Evaluation of different types of rice flour milling machinery for their performance. (CARP funded project)

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A Study was conducted to evaluate the performance of four types of rice flour milling machinery currently used in Sri Lanka namely, pin (disk) mill, plate mill, roller mill and hammer mill. The machines were evaluated for their performance with a view to recommending the suitable machinery or machinery combination for the Sri Lankan rice flour milling industry. Their performance were evaluated in terms of particle size obtained after milling, temperature increase during milling, moisture content of milled rice flour, string continuity on extrusion and of production.

The pin mill preformed best as a single machine among the four types of rice flour milling machinery. However, the particle size of rice flour obtained was 300um, which is inadequate for the preparation of extruded products. A combination of tree passes through the pin mill produces a particle size of 212um and the flour was suitable for extruded products after preparation of dough with warm water at 60 ˚C. The temperature increase during milling, the moisture content of milled rice flour and cost of production per kg of rice flour by this combination are 56.3˚C, 11.7% and LKR 2.57 respectively. The study also showed that rice flour produced by a combination of pin (two passes) and plate mill (single pass) is suitable for extruded products after preparation of dough with water at ambient temperature as well as warm water at temperature 60 ˚C. The temperature increase during milling, the moisture content of milled rice flour and cost production per kg of rice flour by this combination are 59.5˚C, 12.3% and LKR 2.84 respectively.