



## **EFFECT OF PROCESSING CONDITIONS ON FUNCTIONAL PROPERTIES OF SOME SELECTED TRADITIONAL RICE VARIETIES IN SRI LANKA**

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### **Abstract**

Incorporation of traditional rice into Sri Lankan diet due to their nutritional benefits is a positive trend nowadays. However, functional properties of differently processed traditional rice flour which could have potential to be used in food industry haven't been explored. The aim was to determine the effect of polishing and parboiling on functional properties of six traditional rice varieties (*Goda heenati*, *Batapola el*, *Dik wee*, *Dahanala*, *Unakola samba* and *Hangimuththan*). Water absorptivity (WAI) & water solubility (WSI) indices, amylose & amylopectin contents, swelling capacities (SC), oil absorption capacities (OAC), emulsion activity (EA) & stabilities (ES), foam capacities (FC) & stabilities (FS) and bulk densities (BD) of raw under milled, raw polished (4%) and parboiled uncooked rice flour were determined by standard methods. WAI of raw polished rice were the least (129-159) followed by raw (166-183) and highest in parboiled rice (182-223). WSI of parboiled rice was the highest (1.7-6.4) followed by raw rice (1.2-5.6) and raw polished (0.9-1.9). However, raw and parboiled *Godaheenati* and *Batapola el* had significantly high WSI compared to other varieties. All parboiled (28-32%) and majority of raw (24-32%) and raw polished (24-33%) varieties were categorized as high amylose rice. SC of raw (18-21%) was the least, followed by raw polished (23-24%) and parboiled rice (24-25%). OAC ranged between 102-113% with parboiled varieties having the highest OAC. EC and ES of the rice flour were 42-51% and 41-48% respectively. Raw polished varieties showed the least EC and ES. BD of rice varied from 0.9-1.0 g/cm<sup>3</sup>. FC of rice flour were negligible. The parboiled or raw rice have good functional properties and thus incorporation of these rice flour in food industry replacing wheat flour will provide many health benefits and be socio-economically and environmentally beneficial.

**Keywords:** *Traditional rice, Parboiling, Functional properties, Raw rice and Food industry*