

Investigation II: Fertilizers and Algae

Study the lab report.

Title of Investigation: *Effect of Fertilizer on Algae Growth*

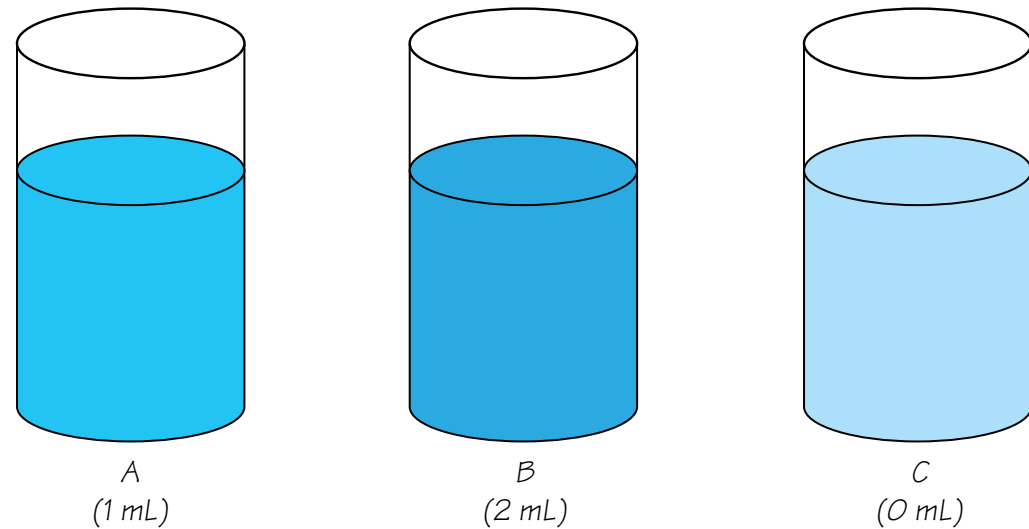
Question(s) to Be Answered: *Can plant fertilizer contained in the runoff from farms and lawns cause overgrowth of algae in lakes and other bodies of water?*

Hypothesis: *Plant fertilizer contains nutrients, such as nitrogen and phosphorus, which plants need for growth and to stay healthy. The addition of fertilizer to the lake water will cause an **algal bloom**—a rapid population explosion of algae.*

Experimental Procedure(s): *Collect three large, clear containers of lake water. Label the containers A, B, and C. Add 1 mL of liquid plant fertilizer to Container A and 2 mL to Container B. Add nothing to Container C. Leave the containers near a sunny window for one week. On the eighth day, compare the cloudiness of the water in the three containers. Cloudiness, or **turbidity**, is a rough indicator of the amount of algae present.*

Results/Data Collected:

Turbidity of Pond Water

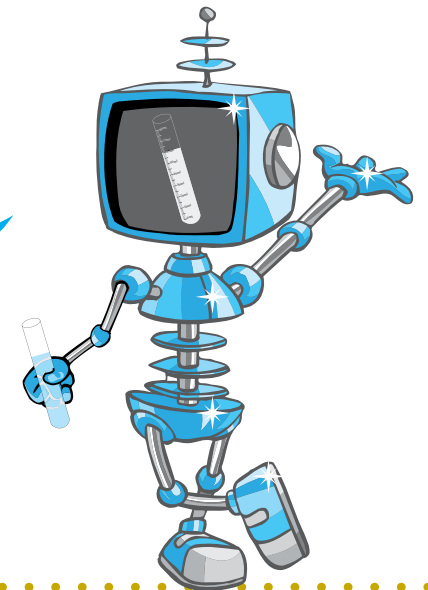


Conclusion: *The container to which 2 mL of fertilizer was added showed the most algae growth. The container to which no fertilizer was added showed the least algae growth. The data supports the hypothesis that fertilizer causes algae to grow quickly.*

Questions for Further Study: *How does temperature affect the growth of algae?*

- 1 The hypothesis states that algae grow quickly in cloudy water. True or False?
- 2 Plant fertilizer contains , which help plants grow and stay healthy.
- 3 What is the term used to describe an algal population explosion?
- 4 What is the manipulated variable in this experiment?
- 5 What is the responding variable in this experiment?
- 6 What was a controlled variable?
- 7 How much fertilizer was added to Container A?
- 8 How much fertilizer was added to Container B?
- 9 How much fertilizer was added to Container C?
- 10 Does this investigation show that algae won't grow in cloudy water?
- 11 More algae grew in container B than in any other container. True or False?
- 12 Was the hypothesis of the investigation supported by the data?

The green algae commonly seen in freshwater lakes and ponds are plantlike protists, which use the energy of the sun to make food.



Answer Box

A 2 mL	B yes	C True	D bloom	E no	F 1 mL
G nutrients	H amount of sunlight	I 0 mL	J turbidity	K False	L amount of fertilizer

Investigating Further

Do some research to learn about red tides, which are harmful algal blooms (HABs).

