

**Utah Extension IPM and Sustainable Agriculture Mini Grant Program  
Wasatch County Proposal 2011**

**Title:** Control of Buckhorn Plantain in Pastures, Forages, and Waste Areas in Wasatch County.

**Project Personnel:** Allan Sulser, USU/Wasatch County Extension, Project Leader  
Quintin Lewis, Wasatch County Weed Department, Cooperator  
Gary Maxfield, Private Landowner, Cooperator  
Hugh Barker, Private Landowner, Cooperator

**Situation Statement:** Buckhorn Plantain is an invasive perennial weed that is extremely competitive. Buckhorn Plantain emerges early in the spring and gets a head start on most other vegetation. As such, Buckhorn Plantain robs desirable plants of space, sunlight, water and nutrients. Prolific seed production and an extensive deep tap and lateral root system give this plant a huge competitive advantage and make control extremely difficult. Of special concern in Wasatch County, is the reduced productivity of pastures, forage lands, and range lands for livestock and wildlife as desirable plants are crowded out by Buckhorn Plantain patches. This plant is taking over hundreds of acres of quality rangeland, pastures, forage lands and waste areas each year. Most wildlife and range animals, excluding sheep and goats, avoid eating Buckhorn Plantain. To date producers have not been able to control buckhorn plantain using the methods outlined in the fact sheet, **AG/Weeds/2008-01pr**, by Ralph Whiteside and Alicia Wall. Several chemicals and tillage techniques have been tried with little results. We propose using several different chemicals, Garlon 3a, Butyrac 200, Cimarron, Raptor, and Milestone herbicides to discover which will work best for the producers in Wasatch County. The hope is that these trails will find the most productive herbicide for producers to choose from in the hopes of not wasting their time, efforts, and dollars on herbicides that do not produce results and in keeping unproductive herbicides out of the environment.

**Objectives:**

1. Determine which herbicide will control buckhorn plantain in pasture and forage lands which will be the least cost for producers.
2. Establish a weed control demonstration site for landowners, producers, and the public to view the results.
3. Education and public awareness of best herbicide to control buckhorn plantain.
4. Provide the public, landowners, and producers with a fact sheet and powerpoint on the results of the project.

**Procedures:**

February, 2011 - Planning meeting with all cooperators to determine demonstration site location, how demonstration will be setup and implemented, spray schedule determined, schedule of activities, etc.. Allan Sulser will organize planning meeting.

April –May 2011 – Spray demonstration plots with the five herbicides when buckhorn plantain is actively growing and pasture and forage crops are still dormant. Allan Sulser and Quintin Lewis will organize and spray using equipment owned by Wasatch County.

June 2011 - Evaluate the sites and determine the effectiveness of herbicides used.

October 2011 – Spray demonstration plots second time with the five herbicides when buckhorn plantain is actively growing and pasture and forage crops have gone dormant. Allan and Quintin will organize and spray.

November 2011 – Evaluate the sites and determine the effectiveness of herbicides used.

November 2011 – Produce fact sheet and powerpoint on Buckhorn Plantain project.

### **Data Analyses and Presentation of Results:**

Weed control results will be recorded on a percent control basis compared to an untreated area within the demonstration site. Specific plot design will be determined during the first planning meeting held in February of 2011 based on site location. Design will include control site, single treatment site, spring and fall double treatment site. Chemicals used will be Garlon 3A, Butyrac 200, Raptor, Milestone, and Cimarron. Maximum size of entire demonstration site will be five (5) acres with (6) fifty by twenty test plots in two or three locations.

### **Evaluation:**

Once results are summarized and introduced to extension personnel, landowners and the public. An in-service will be given at the extension annual conference, a fact sheet will be written to be post on the extension website, and results will be distributed to interested persons in and around Wasatch County and throughout the state. The information will also be shared with other USU Extension Agents at the Utah Ag Agent meetings and will be distributed in the proceedings.

### **Educational Outreach**

- The results of the research will be presented at the National Agricultural Agents Association National meeting.
- The information will also be shared with other USU Extension Agents at the Utah Ag Agent meetings and will be distributed in the proceedings.
- The fact sheet will be peer reviewed and posted to the Extension Website.

### **Educational Products**

- Poster for display at counties events in the courthouse and at cooperator meetings
- Peer-reviewed paper presented and professional meetings and published in a peer-reviewed journal.
- A PowerPoint presentation will be put together to use at local and state farmer meetings.
- Extension Bulletin and Fact Sheet

**Budget:**

Requested funding for this project is outlined below:

**Herbicides purchase:**

Garlon 3A	\$180
Butyrac 200	\$45
Raptor	\$595
Cimarron	\$150
Milestone	\$130
Surfactant Mix	\$33
Publications and Posters	\$400
Travel	\$50
Total	\$1583

**References:**

Buck horn Plantain, Ralph Whitesides, Alica Wall, Utah State University Extension

[http://extension.usu.edu/files/publications/publication/AG\\_Weeds\\_2008-01pr.pdf](http://extension.usu.edu/files/publications/publication/AG_Weeds_2008-01pr.pdf)

Buckhorn Plantain, Jim Stritzke, Oklahoma Alfalfa, Oklahoma Extension Service

<http://www.alfalfa.okstate.edu/weeds/winboard/buckhorn.htm>

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