

Production of Wet Tissue Using Natural Plant

**Perera, P.A.R.H.¹, Rajapaksha, S.S.¹, Nirosha, A.W.D.¹, Yasassri, M.A.H.¹,
Weerasinghe, W.D.C.¹**

¹*Department of Materials Technology, Faculty of Technology,
Rajarata University of Sri Lanka.*

**ent1718067@tec.rjt.ac.lk*

The demand for wet wipes is on the rise due to the increasing global population. However, due to commercially sold wet wipes are made of non-biodegradable synthetic fibers, tend to microplastic pollution, there have been many attempts to use natural plant fibers as substitutes for the production of wet tissues. Exploring natural plant fibers, such as corn husk, as alternatives for wet tissue production is a sustainable solution to fulfill the demand. This research aims to comprehend the process of making wet wipes from corn fiber. The fiber extraction process is initiated by treating the corn husk pulp with NaOH followed by a bleaching process. Then for the treated pulp, the bleaching process was conducted by ranging H₂O₂ 20%-80% while maintaining a constant temperature. The bleaching sample was required to be bleached with a 35% concentration of H₂O₂ for 30 minutes while maintaining a constant temperature of 70°C. The results of tissues were found to be comprised of 45% fiber content, with a digestion time of 40 minutes. Bleaching makes tissues stronger by reducing lignin, allowing fibers to bond more effectively. The most effective binder solution resulted from the composition of 60 g corn fiber, 1.5 g corn flour, and 1 g Polyvinyl Alcohol (PVA). The most effective wetting solution resulted from 24% water, 70% ethanol, 2% rose water, 4% Glycerin by varying 4 samples solution with varied water 24% - 64% and ethanol 30% - 70%. These biodegradable wet tissues pH test obtained 6.81. Bacterial test conducted on 2 samples showed no colony growth.

Keywords: *Corn husk; NaOH; Polyvinyl Alcohol; Fiber extraction; Wet wipes; Fiber digesting*