

Design and Development of a Brush Type Pulping Machine for Extraction of Tamarind Fruit Pulp.

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Institute of Post Harvest Technology, Research and Development Centre, Jayanthi Mawatha Anuradhapura.

Non-availability of appropriate pulp extracting machinery in the local market at reasonable prices is one of the major constraints for initiating small or medium scale industries to produce tamarind-based products in rural farming areas. Therefore a study was undertaken to develop an efficient low cost brush type-pulping machine for extraction of tamarind fruit pulp. In this machine, the tamarind fruits mixed with water put manually to the hopper and forced it to extraction chamber brushes. Then fruits were pressed between brushes and sieve by continuous process. Therefore it requires feeding of raw material and removal of byproducts continuously. The tests carried out with fresh tamarind fruits showed that pulp could be extracted and machine can be operated continuous process. It was found that the optimum tamarind: water ratio for efficient pulping was 1:1.5 at 840 rpm. When the machine was operated in optimum conditions, the pulping efficiency, separation efficiency and input capacity of the pulper were found to be 90.67%, 99.8% and 400kg/hr respectively. Developed machine can be operated by a 3 hp electric motor. The operating cost of the machine was estimated to be about Rs. 0.55 / kg of tamarind fruits.