

The Study on Natural dyes extract of Jamblang, Butterfly pea flower, Turmeric powder, Henna leaves, Pomegranate, & Hibiscus Testing Potency with Blood Cells Morphology

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Abstract- The staining efficacy of jamblang fruit, butterfly pea flower, turmeric powder, henna leaves, pomegranate seeds, & hibiscus flower crude extract freely and combined with natural acidic & basic dye extract, synthetic dye of methylene blue & eosin testing potency with blood cells morphology as alternative stain for regular stining chemical in blood smear preparation.

Keywords: Jamblang fruit, Butterfly pea flower, Turmeric powder, Henna leaves.

I. INTRODUCTION

Natural sources, from plants, insects, minerals, they are not harmful for the environment. Staining of cell components is done by some dyes which have natural aromatic structure like anthocyanins. Dyes are generally used to add color to plant and animal tissues, microbes and spores to make them optically distinct. The natural dyes were extracted from pomegranate seed, turmeric powder, butterfly pea flower, hibiscus flower, jamblang fruit, henna leaves and distilled. The isolated colored extract was then used to stain the prepared normal blood smears.

Aim and Objective:

Aim of this study on natural dyes extract of jamblang fruit, butterfly pea flower, turmeric powder, henna leaves, pomegranate seeds, & hibiscus flower testing potency with blood cells morphology.

II. METHODOLOGY

Selection of Plant: Butterfly pea flower petals, Red colored Hibiscus flower petals ,Well ripen

Pomegranate seeds ,Fresh henna leaves, Turmeric powder ,Ripen naval fruit.

- **Preparation of extract from natural plants:** Mash the selected portion using motar & pestle. Extract was purified by 2 steps filtered through wire mesh & Whatman paper. Cooled and stored at 4°C.
- **Blood smear preparation:** The drop of EDTA blood was spread forming a bullet shape occupying approximately 2/3 of the entire film slide. The smear was air dried.
- **Fixations of blood smear:** 50 ml 70% of ethanol was prepared and stored in copplin jar. The blood smear is fixed in 70% ethanol for 2 minutes.
- **Staining with Natural dye extract:** Stain the blood smear with natural dye extracts of naval fruit, pomegranate fruit, hibiscus flower, turmeric powder, henna leaves, butterfly pea flower in the slide.Wait for 1 hour.Wash in distilled water.
- **Staining with Natural acidic/basic dye extract:** The extract of pomegranate seeds with butterfly pea flower and turmeric powder with

butterfly pea flower was flooded in 2 different blood slides. Wait for 1 hour. Wash in distilled water.

- **Staining with Natural Dye with Synthetic Dye:** Flood the blood smear with natural dye extract with synthetic dye eosin & methylene blue Wash between the time intervals 15mins, 30mins, 1hr respectively.
- **Microscopic observation:** Observe, blood cells morphology under microscope 10x low power, 40x high power & 100x oil immersion.
- **Interpretation:** Rbc-Round, non nucleated. WbcNucleated, irregular round. Platelets-Small & non nucleated.



Figure 1: Extracts of Natural Dyes

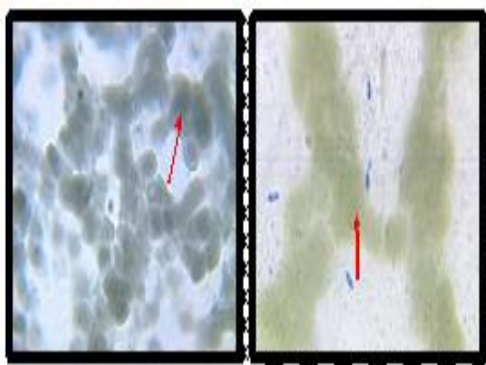


Figure 1: Extraction of natural dye from jamblang fruit & pomegranate seeds; RBC's were stained not clear. WBC's & platelets were not seen.

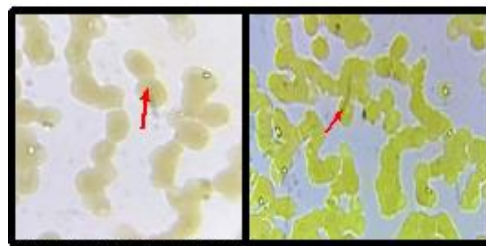


Figure 2: Extraction of natural dye from butterfly pea flower & hibiscus flower; RBC's were stained defined cells morphology . WBC's & platelets are not identified.

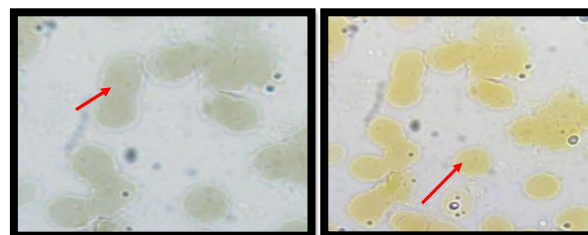


Figure3: Extraction of natural dye from henna leaves & turmeric powder; RBC's were stained defined cells morphology. WBC's & platelets are not identified.

