



## **Influence of Different Parboiling Process on Milling Yield of *Addakari* Paddy Variety**

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The quality of rice can be enhanced by the hydrothermal process called parboiling, which alters the physiochemical characteristics of paddy grains. As milling of raw rice without parboiling induces breakage of grains, the present study was carried out to find the effective parboiling process for the traditional paddy variety *Addakari* to reduce such loss. At first, the paddy was soaked under two conditions namely, cold water soaking at ambient temperature ( $27\pm 5^{\circ}\text{C}$ ) for three different duration (24, 48 and 72 h) and hot water soaking at three different temperatures (40, 50 and  $60^{\circ}\text{C}$ ). The soaked paddy underwent three methods of steaming process pressure-soaked steam parboiling (PSS), open-soaked steam parboiling (OSS), and un-soaked steam parboiling (USS). After that, the above samples were allowed for oven drying at  $60^{\circ}\text{C}$  for 3 h. It was followed by milling rough paddy using an analytical grade de-husking machine after which the brown rice was polished to remove the bran to a certain level. Then, the milling recovery, head rice yield (HRY), and broken rice percentage were measured. In all different parboiling processes, the milling recovery ranged from 70.16 to 74.84%. In terms of HRY for the cold-water soaking, soaking of paddy for 24 hours with PSS yielded the highest HRY of 76.81%, whereas paddy soaked for 72 h followed by USS led to the lowest HRY of 63.20%. When considering the hot water soaking, the paddy soaked at  $60^{\circ}\text{C}$  and steamed in PSS gave a maximum HRY of 80.16% while paddy soaked under  $40^{\circ}\text{C}$  continued with USS showed a minimum HRY of 66.32%. In contrast, milling paddy without parboiling showed a poor HRY of 40%. Based on this study, it can be concluded that the parboiling process with hot soaking at  $60^{\circ}\text{C}$  followed by pressure-soaked steam parboiling is suitable to obtain comparatively higher head rice yield which may be due to the development of hardness with increasing temperature. It is suggested to determine the cooking quality and sensory properties in future studies.

**Keywords:** Hardness; head rice yield; hot water soaking; milled rice yield; pressure-soaked steaming