



Crop Protection

STEM Sims

Lesson 1: Pesticide Application

Farmers lose significant amounts of crops to pests each growing season. Your challenge is to select the most effective method of pest control for your crops. What is the most effective pesticide to apply when the crop is planted?

Doing the Science

1. Start the Crop Protection Simulation by clicking on the “Sim” tab.
2. Click on the “Warning” Box, and record the identified pest in Table 1 below, then click on the clipboard to close the clipboard.
3. Click on the “Choose Defense” button.
4. Click on Carbaryl Liquid.
5. Click on the red “Done” button to close the clipboard.
6. Click on the “Submit” button. You have now applied Carbaryl Liquid at planting.
7. Click on the “Choose Defense” button, and unclick the pesticides, so no pesticides are chosen. Click the red “Done” button to close the clipboard.
8. Click the “Submit” button. No pesticides have been used in the 1st Growth Cycle.
9. Repeat steps 7 and 8 for the remaining cycles.
10. Click on the “History” file cabinet. Record your data in Table 1 below. Each color represents a Cycle: Planting, Stage 1 Growth, Stage 2 Growth, and Preharvest.
11. Click the “Reset” button until the same pest listed in Table 1 appears.
12. Repeat steps 3 to 11, changing the pesticides as listed in Table 1 below. Be sure that you run your trials using the same pest listed in Table 1 below, and that the pesticide is only used at planting.

Table 1.

| | Crop Field Size | Insect Population | Pesticide Detection | Crop Quality |
|--------------------------------|-----------------|-------------------|---------------------|--------------|
| Pest: | | | | |
| Carbaryl (Liquid) | | | | |
| Carbaryl (Granular) | | | | |
| Chlorphrifos (Liquid) | | | | |
| Chlorphrifos (Granular) | | | | |
| Permethrin (Liquid) | | | | |
| Permethrin (Granular) | | | | |

Do You Understand?

1. What was the most effective pesticide to use at planting?