

Vitamin C Analysis

Time required 1day

Iodine solution preparation: (0.005 mol L⁻¹).

- Weigh 2 g of potassium iodide into a 100 mL beaker.
- Weigh 1.3 g of iodine and add it into the same beaker.
- Add a few mL of distilled water and swirl for a few minutes until iodine is dissolved. Transfer iodine solution to a 1 L volumetric flask, making sure to rinse all traces of solution into the volumetric flask using distilled water.
- Make the solution up to the 1 L mark with distilled water.

Starch indicator solution: (0.5%).

Weigh 0.25 g of soluble starch and add it to 50 mL of near boiling water in a 100 mL conical flask.

Stir to dissolve and cool before using.

Procedure

Sample Preparation

Fruits and vegetables:

- Cut a 100 g sample into small pieces and grind in a mortar and pestle. Add 10 mL portions of distilled water several times while grinding the sample, each time decanting off the liquid extract into a 100 mL volumetric flask.
- Finally, strain the ground fruit/vegetable pulp through cheese cloth,
- Rinsing the pulp with a few 10 mL portions of water and collecting all filtrate and washings in the volumetric flask.
- Make the extracted solution up to 100 mL with distilled water.

Titration

1. Pipette a 20 mL aliquot of the sample solution into a 250 mL conical flask and add about 150 mL of distilled water and 1 mL of starch indicator solution.
2. Titrate the sample with 0.005 mol L⁻¹ iodine solution. The endpoint of the titration is identified as the first permanent trace of a dark blue-black colour due to the starch-iodine complex.
3. Repeat the titration with further aliquots of sample solution until you obtain concordant results (titres agreeing within 0.1 mL).