. Weeds studied in the demonstration area were Dyers woad and Canada thistle.
2. Results were determined by establishing three (3) 100' monitoring transects and counting the number of weeds (pre-graze and post-graze) within a 3'x3' hoop every 10 feet along the various transects. There was a slight reduction (11%) in the number of Dyers woad plants as a result of the grazing, while Canada thistle showed no significant difference in plant numbers.
3. Goats prefer Dyers woad plants in the vegetative stage compared to mature woad plants.
4. Goats need to graze woad plants at least three times during the growing season to prevent them from going to seed.
5. The cost (\$129.00/acre) of using goats to control weeds on a per acre basis cost's approximately twice the cost (\$54.00/acre) of using a traditional herbicide treatment.

Evaluation and Impact:

1. A twenty-five (25) acre demonstration site was established which included several small plots using electric net fence ranging in size from one (1) to six (6) acres. Thirty (30) to forty (40) goats were rotated between each of the plots grazing them three times throughout the summer. Three (3) 100' monitoring transects were established to count weed numbers (pre-graze and post-graze) every 10' feet along each of the transects using a 3'x3' hoop. There was a slight reduction (11%) in the number of Dyers woad plants as a result of the grazing, while Canada thistle showed no significant difference in plant numbers.
2. 100% of the producers/professionals (13) who filled out the SARE evaluation form indicated they had increased their knowledge about goat grazing as a biological weed control method. All of them indicated they would share the results with other producers/professionals.
3. As a result of this project more emphasis will be placed on biological weed control methods (ie. livestock grazing, beneficial insects, etc..) in controlling weeds in Summit County.

Educational Outreach:

1. Seventy (70) individuals, producers and professionals attended a field day learning about the goat grazing weed control project at the Swaner Preserve in Summit County. Attendees received a factsheet explaining the project and how goat grazing controls noxious weeds. Time was spent answering questions about the project during the field day. Also, a meeting was held at the Preserve with the USU board of trustees explaining the various projects (including the goat grazing project) being conducted at the Swaner Preserve. One newspaper article (Park Record) was written about the project and distributed to the residents of Summit County. One handout and two signs were developed for the public explaining the project and how goat grazing controls noxious weeds. The signs were displayed at the project site, so the public could view them during the goat grazing period. Also, a power point presentation was developed showing the results of the project and will be presented to county extension agents at an upcoming in service training meeting/conference.
2. Information about the project was presented at the Swaner Preserve Weed Control Field Day and at the upcoming 2013 USU Extension Annual Conference.

Educational Products Produced:

1. Power Point Presentation – “Noxious Weed Control Goat Grazing Project at the Swaner Preserve”.
2. Factsheet – “Swaner Preserve and Utah State University Extension Service Noxious Weed Control Goat Grazing Project”.
3. Newspaper Article – Park Record “Goats Join the Weed Fight”.
4. Project Site Sign – “Swaner Preserve and Utah State University Extension Noxious Weed Control Goat Grazing Project”.