Promoting Beneficial Insects for Integrated Pest Management

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COOPERATORS: Master Gardeners

SITUATION STATEMENT:

Insects as a whole class are generally perceived by the general public as pests and undesirable. However, the majority of insects, up to 90% of the species are considered beneficial or neutral. There are a few obvious insects that most people understand are beneficial such as lady bird beetles and honeybees. However, many Utah native insect species are unknown to the general public, and usually categorized as pests. These “good guys” need some “good advertising and promotion”. These good guys need to be understood, in order for people to attract and protect them in their landscapes. Education of consumers of these beneficial insect species is necessary to reduce misuse and overuse of pesticides. One of the key components of an Integrated Pest Management program is proper identification of pests. This proposal is to introduce to Master Gardeners, homeowners, and the general public coming to our Utah State University Extension office in Salt Lake County on beneficial insects and changing the perception that most insects are pests. In Salt Lake County, the number of contacts through USU Extension garden phone help line, weekly plant diagnostic clinics, and information booths staffed by USU Master Gardener volunteers at Pioneer Park Farmers Market, county fair, state fair combined generates more than a thousand queries a month. Several of these queries are focused on pest identification and management.

For this grant proposal, the focus will be on using innovative technology of digital photo frames. These photo frames are portable, rechargeable, and visually appealing to capture the attention of a viewer. The goal is to make interesting visual “infomercials” on beneficial insects as well as publicize the Utah Pests webpage and resources. These frames will be programmed with short informative slideshows to introduce beneficial insects that will benefit your garden and those insects that need to be protected, rather than eliminated through use of insecticides.

OBJECTIVES:

1. For viewers to understand the concept of Integrated Pest Management, that IPM is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

2. To coordinate with new Utah Pest Fact Sheets on beneficial insects. The slide shows will direct viewers to fact sheets for more in-depth information.

3. A short survey or questionnaire form on site will evaluate if this format is useful, ask for their present use of pesticides, if viewer has changed their perception of beneficial insects, and hopefully their behavior will change to better understanding and reduce the use of pesticides after viewing the slide shows.

PROCEDURES:

1. Develop a series of short slideshows with assistance from Horticulture assistant Heidi Wayman, each approximately ten to twelve slides. The digital frames can hold several photos; so ideally, a number of slide shows on different beneficial insects will be continually scrolling through. These slideshows can be created in PowerPoint and saved in a JPEG Interchange format that will allow the digital photo frames to scroll through each slide, as if it were a jpg photo. Ideas for slideshows in addition to beneficial insects could include IPM methods for home pest control. Attached is an example of a slideshow that shows the lifecycle of lacewings with descriptive text. The photo frame can be programmed with different timing, for example, a 10 second timing on slides, it would take approximately 100 seconds to view the slideshow on lacewings. Please see an example of this slide show attached at the end of this proposal. Another opportunity for training educators, is for Master Gardeners to develop these slideshows as part of their volunteer hours and continuing education.

2. Placement of Digital Photo Frames – The large 15" digital frame would be ideal for our Master Gardener help desk which is in our reception area of our Extension office staffed part-time throughout the year by Karl Hauptfleisch. Often, people come in looking for information and this would be a free visual tour on beneficial insects in your garden. The smaller 10" frame would be portable and used at several venues where Master Gardeners have information tables and booths.

    - March 6-9, 2008 Salt Lake Tribune Spring Home and Garden Festival
    - May, June and September – Garden Fairs at Conservation Garden Park in West Jordan
    - Pioneer Park Farmers Market - Eight Saturdays during the summer
    - Every Monday in June, July and August - Plant Diagnostic Clinics
    - Salt Lake County Fair August 2008
    - Utah State Fair September 2008

3. Copies of relevant Utah Pest fact sheets available with the digital photo frames for more in depth information on the beneficial insects.

