Tests for alkaloids

Chemicals required: Mayer's reagent, Wagner's reagent, Dragendorff's reagent

Apparatus required: Test tubes, Dropper, Pipette

Theory:
Alkaloid is a class of nitrogenous organic compounds of plant origin which have pronounced physiological actions in humans. They include many drugs (morphine, quinine, ephedrine etc) and poisons. Plants containing alkaloids are datura, opium, belladona, coffee etc

Reagent preparation

Mayer's reagent: 1.358 g of $HgCl_2$ was dissolved in 60 ml of hot water. It was mixed with a solution of 5g of KI in 10 ml of water. Then sufficient water was added to make 100 ml.

Dragendorff's Reagent
Dragendorff's reagent is prepared by mixing a concentrated solution of potassium iodide with a solution of bismuth subnitrate in a diluted acid (acetic acid or tartaric acid, hydrochloric acid or sulfuric acid is rarely being used) as a low pH is mandatory for this reagent.

Wager's Reagent
16.6 g of KI was dissolved in 100 ml of distilled water. Few crystals of I_2 were added to the solution and stirred properly.

Procedure and Observation

Sample: Datura seeds ethanolic extract

Test	Procedure	Observation	Inference
Mayer's Test	Few drops of Mayer's reagent were added to plant extract	Formation of white or cream precipitate	++
Dragendorff's Test	Few drops of Mayer's reagent were added to plant extract	Formation of orange ppt	+
Wagner's Test	Wagner's Reagent	Formation of red ppt	++

Result
This way alkaloids were tested in pharmacognosy lab.