

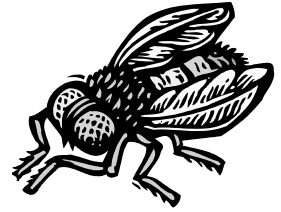
## **Unit 14 - Biological Control Study Guide**

### **Unit Objectives**

1. Define biological control.
2. Describe the three major types of biological control.
3. Describe six typical augmentation products.
4. Explain the different components of the mole cricket biological control program
5. Using a specific example, name and describe three types of cultural control methods.
6. Explain how the sterile release method works and give an example of its effective use.

### **Introduction**

What is the definition of biological control?



### **Types of Biological Control**

List three types of biological control methods and list examples of each:

Which insect was destroying the citrus trees in California?

What is the name of the beetle that was found in Australia?

What three things are examined when a classical biological control agent is quarantined?

Define inundation:

Define inoculation:

What are common places augmentation products are used?

### **Augmentation Products**

What is a problem with using ladybird beetles as pest control?

What is a problem in using praying mantids to control non-beneficial insects?

### **Mole Cricket Biocontrol**

What species of sphecid wasps parasitize mole crickets?

What type of biological control agent is the sphecid wasp?  
(augmentation, conservation or classical)

Why didn't the wasp get very well-established when introduced into Puerto Rico?

What is being done in Florida to make sure that it gets established here?

How does the sphecid wasp kill the mole cricket?

### **ASSIGNMENTS**

What are the other biological control agents that are currently being used to control the mole cricket in Florida? How successful have they been? Write two brief paragraphs describing these bio control agents and how successful they have been.

You are faced with the following problem:

Your neighbor calls you up one day and says, "I know that you have taken an entomology class and I desperately need your help. My cat has a terrible flea problem, I think he is getting them somewhere in our backyard. And my geraniums have lots and lots of aphids! I don't know where they all came from! On top of that, snails are crawling all over my flowerbed and eating the geraniums, too! I love my geraniums and I don't want them to die. I have heard there are insects you can buy to put in your yard that may eat the bad organisms. What do you suggest I do? I don't want to use pesticides because my cat is always getting into the geranium flowerbed and prowls around the yard. I don't want him accidentally ingesting toxic chemicals."

You decide to come over and take a look at her yard. After measuring her flowerbed and yard, you find that it is about 15 square feet and her lawn is about 500 square feet. Using the internet sites below (or any others you wish to use), come up with a plan to help her treat for the aphids, fleas and snails. She is on a limited budget and only has \$40 dollars to spend.

Suggested internet sites to use:

<http://www.marchbiological.com/home.html>

<http://www.bugstore.com/>

### **Cultural Control Methods**

What is cultural control?

What are three types of cultural control methods and define each one?

Where would you use each of these methods?

**Sterile Release Method**

Define sterile insect release method:

How was the screwworm fly sterilized?

Explain how the sterile release method works.

What needs to happen in order for sterile release methods to succeed? How is this accomplished?

Notes: