IPM & Sustainable Agriculture
Project Report

Biological Weed Control - Using Goats To Control Noxious Weeds
Summit County, Utah
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By

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During the summer months of 2007 a weed control demonstration plot was conducted in Summit County, Utah comparing goat grazing versus a traditional herbicide treatment to control noxious weeds. Funding for this project was made possible through a mini grant provided by Western Region SARE, Western IPM and USDA, CSREES.

Situation:

Summit County, Utah is known for its beautiful native mountain landscape particularly around the Park City area. This area contains three large ski resorts which own or lease large amounts of acreage around Park City. The public perception (Park City area) about using chemicals to control noxious weeds is not a very popular weed control option. Therefore, noxious weeds have become a major problem with landowners particularly the ski resorts. During a CWMA meeting in Park City information was presented to the group about using goats to control noxious weeds in sensitive areas. The group was told that a mini grant had been funded to determine the effectiveness of using goats to control noxious weeds. One of the ski resorts land managers was at the meeting and interested in participating with the goat grazing project. Details of the mini grant including objectives and results are listed below:

Objectives for the grant:

1. Determine if goat grazing can be an effective weed control option for landowners.
2. Establish a weed control goat grazing demonstration site for landowners, agency personnel, livestock producers and the public to view.
3. Determine what type of grazing systems is the most effective in controlling specific target weeds.
4. Compare the cost and effectiveness of goat grazing to traditional herbicide treatments for controlling specific target weeds.
5. Provide the public, landowners, agency personnel the research results of this project.

Results from the grant:

1. A four acre demonstration site was established at the Park City Mountain Ski Resort. The site included four (4) one acre treatment plots. Plots included control/untreated, herbicide treatment**,** once grazed treatment and twice grazed treatment. Weeds studied in the plot area were Musk Thistle, Spotted Knapweed, Russian Knapweed and Dalmatian Toadflax. Milestone was the herbicide treatment (5 fl. oz. /acre) used at the demonstration site. Twenty five (25) goats were used to graze the two other plot areas.

2. The Milestone herbicide treatment proved to be an effective weed control option for various weeds with the following results: Musk Thistle control - 90% to 95% control; Russian/Spotted Knapweed control - 90% control and Dalmatian Toadflax control - 10% control (little effect).

3. The two grazing treatments proved to have mixed results. The once grazed treatment provided the following weed control results. 50% of the bolted Musk Thistle plants were grazed down to the rosette stage. Russian and Spotted Knapweeds were grazed down to the crowns on 90% of the plants. Dalmatian Toadflax show little signs of plants being grazed. Twice grazed treatment showed more promise in its effectiveness in reducing seed formation on weeds. Musk Thistle only had 50% of the plants forming seed heads after the second grazing treatment. 90% of the knapweeds were grazed down to the crowns with no seed heads developing. Dalmatian Toadflax had 50% of the leaves stripped off the stems and plants appeared to be stressed due to grazing effects.

4. The cost of using the goat grazing treatment to control noxious weeds for this project figured out to be approximately $70.00 per acre compared to the cost of using the herbicide (Milestone) treatment which figured out to be approximately $50.00 per acre.

5. Two newspaper articles (Park Record and Deseret News) were written about the goat grazing project along with the local radio station interviewing the project coordinator about the goat grazing experiment. A field day was held at the beginning of the project with officials from Park City, Summit County, the news media and the local ski resort, explaining how the project would be conducted. A flier was developed for the public showing the results of the herbicide and goat grazing project. Also, a power point presentation will be developed showing the results of the project and shown to county extension agents at an up coming in service training meeting.

Conclusions determined from the grant:

1. Milestone herbicide is an effective weed control option for Thistle and Knapweed control.

2. Grazing weeds can be an effective weed control option; however more than one year of grazing is required.

3. Herding grazing goats is not as effective as penning grazing goats in electric fence pens to control weeds.

4. Weeds need to be grazed at least twice during the growing season to reduce the seed source for the following year.

5. Using a combination of grazing and herbicide treatments can be an effective weed control option especially in sensitive areas.

6. Goats can prevent flowering of Musk Thistle using repeated grazing.

7. Goats must graze Knapweeds repeatedly (at least twice) during the growing season to prevent plants from producing seeds.

8. The cost of using goats to control weeds on a per acre basis cost's approximately _ more than using a traditional herbicide treatment.

9. The general public favors the use of grazing goats to control noxious weeds over the use of chemicals.

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