

Title: Effect of Parboiling Methods on Milling Yield and Resistance Starch of Three Rice Varieties

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Abstract: Rice is one of the leading food crops in the world and is the primary dietary source of carbohydrates in over half of the world's population. The parboiling process leads to improve rice quality and changed physicochemical properties of grains and also parboiled rice exhibits several advantages over raw rice products such as increased milling recovery, and prevention of the loss of nutrients during milling and cooking. The study was aimed to evaluate milling yield analysis in three methods of parboiling and non-parboiling paddy and cooking qualities in three methods parboiled and non-parboiled rice by extrusion test. One traditional variety (Attakari), and two Department recommended varieties At362 and Bg366 were used for this study. Rice of these varieties was parboiled in three methods; Soak Steamed Parboiling (SSP), Pressure Soak Steamed Parboiling (PSSP), (15 psi/121 °C), Open Steamed Parboiling (OSP). All varieties were soaked in water at ambient temperature (30 °C) for 1-5 days duration before steaming. The lowest steaming time (20 min) and higher head rice yield were observed in the PSSP method at 2 days soaking time duration. Other parboiling methods give higher head rice yield at 3 days soaking time duration. Raw paddy gives less head rice yield than parboiled paddy samples. Non-parboiled paddy samples recorded higher broken % during milling compare to parboiled paddy samples. In the PSSP method samples show a lower level of extrusion percentage than other methods of parboiled paddy as there is high resistant starch content. Non-parboiled samples and soaked steam samples show a higher extrusion percentage than other parboiling methods.