4. Informal survey/questionnaire on site for viewer/user to fill out with an incentive of a Utah Pests pen as a thank you for filling out survey. See following example

    Examples of questions on survey:

Rating scale:	**No**		**somewhat**		**Yes**
	1	**2**	**3**	**4**	**5**

- What beneficial insect slide did you view?_____
- Prior to viewing this slideshow, were you knowledgeable about this insect?
- Prior to viewing this slideshow, would you have considered this insect a pest?
- Would you have used some means (chemical, physical) to get rid of this insect?
- After viewing this slideshow, do you think you would be able to recognize or identify this insect in your garden?
- After viewing this slideshow, do you think you are more likely to allow this insect to reside in your landscape?
- Do you use pesticides regularly? If yes, answer the next question also.
- After viewing this slideshow, are you likely to change your use, that is lessen pesticide use to protect beneficial insects in your landscape?

RESULTS:

Results will be analyzed and summarized and presented at county agents meeting, horticulture agents meeting, and Annual Extension Professional Development conference. Another result, could be to ask on the survey if there are specific insects of interest, and develop and update slideshows as needed. New slideshows could also be created in coordination with introduction of Utah Pest fact sheets publications or relevant Integrated Pest Management programs.

EDUCATIONAL PRODUCTS:
A series of slideshows highlighting beneficial insects that are viewed via digital photo frames at different venues where Master Gardeners are meeting with the public.

EVALUATION:

Interview Karl Hauptfleisch, Master Gardeners who are present during the slideshows to evaluate their usefulness. Also collect survey/questionnaires and evaluate usefulness of photo frames as educational tool, as well as projecting any changes in behavior towards use of pesticides.

BUDGET:

Item	
300 color copies of Utah Pest Fact Sheets on Beneficial Insects @ $0.50 per fact sheet for distribution at different locations with photo frames	$150
Philips 9FF2M4 digital photo frame with rechargeable battery (with shipping and handling)	$240
Two (2) USB 1 GB Flash Memory or SD cards (whichever is appropriate for the frames) for data storage for photo frames	$90
15 inch diagonal Gigantor Digital Photo Frame (with shipping and handling)	$270
Energizer ER-PHOTO Universal Rechargeable Battery for Digital Picture Frame for 15 inch Digital Photo Frame (to facilitate portability)	$50
TOTAL	**$800**

Beneficial Garden Insects

Lacewings

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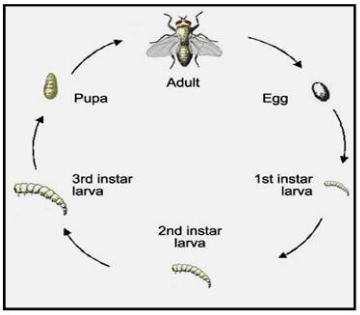
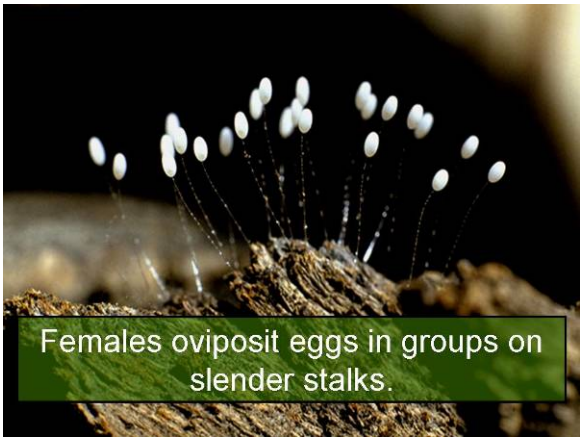
Lacewings

- **Prey Species**
  - Aphids
  - Thrips
  - Moths
  - Leafminers
  - Beetle larvae
  - Spider mites
  - Whiteflies
  - Eggs of leafhoppers
  - Small caterpillars
  - Tobacco budworm

Lacewing larvae can eat up to 200 pest insects or their eggs in one week.

Lacewing Lifecycle





Females oviposit eggs in groups on slender stalks.

Larvae grow through 3 instars (molts) for 2 to 3 weeks.

Larvae have sickle-shaped mandibles with which they piece prey.

Larvae spin white silken cocoons from which the adult emerges in about 5 days.

UTAH PESTS

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UTAH PLANT PEST DIAGNOSTIC LABORATORY

For more information:

http://utahpests.usu.edu

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