

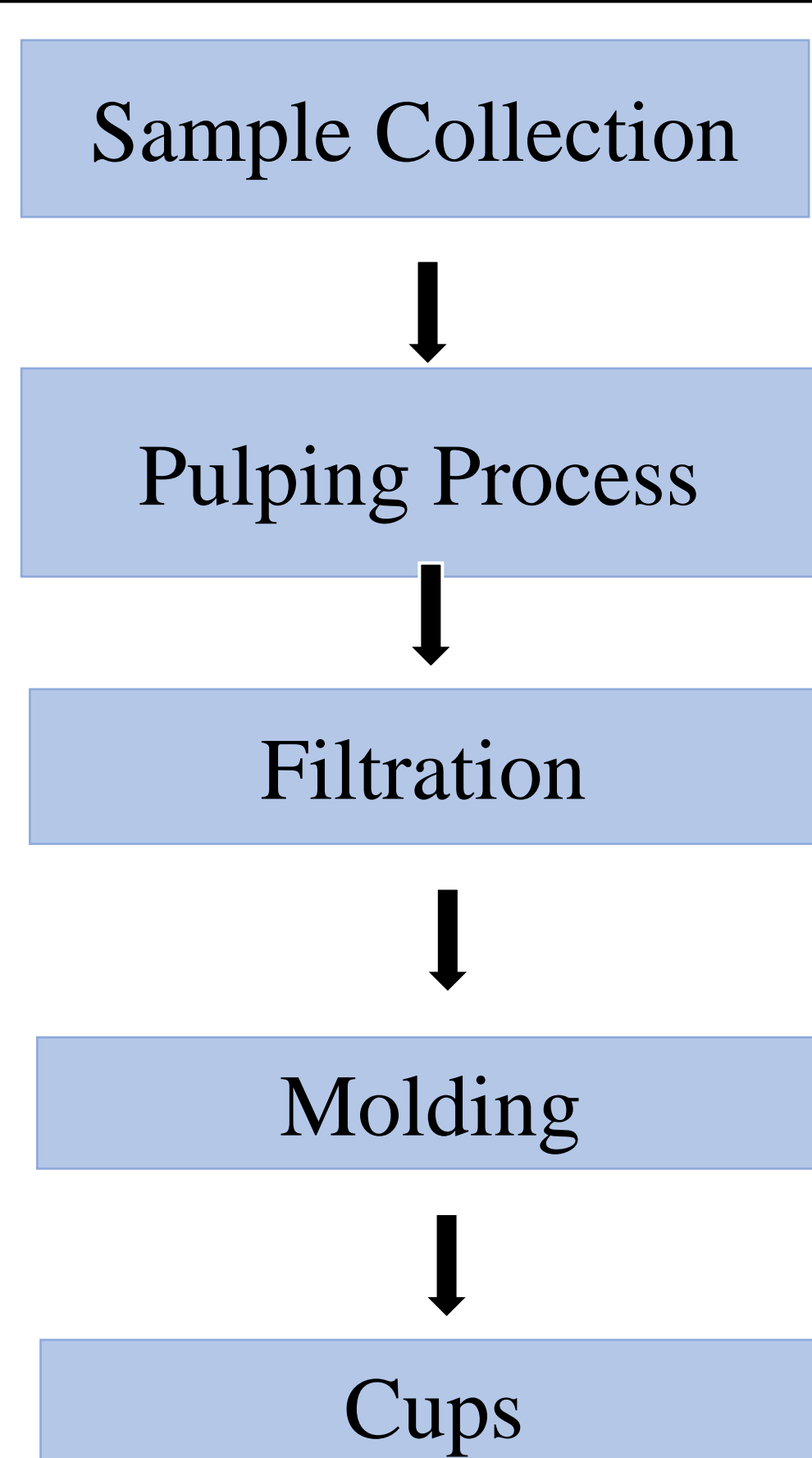
ABSTRACT

While past studies have been carried out to form eco-friendly disposable tableware using non-wood biomass, there is no present groundwork so far where wastes has been used for such purpose, which is novel to this research work. Soda pulping followed by molding was done to produce composite cups. Beeswax coating thickness of 0.70 mm on the cup was adequate to retain cold water for 30 min (minimum) without any leakage. The cup also biodegraded completely in both active soil and damp sand environments within 5 and 6 weeks, respectively. Results therefore reveal that fiber extraction from peel wastes to produce eco-friendly, biodegradable disposable paper cups is viable.

