



Observing the Adaptation of Cacti to Water Storage

Question: How are cacti adapted to store water?

Hypothesis: _____



MATERIALS

- 1 small potted cactus
- Ruler (mm)
- Balance or kitchen scale
- Notebook
- Camera or drawing supplies
- Water (for controlled watering)
- Optional: magnifying glass

BACKGROUND

Cacti live in dry environments where water is scarce. They have special adaptations that help them collect, store, and conserve water. In this experiment, you will observe and record some of these adaptations.

PROCEDURE

1. Observe the cactus. Look carefully at its shape, stems, and spines. Record your observations and make a drawing or take a photo.
2. Measure and record the initial mass of the potted cactus (pot + plant) using a balance.
3. Do NOT water the cactus for 7 days.
4. Each day, observe the cactus and record any changes. Measure and record the mass each day at the same time.
5. On day 7, water the cactus with a small, controlled amount of water (about 2–3 tablespoons).
6. Continue to observe and record changes in the cactus for 3 more days. Measure and record the mass each day.
7. Compare the cactus before watering, during the dry period, and after watering.

DATA TABLE

Day	Mass of Potted Cactus (grams)	Observations (appearance, firmness, color, etc.)	Drawing or Photo (see notebook)
Day 0 (before no water)			
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Day 6			
Day 7 (before watering)			
Day 8 (after watering)			
Day 9 (after watering)			
Day 10 (after watering)			

ANALYSIS

1. What changes did you observe in the cactus during the dry period?

2. What happened to the mass of the cactus during the dry period?

3. What changes did you observe after watering?

4. What adaptations help cacti store and conserve water?

CONCLUSION

Use your data and observations to explain how cacti are adapted to store water.



Remember: Use water wisely and return your cactus to a good place to grow!

