

The Effect of Salt on Tomato Plants

Predict the effect of salt on tomato plants.

Slide show and Discussion

Before showing the slide, ask students to think about what plants need for life, and to predict how a tomato plant exposed to salt will fare.

Question: What do plants need to grow?

Answer: Water, sunlight, soil

Question: What happens to a plant when these things are unavailable or not in the right quantities?

Answer: The plant will die.

Question: What do you predict what will happen to a tomato plant that has been watered with a salt solution?

Answer: The plant will die; the plant will wilt, nothing, etc.

Show students the tomato plant comparison slide, and ask them to evaluate their predictions.

Question: Did you accurately predict what would happen?

Answer: Answers vary.

Question: Why does the plant not grow as well?

Answer: The salt water disrupts the plant by pulling water out of its cells. Without a proper balance of water (homeostasis), the plant will grow poorly or die.

Background: Salt as a commodity:

Salt is an essential part of the human diet. Today, it is used for seasoning food, preserving meat without refrigeration, and manufacturing soap and glass. These characteristics and a limited supply made it so important in the past that wars were fought over it and it was even used as a form of salary!

Background: Why does our body need salt?

We use salt to keep a balance of water in each of the cells in our body. When you have too much salt in your blood, the cells shrivel because water rushes out of the cells due to osmosis. When you have too little salt in your blood, the cells burst from too much water again due to osmosis. Salt is needed in order to help muscles and nerves to function and to regulate blood pressure. When we lack salt, our brains cannot function. It is an essential nutrient that we need to stay alive. Without enough salt, organisms would not be able to survive.