

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 because they all have their different ways of getting food and living.

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

Trap and pull them out

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

Nematode because they absorb water and nutrients

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

Birds, vertebrate animals and mollusk

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

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	Holes in leaves poop and decay eat plant tissues uneven or broken	<ul style="list-style-type: none"> • Armyworm • Lady bug • Weevil beetle • Fire ant • Caterpillars • Grasshoppers 	<ul style="list-style-type: none"> • Install barriers • Install traps • Soaps and oils • Attract beneficial predators
Sucking Insect	These pests damage by inserting their mouthparts into plants tissue and removing juices.	<ul style="list-style-type: none"> • Whiteflies • Leaf miner • Fungus ghatts • Springtall • thrip 	<ul style="list-style-type: none"> • hand vaccum • yellow sticky traps • handpicking • prune
Boring Insect	They attack mainly tree, attack the tissues that carry water.	Cottonwood Ambrosia beetle	Remove dead lumber and trees. Use killing flies like robber flies, assin flies .
Weed	Invade crops Smother postures Harm live stocks	Goose foot Hare barley Pineapple weed Green foxtail	Pull them out Kill them Spray them
Vertebrate Animal	Droppings Gnawing Borrows	Wood rats Norway rats House mice Rabbits Ground squirrels	Keep surrounding dean of weeds and other habitats Traps Get rid of extra weeds

Bird	<p>Feast on crops</p> <p>Dig holes for food</p> <p>Carry diseases</p>	<p>Pigeon</p> <p>Starling</p> <p>Sparrow</p> <p>Crow</p> <p>Woodpecker</p>	<p>Mesh nets</p> <p>Electronic sound spray</p> <p>Repellent</p> <p>Flash tap</p> <p>Plastic bird spikes</p>
Mollusk	<p>Large ragged holes in tender leaves and flowers.</p> <p>Damage during spring before many insects are active.</p>	<p>Snails and slugs</p>	<ul style="list-style-type: none"> • Go picking • Encourage predators • Traps • Chemical warfare • Nematodes
Nematode	<p>Feed the roots of plants</p> <p>Roots absorb water</p> <p>Roots absorb nutrients</p>	<p>Enplea</p> <p>Parasitic</p> <p>Ascardid</p>	<p>Reduce existing infestation</p> <p>Fallowing crop rotation</p> <p>Soil solarization</p>