



Growing Plants in Sterilized Soil vs. Regular Soil

Name: _____

Date: _____

Experiment #: _____

QUESTION: How does sterilized soil compare to regular soil for growing plants?**BACKGROUND:**

Soil contains nutrients, water, and air that plants need, but it also contains microorganisms. Some microbes help plants, while others may compete with plants or cause disease. Sterilizing soil removes (most) microorganisms. This experiment compares plant growth in sterilized soil versus regular soil.

HYPOTHESIS:

If plants are grown in sterilized soil versus regular soil, then _____

(Write your prediction.)

MATERIALS:

- 2 small pots or plastic cups with drainage holes
- Potting soil
- Oven or microwave (for sterilizing soil)
- Water
- Measuring cup
- Seeds (e.g., bean, radish, or pea)
- Plant labels or tape
- Ruler
- Notebook or science journal

PROCEDURE:

1. Collect enough potting soil for both pots.
2. Sterilize one portion of soil:
 - Oven method: Spread soil on a baking sheet. Bake at 200°F (93°C) for 30 minutes. Let cool. OR
 - Microwave method: Place soil in a microwave-safe bowl. Heat on high for 5 minutes, stir, then heat 3–5 more minutes. Let cool.
3. Label one pot "Sterilized Soil" and the other "Regular Soil."
4. Fill each pot with soil (sterilized in one, regular in the other).
5. Plant the same number of seeds at the same depth in both pots.
6. Water both pots equally.
7. Place both pots in the same location with the same light.
8. Water equally each day and keep observations for 2–3 weeks.

**DATA TABLE** (Record your observations):

Day	Sterilized Soil Plant Height (cm)	Regular Soil Plant Height (cm)	Observations (leaf color, number of leaves, overall health)
0 (Planting)			
3			
3			
7			
10			
14			
21			

CONCLUSION:

What did you learn from this experiment? Did the results support your hypothesis? Why or why not?

ANALYSIS:

1. Which plant grew taller? _____
2. Which plant looked healthier? _____
Why do you think so?

3. Did you notice any differences in leaf color, number of leaves, or growth rate?

4. What might explain the differences you observed?

