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FLOURESCENCE ANALYSIS OF *MUSA PARADISIACA* L. OF SUB-FAMILY MUSACEAE

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ABSTRACT

A very important generalization made by Stokes in 1852 "in fluorescence the fluorescence light is always of greater wavelength than the exciting light". Light rich in short wavelengths is very active in producing fluorescence & for this reason strong ultraviolet light produces fluorescence in many substances which do not visibly fluorescence in day light or normal light. In the present study *Musa paradisiaca* L. belonging to family- Scitaminae and sub-family Musaceae Linn. was selected as it is an easily available plant & it very important economically. West Africans makes fishing lines with the fiber. In the Philippines, people weave banana leaves into clothing; in Ceylon, they use the leaves to make the soles of shoes.

KEYWORDS: *Musa paradisiaca*, fluorescence, ultraviolet, normal light.

INTRODUCTION

Musa paradisiaca L. belonging to family- Scitaminae and sub-family Musaceae Linn. (Almeida, 1990).

Vernacular Name: Sanskrit- Kadalii; Hindi- Kela; English- Banana; Bengali- Kala; Sinhalese-Kaesaela; Japanese-Banana; Chinese-Xiāngjiāo; German- Banane; Arabian-Knos; Tamil- Valai. (Kapoor, 1990)

The plants are large usually tree-like perennial herbs with pseudostems formed from overlapping leaf sheaths, with laticifers and rhizomatous. Leaves large, spirally arranged, simple, entire, margin often torn and blade appearing pinnate, venation parallel with stout midrib, sheathing at base. (Sharma, 1993)

Chopped up banana leaves, including the plant's stem, serve as mulching material. Whole leaves protect other crops from the hot sun. People fold banana leaves into planters, use it as heavy-duty paper or use the fiber to make rope, string and baskets. Ecuadorians use the leaves for seat cushions (Kapoor, 1990).

MATERIALS AND METHODS

- The plant material, leaves of *Musa paradisiaca* for the present work was collected from Madh Island, Panvel and Railway tracks of Andheri (Mumbai) & authenticated. The leaves were dried under shade and the leaves were powdered using household electric blender and the fine powder was used for the analysis. (Khandelwal, 2007).

The fluorescence analysis was carried out as mentioned by Chase & Pratt 1949.

OBSERVATIONS AND RESULTS

Fluorescence analysis of powder of *Musa paradisiaca*.

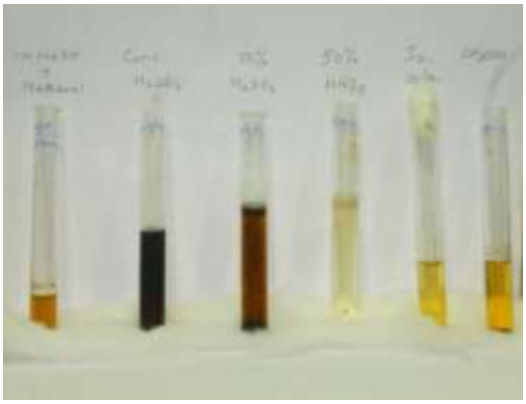
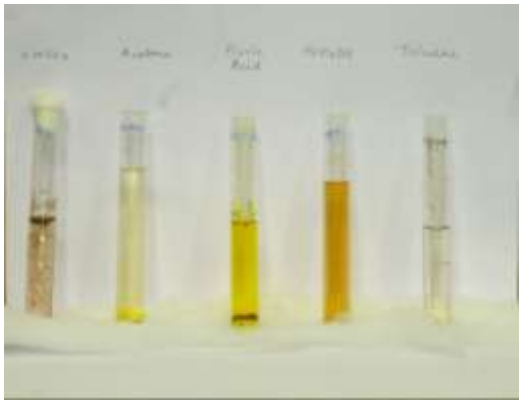
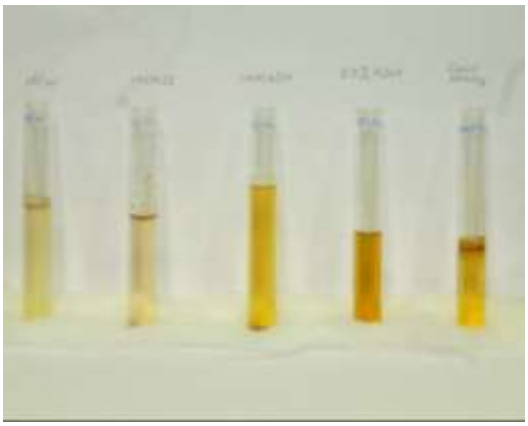
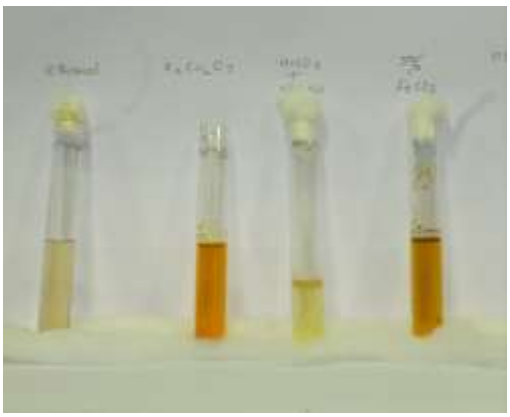
Powder + reagent	Visible light	U.V. light
1N HCl	Colourless	Colorless
1N NaOH	Dull Yellow	Yellowish Brown
1N NaOH + Methanol	Light Brown	Dark Brown
50% KOH	Dark Brown	Dark Brown
50% H_2SO_4	Dark Brown	Black
Conc. H_2SO_4	Black	Black
Conc. HNO_3	Dark Yellow	Greenish Yellow
Acetic Acid	Yellow	Yellow
50% HNO_3	Colourless	Colorless
Iodine solution	Light Yellow	Fade yellow
Distilled water	Light yellow	Colourless
$CHCl_3$	Reddish Brown	Colourless
Acetone	Yellow	Colourless
Picric acid	Yellow	Dirty Green
Ammonia	Dirty green	Light orange
Ethanol	Buff	Colourless
Toluene	Colourless	Colourless
$K_2Cr_2O_7$	Orange	Orange Brown
$HNO_3 + NH_3$	Light Yellow	Colorless
5% $FeCl_3$	Dirty brown	Brown

