

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* (2nd 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* (7th 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

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?

They differ in what they do, how they look and how to control them from doing damage.

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

Spraying chemicals.

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

Some pests leave holes in the plant and others just damage the color of it. Holes in the leaf would prevent more damage because it would not be able to grow back

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

Mosquitos

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

Preventing it is stopping it before it happens and eradicating is trying to help the plant when damage has already been made.

Name: _____

Project 8.1.1 Student Worksheet

Table 1. Pest Categories and Descriptions

Pest Category	How Damage is Caused	Common Species	Control Methods
Chewing Insect	The insects eat the leaves and make holes in them	Lady bugs, weevil beetles, caterpillars, fire ants and grasshoppers	Chemicals
Sucking Insect	Insert mouth parts into plant tissue and remove juices	White flies, leaf hoppers, stink bugs, and squash bugs	Use insects such as lady bugs parasitic wasps and insecticides
Boring Insect	Attack the tissues that carry the water in the tree.	Wood borer, coleopteran, vinegroon, beetle	Clean up dead leaves
Weed	Harm live stocks, and reduce crop yields	Goosefoot, hare barley, green fuxtail	Pull out, spray them and kill them
Vertebrate Animal	Burrows, droppings, and gnawing	Wood rats, rabbits, pocket gophers and house mice	Keep surroundings clean
Bird	Destroy trees by making holes in the wood	Finches, honeyeaters, crow, rainbow lorikeet, and bird of paradise	Scarecrows, chicken wire can be laid and buy an owl
Mollusk	Large ragged holes in tender leaves and flowers	Snails, and slugs	Traps, and chemical warfare

Nematode	They feed on the roots of the plants	Enoplea, parasitic, ascardid, secernentea	Sanitation and choice of plant
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