

EFFECT OF DEGREE OF BRAN REMOVAL ON STORAGE BEHAVIOR OF PARBOILED RICE

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As a staple food, rice plays a vital role in the economy and livelihood of people in Sri Lanka. In the Sri Lankan rice market, milled rice with 7-8% of bran removed is stored in poly sac bags for the easiness of consumers, processors and traders. This study was undertaken to determine the effect of different degrees of bran removal on physical, chemical, and biological storage parameters and eating qualities of parboiled rice stored under ambient condition. Four bran removal degrees 0%, 4%, 6% and 8% were prepared as treatments with three replicates per treatment. The experimental design was Completely Randomized Design (CRD). Each replicate was 9kg parboiled rice stored in poly sac bag. Effect of degree of bran removal on storage behavior was investigated by measuring the moisture content, temperature, grain color, grain hardness, fungal infestation, cooking qualities and sensory qualities during storage period of 6 weeks. Determination of cooking quality comprised of tests for cooking time, water uptake ratio, volume expansion ratio and alkali digestion. Panel test results were used to determine eating quality of the rice. Results were analyzed using SAS and MINITAB statistical software. Statistical analysis of results indicated that storage parameters varied significantly ($p < 0.05$) among the rice with different degrees of bran removal during the storage period and unpolished rice showed a distinct difference from those of other bran removal degrees. The moisture content, temperature and eating qualities were significantly higher in bran removal degree 6%. Cooking qualities were significantly higher in bran removal degree 4%, 6% and 8% than unpolished rice. The whiteness was significantly higher in bran removal degree 8%. The grain hardness

was significantly higher in unpolished rice. No undesirable fungal infestation could be observed during the entire storage period for each and every treatment. Based on the variation of the parameters during storage, it is concluded that the optimum bran removal degree which assures the best quality and safety for parboiled rice stored in poly sac bag is 6% bran removal.

Key words: Bran removal degree, Storage, Parboiled rice