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Exploration of a combined technology package for extraction of pineapple leaf fibre – An agro waste, utilization of biomass and a future prospect for sustainable luxury textiles

S K Dey

ICAR- Central Institute for Research on Cotton Technology, India

The treasure of Major natural fibres belongs to cotton, jute, wool, silk, which are extensively used across the globe. Utilization of underexploited, unexplored natural fibres from crop waste are not only critical issues in the international scenario but are also the need of the hour to search out a suitable avenue for which separate spinning system is not widely available. Pine apple leaf fibre successfully tested as a base material for conveyor belts in the early eighties, could well have been the magic yarn of the day. Pineapple leaf fibre extracted from the green pineapple leaf reveals its immense potentiality in the field of textiles particularly due to the disposal problem after harvesting for cleaner and green environment. Besides, it is a low cost renewable resource and eco-friendly material. If the apparent demerits can be masked, a diverse range

of products can be developed by exploiting the intrinsic properties of PALF. Therefore, binary blending will give a wider application for production of value added diversified products which are the need of the hour. The present paper is an endeavor to outline the complete package for extraction of PALF and utilization of the residual biomass debris from the pineapple leaf scratching machine for vermicomposting which is economically viable and remunerative for the pineapple cultivators. The paper also delineates suitable processing technique for conversion into textiles using existing fibre processing system and their possible commercial utilization. The PALF blended yarn has a bright future prospect for sustainable luxury textiles like fancy apparel products.

syamalkumardey@gmail.com