

## Lab 1: Dependent and Independent Variables

### Review

The graphs are intended only as samples. Yours are also depend on how students completed the lab or the random data generated by the computer.

1. Describe the effects of the 1000 reflections processed. Were all corn varieties equally affected in controlling the 1000? How do you know?

Yes are all vary depending upon the varieties of corn selected and the level of infestation. Students should describe the relationship between the level of infestation and the amount of corn yield.

2. If there was no 1000 reflection in a certain area, would a farmer gain or lose financially by planting 100 corn?

Yes, yes, the farmer would lose financially by planting 100 corn. The cost of 100 corn seeds is more expensive than other varieties of corn.

3. What might happen if 100 corn affects non-target organisms such as beneficial insects or herbivores insects?

The balance of the ecosystem might be negatively affected if non-targeted organisms are affected by 100 corn. It may reduce the populations of non-targeted organisms.

4. What might happen if 1000 become resistant to 100?

100 might no longer prove to be an effective pesticide to control 1000. This might lead to the need to consider ways to not use plants of 1000, which may lead to other problems in the environment.

5. Discuss possible benefits and drawbacks of a transgenic organism such as 100 corn?

Transgenic organisms are a benefit if they increase the yield of crops. This constitutes the engineering need to provide benefits to increasing world populations. One drawback to transgenic organisms could be that some animals might have allergic reactions after eating this type of food.

6. A farmer planted a field of 100 1000 corn and wants to estimate the yield in bushels of 100 bushels per acre. He counts 22 ears for 10000 ears per acre. He determines that each ear has about 100 kernels on average. He determines that a bushel contains about 100 1000 kernels on average. Estimate the farmer's estimate of yield in bushels/acre?

Approximately 2.75 bushels per acre. To find this yield multiply  $22 \times 100 = 2200$  to obtain the number of corn kernels produced in one acre. Divide by 100 1000 to obtain the number of bushels per acre.