

## **2.4 Mineral Content Analysis via Atomic Emission Spectroscopy (AES)**

This approach uses Atomic Emission Spectroscopy (AES) to determine the mineral composition of banana samples.

### **2.4.1 Materials**

- Atomic Emission Spectrometer (AES)
- Concentrated nitric acid for digestion
- Hot plate
- Analytical balance
- Deionized water
- Filter paper
- Volumetric flask (50 mL)

### **2.4.2 Procedure**

#### **Sample Digestion**

An analytical balance was used to weigh roughly 0.5 grams of dry banana powder.

Ten millilitres of strong nitric acid were applied to the sample in a beaker.

To ensure full digestion of the sample, the combination was heated on a hot plate at a certain temperature until the solution turned clear. Usually, this process takes between thirty and forty-five minutes.

#### **Filtration and Dilution**

The material was allowed to cool to room temperature following digestion.

To get rid of any insoluble residues, filter paper was used to filter the digested material.

To guarantee an exact final volume for AES analysis, the filtrate was moved to a 50 mL volumetric flask and diluted to the appropriate level with deionised water.