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Fibre extraction of jute and allied fibre crops: Problems and machine development

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Abstract

Jute and allied fibres like mesta, sunnhemp, ramie and sisal are used in textile and related industries. These fibres are extracted from the bark or bast of the harvested plants (leaf in case of sisal). Energy as well as cost analysis of existing cultivation technology of these crops showed major consumption in the process of fibre extraction. Improved technology has been developed to reduce the cost of fibre extraction and to improve the quality of fibre. Partial mechanization was introduced in the process of fibre extraction. Improved technology includes first the separation of ribbon from the harvested plants with the help of machine and then retting of ribbon in water. For jute, Mesta and Sunnhemp fibre extraction, low cost machines viz. power operated 'CRIJAF Bast Fibre Extractor' and manually operated 'CRIJAF Jute Extractor' were developed to extract the fibres directly from the harvested plants. Also, developed the method of ribbon retting which economizes in water use, time and produces quality fibre. The machines 'CRIJAF Flax extactor' and 'sisal fibre extractor' were developed for extraction of fibre from flax and sisal respectively. This paper discusses in detail the conventional method of fibre extraction, the developed machines, ribbon retting and the outcome of the improved technology.