



Innovating Technologies for Abaca Biomass Wastes Recovery and Value Adding in Catanduanes, Bicol, Philippines

Arnulfo P. Malinis

Bicol University, Philippines

*Correspondence

Department of Development Management & Department of Agricultural Engineering, Bicol University, Polangui, Albay 4506, Philippines

E klinulmalinis@gmail.com

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Abstract

An innovative processing technology was designed and tested to recover biomass wastes for value adding based on the analysis of the present technology landscape for abaca postproduction and the profile of abaca biomass fiber and wastes in the different processing operations. The study showed that the technology landscape analysis for abaca postproduction is mainly on fiber processing and none for juice extraction and utilization. Manual and spindle methods of fiber extraction utilized 33.0% of the fresh weight of stalks with 67% unutilized or as wastes compared to the decorticator with 15% and 85%, respectively. Wastes from tuxying to include pith showed the highest recovery at 30.08% compared with topping at 16.39% and trimming at 14.57%. The three fiber extraction methods were significantly different in terms of fiber and waste recovery using three varieties of abaca from two locations in Catanduanes. The designed innovative processing method for wastes recovered 70% juice and 22% meal with 8% losses for tuxies, pith, pseudostem base, and stripping wastes, while 33.3% juice and 57.7% meal with 9% losses for leaves and petioles. The primary product for marketing is the juice at PhP 2.00 per liter production cost. The dried meal was made into abaca fiber pots and abaca “green” fuel. The process showed a return on investment of 52% with a payback period of 1.82 years at an investment cost of PhP 120,000. The innovation provides added value to abaca and shows positive prospects to abaca stakeholders and potential adopters.