

## 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?

pest survive on different parts of the plant, they specifically attack the part they want, like the nutrients, roots or leaves, and/or flowers.

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

Crop rotation will most likely reduce the amount of pest and harvesting will also help reduce the amount.

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

Pest can eat the leaves, eat the roots, and take the nutrients. The most severe damage to the plant is eating its root, it basically cuts off their path on getting nutrients and water.

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

Whiteflies and probably jack rabbits.

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

Prevent is trying to stop it but eradicating is trying to completely get rid of.

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>	Holes in leaves, poop and decay, eat plant tissues, uneven or broken	Beetles, bees, lady bugs, moths, and horse flies.	Install traps, soaps and soils, install barriers
<b>Sucking Insect</b>	Spread disease and suck nutrients.	Whiteflies, trips, leaf miner, springtail.	Prune, hand vacuum and yellow sticky traps.
<b>Boring Insect</b>	Attack trees, attack tissues, live on them.	Ambrosia beetle, long horned beetle	Remove dead lumber and trees
<b>Weed</b>	Invade crops, reduce crop field, and reduce farming, harms live stocks.	Hare barley, pineapple weed, goosefoot chenopodium	Pull them out, kill them, spray them.
<b>Vertebrate Animal</b>	Stunned vines, fruit eaten and food stripped	Rabbits. Hares. Deers and birds	Toxic baits and shooting
<b>Bird</b>	Feasting on crops, digging holes, transfer diseases to crops.	Pigeon, starling, sparrow, crow, woodpecker.	Mesh nets, electronic sounds, flash tape, spray repellent.
<b>Mollusk</b>	Large holes, damage during springe	Snails and slugs	Go picking, traps and chemicals

<b>Nematode</b>	They feed on the plant roots, roots cant absorb water and nutrients.	Ascardid, parasitic, enoplea	Following, crop rotation, and soil solarization.
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