

Effect of Freezing Food During Transport

1. Obtain two pieces of produce (use potatoes, carrots, apples, bananas - whatever you want but they should be the same). These will be called your "specimens."
2. Cut one specimen in half. Call this specimen "frozen" and label the two halves "FA" and "FB." Place the two halves in a beaker in the freezer overnight.
3. Cut the second specimen in half, call it "unfrozen" and label the two halves "UA" and "UB." Place them in a beaker and place the beaker in a cupboard.
4. The next day, place FA and UA in separate beakers. Put them in a cupboard.
5. Retrieve FB and compare it to UB. Record any observations.
6. When the frozen specimen (FB) has thawed (this might be the next day), squeeze both specimens (FB and UB). Record any observations. After making your observations, you can discard both FB and UB.
 - a) Identify the specimen that water came out of when it was squeezed.
 - b) Where does the water come from?
 - c) What effect does freezing have on the plant cells?
7. Observe the sections that you placed in the cupboard (FA and UA) every day until decay has begun in both specimens. Record the daily observations. It will be useful to use the binocular microscopes for this purpose.
 - d) Speculate as to why freezing speeds decay.
 - e) What was the first sign of decay? What other signs of decay were evident?
 - f) What causes the decay?
 - g) Why is it important to protect frozen food in the home from thawing?
 - h) During the spring, you can notice a smell of decay. From what you've discovered in this activity, propose an explanation for the smell.
 - i) What is the relevance of this activity to what we've learned about the distribution of food?