

Egyptian Science - Mummify a tomato!

Mummies are fascinating relics of the Egyptian civilization and a great place to start investigating - not with a real body, of course, but with a tomato!

The ancient Egyptians believed that the body of a dead person needed to be preserved in order that the spirit of the deceased could live on in the afterlife. To begin with, Egyptians probably noticed that bodies buried in the dry, hot sand of the desert tended to dry out naturally and become mummified. As their civilisation became more developed, complicated rituals and processes evolved to produce more sophisticated mummies.

The first step in mummification is to get rid of the wet and gooey stuff; dry materials are less likely to rot and decay than damp ones. Unfortunately for budding embalmers, tomatoes, like us, contain a huge amount of water. The drier we can get our tomato the less likely it will rot.

Investigation 1

Before you start - observe your tomato really carefully. What does it feel like, smell like, what colours can you see, what about the texture of the skin? Keep an un-mummified tomato as a control to provide a comparison.

To dry out our tomato we need to make a small incision in the fruit and scoop out the seeds inside. You can throw these inside bits away. The Egyptians did the same with the internal organs. They kept the heart, which they placed inside the mummy, and the lungs, liver, stomach and guts which were kept inside canopic jars for protection.

The body cavity was then washed with wine; the alcohol was supposed to kill germs. Instead you can carefully rub the tomato inside and out with a dilute anti-bacterial solution like 'Milton' then dry the excess with kitchen paper.

Now weigh your mummy. This is the premummification weight with water.

Next you need to pack the tomato with a type of naturally occurring salt called natron. We can't easily get real natron, but we can make it from a mixture of table salt and bicarbonate of soda; Epsom salts work well too.

Pack your tomato cavity with your natron and then place it in a container so it is completely covered with the salt and bicarbonate of soda mix. Check its progress every few days; you may need to replenish the natron to keep it dry.

The Egyptian embalmers had to wait 70 days to complete their mummy, yours should be ready in a couple of weeks. What does it look like now? How has the colour changed, the texture? Weigh your tomato again - the difference is the weight of the water that has now been removed.

Despite this painstaking procedure, it was evaporation, caused by the hot and dry Egyptian air, that helped the mummification process the most. You can investigate this using salt water.

Investigation 2

Mix up a solution of salt and water to the point where no more salt crystals will dissolve into the water. Now use the solution to paint a simple Egyptian symbol, such as an ankh,



on a piece of black card; you might need to go over it once or twice to apply enough salt water. Leave it to dry - what happens?

You should end up with a shimmering white image on the black card where the water has evaporated leaving the salt behind. Where has the water gone? Can you investigate ways to speed the evaporation process up?