

Performance Evaluation of IARI Mini Dal Mill for Pigeonpea

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Abstract

Pulses are very important in Indian food. About 80 % of the pulse production is consumed in the form of dal and remaining 20 % as the whole seed and other forms. However, the recovery of dal varies from 60-75%. The loss is about 10- 12 % edible portion during milling operation. It significantly affects the cost and availability. Pigeonpea is the most commonly used pulse among all pulses available. The hull is tightly attached to the cotyledons via a thin layer of gums and mucilages along with uronic acids in the form of calcium pectate. It all made the pigeonpea problematic for milling. In this context, efforts have been made to develop improved methods and machinery to process pulses more efficiently and economically by various research and development institutions in the country. Among them IARI New Delhi had the Mini Dal Mill which could be operated at rural level. The present study was undertaken to test the performance of the machine for pigeonpea milling. The machine yielded finished product recovery of 72.83 % and hulling efficiency: 90.47% with pre-milling heat treatment at 85 °C for 4 minute. The hydrothermal treated lot resulted finished product recovery: 74.96% and milling efficiency: 90.77 %. Further increase of product recovery and dehulling efficiency was observed with scouring the kernel before treatment. Cost of processing was found to be 1.25 Rs./kg and 1.60 Rs./kg for heat and hydrothermal pre-milling treatment and milling by IARI Mini Dal Mill, respectively.

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