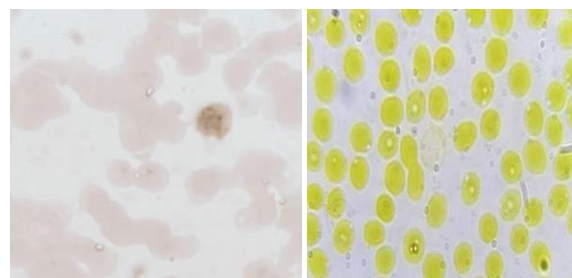


Figure 4: Extract from butterfly pea flower with pomegranate & butterfly pea flower with turmeric powder; RBC'S & WBC's were stained defined cells morphology . platelets are not identified.

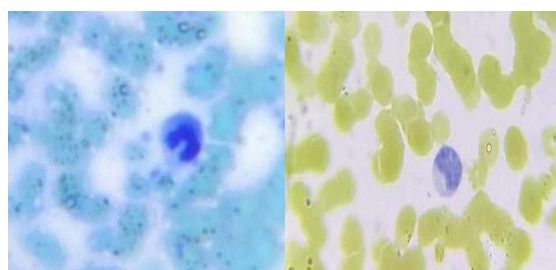


Figure 5: Extract from jamblang fruit with methylene blue & pomegranate seed with methylene blue; RBC'S & WBC's were stained defined cells morphology . platelets are not identified.



Figure 6: Extraction of butterfly pea flower with eosin ;RBC'S stained defined cells morphology . WBC's, platelets are not identified.

PHYSICAL PROPERTIES	HENNA LEAVES	POMEGRANATE SEEDS	HIBISCUS FLOWER	JAMBLANG FRUIT	TURMERIC POWDER	BUTTERFLY PEA FLOWER
COLOUR	Orange colour	Light pink colour	Pink colour	Purple colour	Yellow colour	Dark blue colour
pH	Acidic pH	Acidic pH	Acidic pH	Acidic pH	Acidic pH	Basic pH
CONSISTENCY	Water like consistency	Water like consistency	Water like consistency	Water like consistency	Water like consistency	Water like consistency

Table -1: Physical Properties of Natural Dye Extract

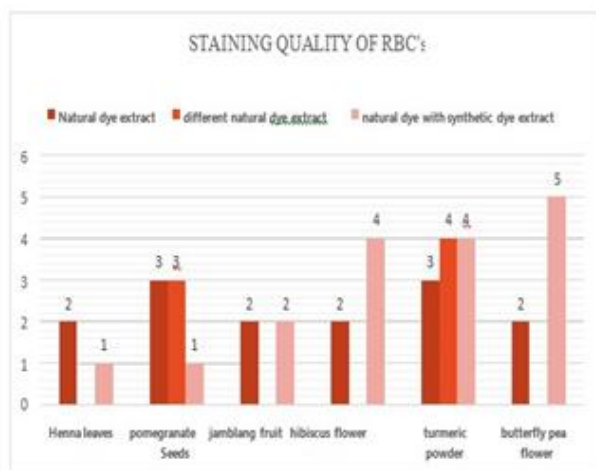


Chart -1: Staining Quality of Rbc's

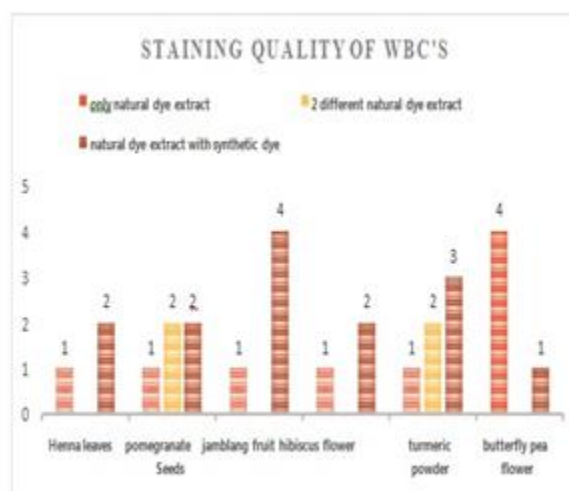


Chart -2: Staining Quality of Wbc's

III. CONCLUSION

Based on the results the staining capacity of jamblang fruit, butterfly pea flower, turmeric powder, henna leaves, pomegranate seeds, & hibiscus flower showed a significant difference in staining the blood smear for morphology of the blood cells. The stain allows better morphological identification of WBC's & RBC's.

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