

**Project Title**

Involving Local FFA Members in Monitoring, Collecting, and Distributing Biological Control Agents in Leafy Spurge and Other Troublesome Weeds

**Project Personnel (Project Leader, co-Leader(s), Collaborators)**

Clark Israelsen, Joel Merritt, Jake Forsgren, Eric Bingham, Clint Asten

**Total Grant Award**

\$ 2,310

**Location of Project (county/ies in Utah)**

Cache County (Richmond and Cornish areas) Weber and Utah Counties received the excess biocontrol agents that were collected.

**Objectives**

- a. Use of BCAs. By involving High School FFA students who are currently enrolled in Plant Science classes in IPM/BCA activities.
- b. With appropriate training from USU Extension and the Cache County Weed Department, FFA students will monitor BCA populations in areas when they have been introduced.
- c. Under the direction of adult leaders, FFA students will collect and redistribute BCA's from areas of excess to areas that are deficient. Care will be taken to insure that proper protocols are followed so that success can be enhanced.
- d. If funds permit, trained FFA students and their supervisors will introduce purchased BCAs to new areas where weed infestations are troublesome.
- e. Our major objective is to convince the younger generation, future land owners, of the benefits of IPM/Sustainable Agriculture methods along with the proper

**Summary**

We met with FFA students enrolled in Plant Science classes at Mountain Crest and Sky View High Schools on May 10<sup>th</sup> and 11<sup>th</sup>. Joel Merritt, Jake Forsgren, and Clark Israelsen presented a powerpoint on biocontrol and weed identification. They invited all interested students to sign up for field days in the summer where they would actually collect and redistribute insect populations under the supervision of County Weed Department and Extension professionals.

During the summer of 2011, Cache County Weed Department and the Cache County Extension Office hosted two separate field days to allow students from across Cache County to experience collection and release of biocontrol. We expanded student involvement to include Logan High students and middle school science students involved in summer school.

**June 16<sup>th</sup>**

9am – met at Logan High School for Biocontrol introduction

9-10 am – Student introductions and watched selected clips from the movie “Gremlins” to introduce the concept of an invasive species.

10-11 am – Powerpoint presentation by Eric Bingham to establish what invasive species are, why they are so hard to control, and how biocontrol works to keep invasive species in check.

11-11:30 – Lunch (Pizza)

11:30-12:30 – Travel to Ogden Canyon to collect biocontrol for Dalmation Toadflax on the

hillsides of an Ogden Canyon (4746 S. 1900 E. Ogden)

12:30-1 pm – Hike up canyon to collection site

1-3 pm – collect Dalmation Toadflax Weevils, aspirate them out of the nets, and put them in containers for tomorrow's release.

3-4 pm – Return to Logan High School.

### **June 17th**

9-9:30 am- meet at Logan High School and discuss yesterday's activity as well as today's release

9:30 am – Travel to Poison Plant Research Lab

9:45-11:30 – Poison plant lab presentation/observation of various poison plants that are present in Cache County.

11:30-11:45 am – Travel to Dalmation Toadflax biocontrol release site near First Dam in Logan.

11:45-12:15 – Release Dalmation Toadflax weevils and fill out a biocontrol release form.

12:15-1 pm – Lunch at first Dam (Sub Sandwiches)

1-3 pm – Travel to Cornish to view Dalmation Toadflax that has been successfully controlled using the Dalmation Toadflax Weevil. Then stop for ice cream on the way back and look at the leafy spurge growing in Richmond.

3-4 pm – Return to the High School and fill out evaluation forms.

### **June 30<sup>th</sup>**

9:30 am – Met at Sky View FFA building

9:30-10:30 – Powerpoint by Eric Bingham to establish what invasive species are, why they are so hard to control, and how biocontrol works to keep invasive species in check.

10:30-12:00 – Collected Leafy Spurge biocontrol bugs from a field in Richmond.

12:00-12:30 – Traveled to release site above Cove. Eat lunch on the bus (pizza)

12:30-1:30 – Hike up to release site in Cove, release bugs, and fill out biocontrol release form.

1:30-2 pm – Return to Sky View FFA building.

## **Project Results**

### **June 16<sup>th</sup> and 17<sup>th</sup>**

This workshop went great! We had the cooperation of 3 teachers from Logan High School that brought 18 students for these 2 days. We collected over 5,000 Toadflax Weevils (total value \$7,500). We had so many bugs that we were able to take all we could use, and still send the leftover releases with Amber Mendanhall (the APHIS biocontrol coordinator who helped out with our workshops), to take to Salt Lake for releases there. The students were able to get a hands on experience into what biocontrol is, and how it works. We personally heard many students say things like, "This is actually really fun!" and "How do I get a job doing this?" The weather cooperated and the bugs were out in droves. The teachers that participated all said that they would love to have this be a regular occurrence that they could bring their kids to every summer collection. Amber reported that it was the most successful Toadflax biocontrol collection that she has ever had.