INTRODUCTION

This study therefore assesses whether the production of 100% biodegradable disposable paper cups with acceptable strength properties using plant. The cups were tested using relevant standard in terms of appearance and structure, strength, weight load, water leakage and biodegradability to find the optimum cup composition by comparing with suitable control. Hence, while much research has been done in developing bioplastic, to produce lemon peel-based bioplastic with glycerol, alginate as plasticizers to increase the tensile strength.

METHODOLOGY

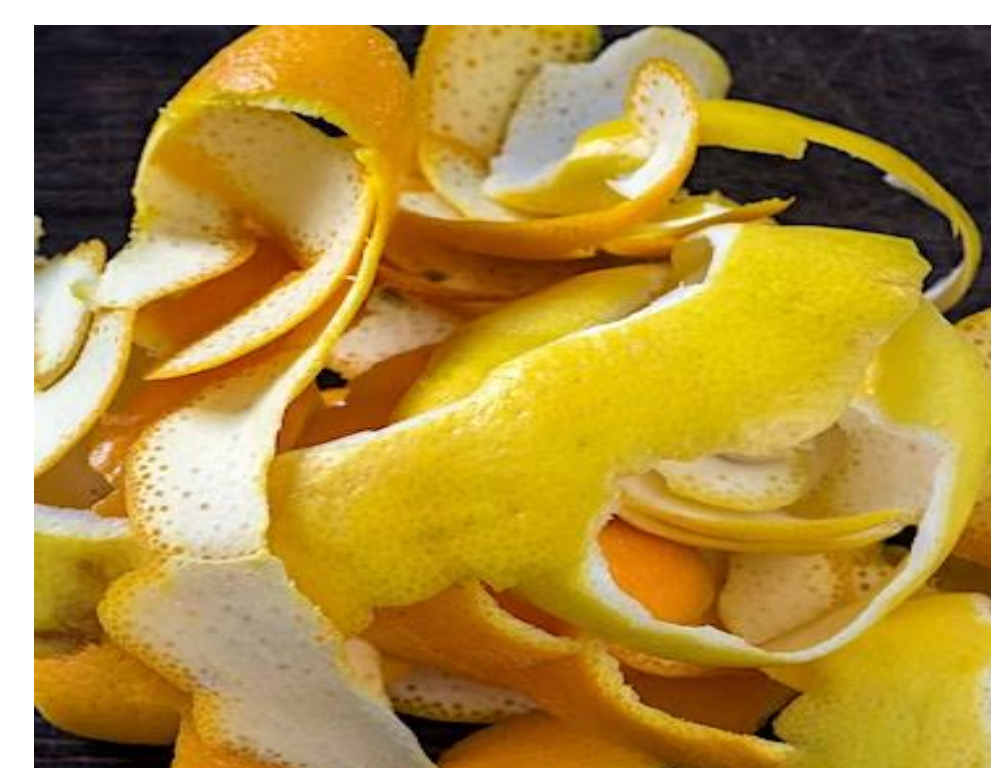


PLASTIC CUS VS BIODEGRADABLE CUPS

Eco friendly cups are advantageous over plastic cups as these are biodegradable and can be recycled whereas plastic is harmful because it is non biodegradable, causing effects like decrease in soil quality, hindering the growth of soil microflora etc. Regular use of plastic cups can lead to health problems, as harmful toxins can leach into the drink, especially under heat.

RESULTS AND DISCUSSION

This project saves our environment from harmful bacteria. As these cups are biodegradable, and plantable and recycled whereas plastic cups are not. Because it causing effects like decrease in soil quality, hindering the growth of soil microflora etc. Regular use of plastic cups can lead to health problems, as harmful toxins can leach into the drink, especially under heat.



CONCLUSION

This study demonstrated that fiber extraction from wastes which are feedstocks otherwise disposed of as agricultural waste in the landfill and utilizing the transformed fibers in the production of an eco-friendly, biodegradable disposable paper cup is a feasible option. Furthermore, this research work opens prospects for further research with respect to improving the properties of these paper cups by considering alternative waterproof coatings that enhance the mechanical strength of the paper cups as well as performing other studies related to paper cups to evaluate their service performances for further comparisons.

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ACKNOWLEDGEMENT

A very big thank you to our whole department for providing us an opportunity to share our ideas to others. We are thankful to Dr. Najma Rasool, Chairperson of the department and Ms. Aasma Hashmi supervisor, for mentoring us in this research opportunity