



THE UNIVERSITY
of ADELAIDE

Faculty of Sciences

Classroom Activity

10 Big Question: How do we unravel the causes of disease?

Pineapple and Jelly

That probably sounds like a good combination, doesn't it? In this activity we'll look at the enzyme bromelain found in pineapple and how it impacts on the ability of gelatine to set.

For this activity you will need:

- A packet of jelly crystals or plain gelatine
- Boiling water
- Three bowls
- Measuring jug
- Fresh pineapple cut into chunks
- Canned pineapple cut into chunks

Will it set?

1. Make up the jelly or gelatine as indicated on the packet using the boiling water and measuring jug.
2. Split the liquid evenly between the three bowls.
3. Into one bowl, place several chunks of fresh pineapple. Into another, place approximately the same quantity of canned pineapple. Leave the third bowl plain as a control. You may like to label the bowls in some way.
4. Place all three bowls into the refrigerator for a few hours or overnight.
5. Remove the bowls from the refrigerator and observe the contents.

What has happened in each bowl? What was the difference between canned pineapple and fresh? What causes this difference?

What is happening?

Gelatine contains the protein collagen. It sets as long chains of collagen form, trapping the water inside. Pineapple is in the bromeliad family of plants and contains the enzyme bromelain. Bromelain breaks down the collagen chains as they form, preventing the gelatine from setting properly.

Canned pineapple is heat treated as part of the canning process. The heat denatures the enzyme making it less efficient.