



Growing Plants in Aeroponic vs. Hydroponic Systems



QUESTION: How do plants grow in an aeroponic system compared to a hydroponic

HYPOTHESIS: If plants are grown in aeroponic and hydroponic systems, then _____.

MATERIALS

- 2 identical containers (one for each system)
- Aeroponic system setup (mist sprayer, pump, tubing, lid)
- Hydroponic system setup (container, net pot, air stone & pump)
- Nutrient solution (hydroponic nutrient mix)
- 2–4 of the same type of seeds or seedlings (e.g., lettuce or basil)
- pH test kit (optional)
- Measuring cup
- Ruler
- Data sheet (this sheet)
- Water
- Timer or clock
- Labels or tape and marker

AEROPONIC SYSTEM



Roots are misted with nutrient solution.

HYDROPONIC SYSTEM



Roots are submerged in nutrient solution.

PROCEDURE

1. Set up the aeroponic system in one container. Ensure the mist nozzles will spray the roots.
2. Set up the hydroponic system in the second container. Ensure the roots will be submerged in the nutrient solution.
3. Mix the nutrient solution according to the instructions.
4. Place the same number of seeds or seedlings in each system. Make sure they are the same age and size (as close as possible).
5. Label the containers: Aeroponic and Hydroponic.
6. Place both systems in the same location with the same light, temperature, and conditions.
7. Top off solutions as needed to keep nutrient levels appropriate.
8. Observe and record data daily for at least 2–3 weeks.

DATA TABLE

Day	Plant Height (cm)		Number of Leaves		Observations (color, root growth, overall health, etc.)	
	Aeroponic	Hydroponic	Aeroponic	Hydroponic	Aeroponic	Hydroponic
1						
3						
5						
7						
10						
14						
17						
21						

OBSERVATIONS & NOTES

ANALYSIS

1. Which system showed faster growth? _____
2. Which system had healthier-looking plants? Why do you think so?

3. What differences did you observe in the roots?

4. What were the advantages and disadvantages of each system?

CONCLUSION

What did you learn from this experiment?

Would you like to try this again or improve it?