

Monthly Programme Report

Maharaja's College BMC

Institution Name: **Maharaja's College**

BMC Code: **ERM/2022/32**

Programme Title: **Paper making from Agrowaste**

Program Category: Studies/Research Projects	Activity Type: Action Program	No. of participants: 04
Planned Date: 27-03-2026	Renewed date: -	Program Date: 12-06-2026
Budgeted Amount: Rs 2000/-	Total expenditure: Rs 580/-	Balance: Rs 1420/-

Brief Report

The present study attempted to make handmade paper from easily available agro-waste raw materials using a simple and inexpensive methodology. Various plant materials including *Eichhornia crassipes*, *Musa paradisiaca*, *Cocos nucifera*, *Ananas comosus*, *Citrus sinensis*, *Allium cepa*, *Allium sativum*, *Citrullus lanatus*, *Artocarpus heterophyllus*, and *Mikania micrantha* were utilized for handmade paper production, with Whatman Grade 1 filter paper serving as the control. The prepared paper samples were evaluated for water absorption potential, oil absorption potential, methylene blue colour absorption, water solubility, pH, folding endurance (fragility test), and biodegradability.

The results revealed considerable variation among the paper samples depending on the fibre source. *Mikania micrantha* exhibited the highest water absorption potential, while *Citrus sinensis* showed maximum oil absorption capacity. Higher methylene blue colour absorption was observed in *Allium cepa* and *Artocarpus heterophyllus*, indicating better dye adsorption ability. Water solubility studies showed that *Mikania micrantha* had the highest solubility percentage, whereas *Artocarpus heterophyllus* and the control sample exhibited lower solubility and greater water stability.

The pH analysis indicated acidic, neutral, and alkaline characteristics among the samples, with *Citrullus lanatus* showing the highest alkaline pH and *Citrus sinensis* exhibiting strong acidity. Folding endurance tests demonstrated superior durability and flexibility in papers prepared from *Allium cepa* and *Allium sativum*, while *Cocos nucifera* showed extreme brittleness. Biodegradability studies revealed that *Citrus sinensis* and *Mikania micrantha* possessed the highest degradation percentages, indicating enhanced environmental degradability.

Overall, the study demonstrates that the properties of handmade paper are strongly influenced by the type of plant fibre used. The findings highlight the potential utilization of agricultural and plant wastes as sustainable, biodegradable, and eco-friendly raw materials for handmade paper production with diverse functional applications.

Expenditure Statement

Item	Expenditure	Remarks
Raw materials	Rs 580	
Budgeted Amount		Rs 2000
Total Expenditure		Rs 580
Balance Amount		Rs 1420

Photographs

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