

Background

Eating vitamin C is important to our health. Vitamin C is a chemical that helps our bodies to form teeth, bone, blood vessels and connective tissue, as well as assisting in processes in our bodies like the absorption of iron. Vitamin C is found in many foods including several fruits and vegetables. We must eat these to stay healthy.

In this experiment we use an indicator to test how much vitamin C some types of fruit contain. An indicator is a substance that changes colour when chemicals are added. The indicator we use is a cornstarch/iodine indicator. It is normally a purple-blue colour but when vitamin C is added it turns colourless.

You can compare the amount of vitamin C in different juices by counting how many drops are needed to change the colour of the indicator. The more vitamin C that is in your juice, the smaller the number of drops you need to add to make the indicator change colour. This kind of experiment is called a titration.

Your task

In this investigation your task is to find out which type of fruit contains the most vitamin C.

First you need to develop your own method to extract some juice from your fruits. Think about the extraction techniques you have learnt and decide which ones will be useful. Write and follow your own method for how to do this.

Once you have extracted the juice follow the procedure below to test it to see how much vitamin C is in it.

Your teacher will supply you with equipment that you may use (although you don't need to use it all).

Equipment available

- variety of fruit
- 100 mL beakers
- funnel
- filter paper
- Pasteur pipettes or eye droppers
- 10 mL measuring cylinder
- sieve
- mortar and pestle
- chopping board
- knife
- electronic scales (not essential but may be useful for fair testing)
- cornstarch/iodine indicator solution
- piece of white paper

Procedure to test for vitamin C

1. Put 10 mL of cornstarch/iodine indicator solution into beaker.
2. Place white paper under the beaker to see colour changes clearly.
3. Use Pasteur pipette to add drops of fruit juice to indicator.
4. Swirl beaker after adding each drop.
5. Count how many drops of liquid are required to make indicator colourless.

Note that liquids to be tested must not be too strongly coloured or it will be difficult to see the colour change.