

EVALUATION OF ABRASIVE TYPE RICE FLOUR MILLING MACHINE FOR ITS PERFORMANCE

H.G.S.C.Wickramasiri¹, T.M.R.Dissanayake² and G.V.T.V.Weerasooriya¹

¹ Department of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka.

² Institute of Post Harvest Technology, Jayanthi Mawatha, Anuradhapura, Sri Lanka.

A study was conducted to evaluate the performance of abrasive type rice flour milling machine (horizontal abrasive plate mill) currently used in Sri Lanka. The evaluation was done in terms of average particle size of milled rice flour, temperature increase during milling, moisture content of milled rice flour, string continuity on extrusion and cost of production. A total of five treatments comprising one machine and its combinations of one, two, three, four and five passes through the machine were used for the evaluation.

Horizontal abrasive plate mill performed best with two passes through the machine. The results showed that rice flour produced by the treatment of two, three, four and five passes through the machine were suitable for extruded product (string hoppers) after preparation of dough with water at ambient temperature as well as warm water at temperature of 60⁰ C. However, the lowest cost of production per kilograms of rice flour was 3.59 rupees at two passes. The average particle size of milled rice flour at two passes was 405µm and out of that 40.37 percent of milled rice flour is comply with the particle size (300µm) requirement of Sri Lanka standard SLS 913:1991 for rice flour. As this machine has not been fitted by perforated screen, rice flour produced using this machine should be passed through a vibrating shifter to separate the fine particles as per the requirement. The temperature increase during milling and the moisture content of milled rice flour were 38.01⁰ C and 5.40% respectively. When considering the machine capacity (271Kg/hr), it is suitable for small and medium scale millers to produce rice flour for extruded product like string hoppers.

Key words: Rice Flour, Milling Machinery