

Plant Defenses Reading

PART II

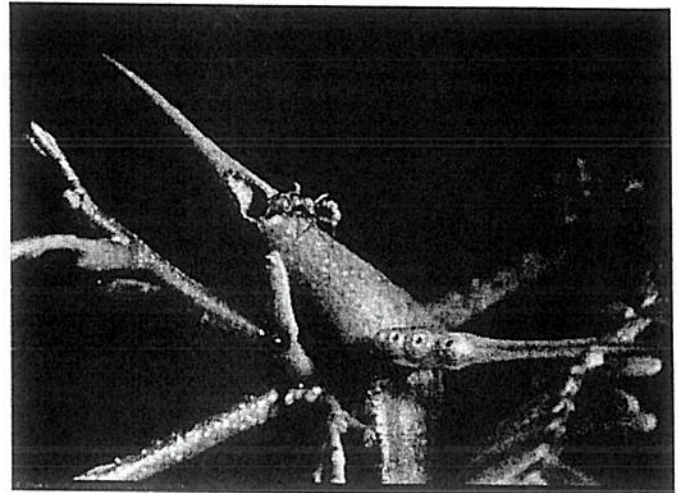
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WHY DOES A ROSE BUSH HAVE THORNS?

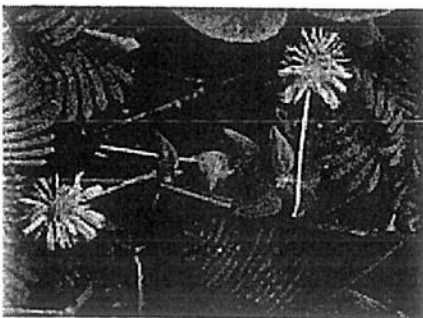
We're all familiar with how a cactus defends itself--with its sharp spines, resembling porcupine quills. Spines, also sported by many other plants, are actually modified leaves. Thorns are modified branches. And the thorns on a rosebush are actually prickles, a sharp outgrowth from the stem. Spines, thorns and prickles defend by forcing plant-eating animals to keep their distance.



Plants may also have toxins, or poisons. The nettle plant, for example, is covered with stinging hairs. Each hair consists of a long, needle-like shaft with a clump of special cells at the base. Touch a hair, and the tip breaks off in your skin, injecting poison. Likewise, the milkweed plant contains a poison that is toxic to the heart of many animals.



Sometimes, plants and insects work together for the benefit of both. The spines of the bulls-horn acacia are a cozy home to ants, which attack and kill other insects that try to eat the acacia.



Other plants protect themselves from predators by responding to a stimulus. The mimosa – or sensitive plant – responds to touch. When a bug lands on the plant, it folds its leaves tightly together. The insects, which are looking for leaves to eat, end up with no meal.

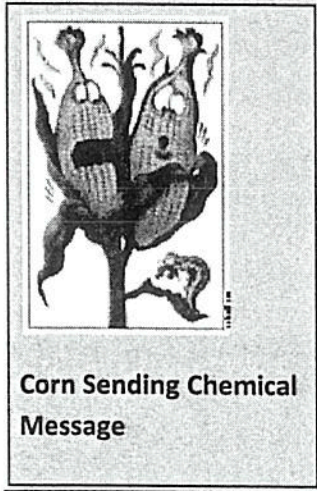
Wollard, Kathy. "Why Does a Rose Bush Have Thorns?." *Technofiles*. 11 Jul 1996: n.p. *SIRS Discoverer*. Web. 24 Jan 2012.

Adapted from: Seeber, Barbara H. "The Secret Life of Plants." *National Geographic Explorer!* (Vol. 9, No. 3). Nov/Dec 2009: 14+. *SIRS Discoverer*. Web. 24 Jan 2012.

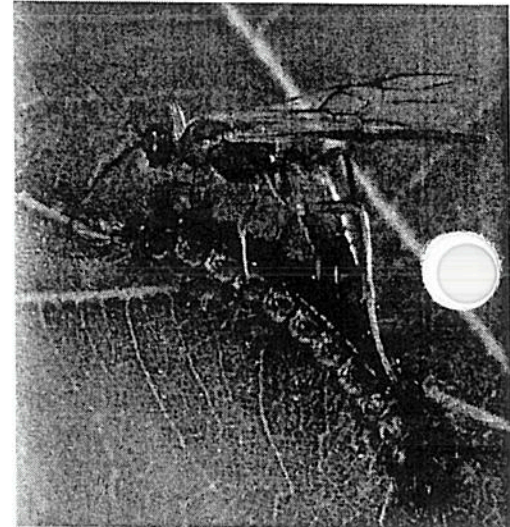
CORN DEFENSES

When a stalk of corn gets munched on by a caterpillar, the plant's leaves often send out a chemical whiff. Here's what happens:

A female wasp may be cruising nearby. She's looking for the perfect spot to lay her eggs. And the perfect spot for this wasp is inside one of those caterpillars. (That way, when the eggs hatch, the wasp larvae – or young – have a caterpillar breakfast waiting for them.)



So when the wasp smells the whiff from the chewed-on corn, it is a stimulus that causes the insect to fly toward the corn. The wasp quickly attacks the caterpillar and lays eggs in it. Before too long, the caterpillar dies as the larvae eat it from the inside out. And so this caterpillar won't ever become a moth that might produce more plant-eating caterpillars.



The chemical message from the plant ends up helping the corn field and the wasp. The wasp finds a home for her eggs, and the corn field will wind up with fewer caterpillars destroying it.

Prescott, Lyle. "Smells That Tell." *Ranger Rick*. July 2004: 11-13. *SIRS Discoverer*. Web. 24 Jan 2012.

<http://en.wikipedia.org/wiki/Rose>

http://en.wikipedia.org/wiki/Stinging_nettle

<http://ecolibary.org/page/DP162>

http://en.wikipedia.org/wiki/Mimosa_pudica

<http://www.esa.org/esablog/research/commercial-corn-varieties-lose-ability-to-communicate-with-their-own-defenders/>

Plant Defenses Questions

Name _____
Date _____
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First, read your article and number the paragraphs. Then, answer the questions about the reading, and provide the number of the paragraph in which you could find the answer.

1. What are spines? Thorns? Prickles?
2. How do spines, thorns, and prickles help a plant defend or protect itself?
3. Provide two examples of how plants use toxins, or poisons.
4. Describe the example of plants and insects working together.
5. From what is the mimosa protecting itself? How does it protect itself?
6. From what are corn plants trying to protect themselves?

Para. #	organism	stimulus	external (E) or internal (I) stimulus	response
1. 3	tree	caterpillars or beetles are chewing its leaves	E	
DOES this help this plant defend/protect itself?				
2. 3	neighboring tree	senses airborne chemicals from trees under attack	E	
How does this help the plant defend/protect itself?				
3. 4	tree		E	
4. 4	woodpecker		E	
How does these 2 stimuli/responses help the plant defend/protect itself?				

