

## Project 8.1.1 Cause and Infect

### Purpose

Just days before the fruit ripened on the blueberry bush, thieves raided and picked every berry from the plant. All that remains are a few scattered and damaged berries lying on the ground below the bush. What, besides humans, could have stolen all of the fruit?

Certain types of pests cause specific damage to plants. Knowledge of the various ways different pests damage plants provide clues for determining the pest that is causing problems. There are so many plant pests it is impossible to list them all. However, pests have specific ways they feed or damage plants. How can you determine what is causing damage to plants? How can you stop the damage from happening?

### Materials

#### Per pair of students:

- Computer with word processing, electronic poster software, and Internet access
- Poster board (optional)
- Markers (optional)
- Colored pencils (optional)
- Glue sticks (optional)
- Scissors (optional)
- Tape (optional)

#### Per student:

- Pencil
- *Agriscience Notebook*
- *Project 8.1.1 Evaluation Rubric*

### Procedure

You will examine categories of pests, anatomical features, damage pests cause, and how to control pests.

1. Your teacher will assign a plant pest you and your partner.
2. Research the distinguishing characteristics of the pest and how to protect plants from insect destruction. Your research will need to answer the following questions.
  - What are the anatomical features of this pest?
  - What damage does this pest cause to plants?

- What are the most appropriate ways to control or deter this pest from damaging plants?
3. Your instructor will review the procedure for the creation of a poster and *Project 8.1.1 Evaluation Rubric* before beginning the project.
  4. Develop a poster describing the pest and control methods. Your poster should include the following components.
    - Title – including the name of your pest category
    - A list of common species that fall into your pest category
    - A picture illustrating an example of your pest clearly showing distinguishing characteristics
    - A list of potential damage your pest will cause
    - A picture of signature damage caused by your pest
    - A list of appropriate methods to control or deter your pest
    - A picture demonstrating a control or deterrent method

### Reference Sources for Research:

Herren, R. V. (2004). *The science of agriculture: A biological approach* (2<sup>nd</sup> ed.). Albany, NY: Delmar.

Iowa State University Extension: Yard and Garden – Weeds and Pests:

<http://www.extension.iastate.edu/yardgarden/weedspests/>

Parker, R. (2010). *Plant and soil science: Fundamentals and applications*. Clifton Park, NY: Delmar.

Reiley, H. E., & Shry, C. L. (2007). *Introduction to horticulture* (7<sup>th</sup> ed.). Clifton Park, NY: Delmar.

Ohio State University: Plant Disease Series Index: <http://ohioline.osu.edu/hyg-fact/3000/>

Ohioline Yard and Garden: Insects and Pests: <http://ohioline.osu.edu/lines/pests.html>

Pest Tracker: National Agricultural Pest Information System:

<http://pest.ceris.purdue.edu/index.php>

Purdue University: Purdue Plant and Pest Diagnostic Laboratory:

<http://www.ppdl.purdue.edu/PPDL/>

Texas A&M: Plant Pest Identification Aid: <http://vegetableipm.tamu.edu/imageindex.html>

USDA: Animal and Plant Health Inspection Service:

[http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/index.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/index.shtml)

5. When all posters are complete, your teacher will have you share your information with the class. As you view other groups' posters, fill in Table 1 on the student worksheet.

## Conclusion

1. How do pests differ?

How they do damage, what they eat and what scares them

2. What are some general practices that will protect a crop from multiple categories of pests?

Fence and scare crows

3. List the different ways pests cause damage to plants. Which would cause the most severe damage or plant death? Why?

Biting the main part of a plant, eating's it leaves or picking it fruits

4. Which types of pests are most common in your area or region?

Scare crows, rabbits and caterpillars

5. What is the difference between preventing damage and eradicating pests after damage has occurred?

Preventing damage is to stop it and the other is to get rid of the pests.

Name: \_\_\_\_\_

## Project 8.1.1 Student Worksheet

**Table 1. Pest Categories and Descriptions**

<b>Pest Category</b>	<b>How Damage is Caused</b>	<b>Common Species</b>	<b>Control Methods</b>
<b>Chewing Insect</b>	Eats leaves and fruits	Army worm Lady bug Fire ant	Biological material can be used, harmless to humans and animals but works good on chewing insects
<b>Sucking Insect</b>	Plants turn yellow Plants turn white	Stink bugs Leaf hoppers Spider mites	Soap and water Lady bugs
<b>Boring Insect</b>	They attack trees Attack tissues that uptake water	Wood borer Coleopteran Borer beetle	Remove dead lumber and trees Clean dead leaves
<b>Weed</b>	Reduction in crop yield Increase in cost of cultivation	Stinking wile Common couch Pineapple weed Green foxtail	Chemicals Physically pull them out
<b>Vertebrate Animal</b>	Stunted vines Fruit eaten Food striped	Javelin Rabbits hares	Traps Flood irrigation Shooting vine guards
<b>Bird</b>	Eats fruits	Rainbow lorikeet Finch Bird of paradise	Scare crow Fake electric scare owl

<b>Mollusk</b>	Large ragged holes in tender	Snails Slugs	Go picking Traps Chemical warfare
<b>Nematode</b>	Feed on roots of plants Roots can't absorb water	Ascaridid Secernenta	Crop rotation soil solarization