### **June 30th**

Another great day for biocontrol! 4 teachers from Mount Logan Middle School and Logan High, and 2 teachers from Sky View High, as well as Amber Mendanhall, Clark Israelsen (the County Extension Agent) all helped this fieldtrip to be a success. We had a total of 20 students, and we collected over 100,000 Leafy Spurge Flea beetles (total value \$10,000). We were able to send 10 releases with Amber to take to Salt Lake, release 3 in Cove, and still had 6 releases that we put out the next day at other spots in Cache County. Again we were fortunate to have the

weather and the bugs both cooperate. We were worried that the Leafy Spurge bugs wouldn't be out yet, since it's been so cold, but the bugs came out a few days before our workshop. The teachers and students alike had a lot of fun, and developed a better understanding of biocontrol.

### **Evaluation and Impact**

- f. It is our assessment that we did a great job educating and involving high school students, and their teachers, to the benefits of bio-control. As stated above, we collected \$7,500 worth of Toad Flax Weevils and \$10,000 worth of Flea Beetles to control Leafy Spurge. We had ample bio-control bugs to distribute to sites within Cache County. Excess numbers were distributed in Weber and Utah Counties by Amber Mendenhall, APHIS.
- g. We did measure changes in knowledge, as indicated on WSARE evaluation listed below. In every case, students and teachers had a significant increase in knowledge and a determination to expanding the impact of bio-control methods.
- h. The major change we see for future county extension programs, deals with the impact future land owners (FFA and high school students) will make on adapting bio-control strategies as they become the land owners and managers of the future. We think we could have done a better job of involving current landowners in this project. We anticipate doing a better job of that in future endeavors.

### **Educational Outreach**

- i. In addition to this report, which is available electronically to the entire world, we anticipate presenting in the following settings. Utah Weed Meetings, County Crop Schools, Producer Field Days, Professional Development meetings for Agricultural Extension Agents. Utah Vocational Agriculture Teachers Workshops.
- j. We were also able to purchase some additional bio-control agents for release next season.

**Educational Products Produced** – list the educational products produced from this project (PowerPoint, fact sheet, poster, published article, etc.) (Electronic versions required).

<http://extension.usu.edu/cache/files/uploads/BiocontrolforInvasiveSpecies.pdf>

<http://extension.usu.edu/cache/files/uploads/Completebiocontrol.pdf>

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Provide Final Report in the format above with:

- **Attachments:** All materials produced by this grant need to be in an electronic format (handouts, power-points, posters, news articles, journal manuscripts, etc). Digital pictures of events and other project related items are welcome.









- **Required Western SARE survey questionnaire results or original paper copies.** Contact Bob Newhall for more information about the evaluation forms at [bob.newhall@usu.edu](mailto:bob.newhall@usu.edu) or 435-797-2183

and send to: Marion Murray, [marion.murray@usu.edu](mailto:marion.murray@usu.edu) by **February 29, 2012.**

**This WSARE form is to be completed by all participants and applicants and is to be sent in as part of the Utah IPM/SA Mini-Grant final report.**

**Evaluation Form: Sustainable Agriculture Projects**

**Western Region Sustainable Agriculture Research & Education**

**IPM/SA Mini-Grant Project Title: Involving Local FFA Members in Monitoring, Collecting, and Distributing Biological Control Agents in Leafy Spurge and Other Troublesome Weeds**

**This evaluation includes 11 teachers (9 field day and 2 classroom) 75 students (38 field day and 37 classroom) Also included are 3 landowners/producers.**

**Everyone**

**Please circle**

Improved my awareness of the topics covered	Yes	89	No	0
Provided new knowledge	Yes	89	No	0
Provided new skills	Yes	89	No	0
Modified my opinions and/or attitudes	Yes	80	No	9

How many people do you estimate you will share some aspect of this project within the next 12 months?

**Total number reported was 445.**

**Producers – In the next year I am likely to use some aspect of this project to**

Adopt one or more of the practices shown	Yes	3	No	
Increase the operation’s diversifications	Yes	2	No	1
Reduce my use of purchased off-farm inputs	Yes	2	No	1
Increase my networking with other producers	Yes	3	No	
Incorporate value-added into some aspect of my operation	Yes	2	No	1

**Professionals – In the next year I am likely to use some aspect of this project**

In an education program that I plan or participate in	Yes	10	No	1
As a resource I will make available to producers	Yes	6	No	5
As a professional development tool for my peers	Yes	11	No	
To improve advice/council I give to producers	Yes	6	No	5

**Professionals – Please describe how you are likely to use some aspect of this project for an educational purpose?**

**Responses include: “A promotion of the economic and environmental benefits of using biocontrol on invasive species.” “What a great thing to have multiple generations working together on a common issue.” “I am also going to investigate the use of biocontrol agents on other weeds and insects.”**