Machinery for extraction and traditional spinning of plant fibres

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Keywords: Plant fibre; Traditional spinning

Issue Date: Apr-2010
Publisher: CSIR
IPC Code: Int. Cl.: B27, D01, G10D

Abstract: Vegetable fibres are produced from bast, fruit, seed, leaf, and sheath of plants. They are discrete of single entities as in cotton; ligno-cellulosic meshy as in jute and mesta; long as in jute, mesta, flax, sisal, ramie, pineapple leaf fibre (PALF); and short as in areca nut, kapok. Some of them like cotton and ramie are strong and fine with high length to breadth aspect ratio for good spinability into yarn for fabric. Primarily, cotton is used for apparel; jute and mesta for packaging; ramie for fabrics, ropes and currency paper blanks; sisal for rope; flax for linen; sun hemp for rope and tissue paper, etc. Ramie is the strongest amongst all the vegetable fibres and, therefore, it has great promises for specialised applications. The traditional uses of some vegetable fibres are in packaging of food grains, sugar, potato, onion, etc. Emphasis has, therefore, been given to crops like jute, mesta, sisal and PALF right from their extraction to finished products like yarns, fabric, sacking, hessian, ropes, twines, soil-savers, craft papers, etc. through mechanical processing and intervention of a host of machinery. The need for production of fine yarn/blended yarn has become acute in the context of manufacture/export of fabrics and ready-made garments. Therefore, it becomes essential to explore all spinning technologies for production of market friendly yarn.
Traditional methods of extraction and processing of herbs and medicinal plants such as solid liquid extraction (Soxhlet), steam distillation or cold press are still used in Egypt. These methods of extraction lack selectivity, give lower yields and because it uses large volume of organic solvents it present safety concern and environmental risk. The traditional techniques of solvent extraction of plant materials are mostly based on the correct choice of solvents and the use of heat and/or agitation to increase the solubility of the desired compounds and to improve the mass transfer. Usually the traditional techniques require longer extraction time thus running a severe risk of thermal degradation for most of the phyto-constituents [13]. Traditional methods of extraction are described below, followed by higher output manual machines and mechanised extraction. Traditional methods. Oil is extracted from fresh coconut, olives, palm fruit shea nut etc. by separating the flesh and boiling it in water. Salt is added to break the emulsion and the oil is skimmed from the surface.

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10. Starting a Small Food Processing Business, P.Fellows, E. Franco & W. Rios, 1996, IT Publications. For producers who can obtain assistance from a small business advisory service or an international development agency that has access to the Internet, there are 100+ websites on soap making. Natural fibres are obtained from natural sources such as animals and plants, while those which are not obtained from natural sources are called synthetic fibres. This article mainly aims at studying plant and animal fibres - the traditional sources as well as the recently developed ones. The following are some of the popular fibres used in the textile industry: 1) Cotton: Cotton fibre is obtained from the cotton plant. It is one of the traditional fibres used in the textile industry. Alpaca fibre is used for the preparation of winter apparel. Alpaca wool is very much similar to sheep wool, but lighter in weight, warmer and softer to the touch. Generally, alpaca wool is available in white color; however, colors such as blackish blue, brown, silvery gray and blackish brown are also found.