RESULT AND CONCLUSION

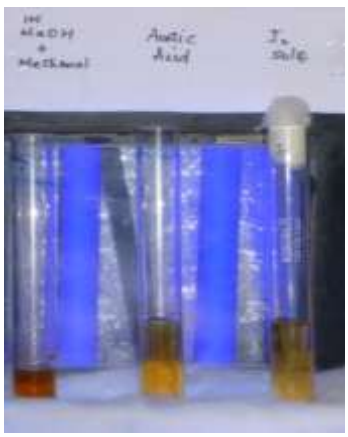
Fluorescence is the phenomenon shown by various chemical constituents present in this plant material. The light absorbed and remitted radiations by the various solvents can be used for

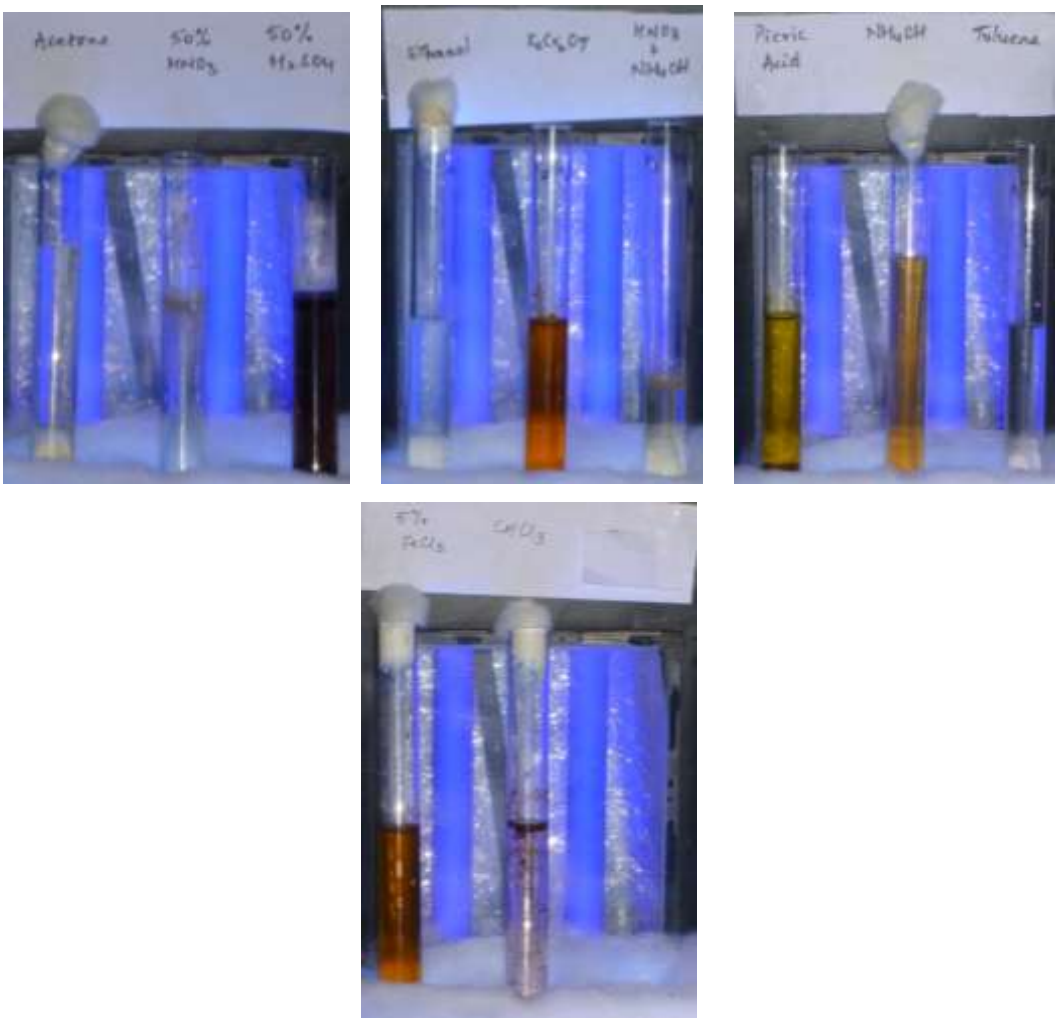
the identification of the powdered drug Evans (2002). Taking into consideration the medicinal properties of the plant, it can be explored for additional pharmacological properties. The fluorescence analysis of powdered drug plays an important role in determining the purity of the drug. Since the plant *Musa paradisiaca* shows a good result in the fluorescence analysis it could be explored for bioactive molecules, which are medicinally important.

FLUORESCENCE ANALYSIS IN NORMAL LIGHT

FLUORESCENCE ANALYSIS IN UV LIGHT



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