

Changes in Physicochemical Properties of Milled Rice (*Oryza sativa* L., cv. Paw-San-Hmwe) during Storage

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Abstract

Changes in physicochemical properties of milled rice (cv. Paw-San-Hmwe) responded to storing conditions were analyzed for six months of storage with a one month interval. Some physical characteristics were also classified for cultivar Paw-San-Hmwe. Freshly harvests polished rice was storage temperature: 14, room temperature ($28\pm 2^{\circ}\text{C}$) and 40°C with three packing types of polyethylene (PE) plastic packages: vacuum-, normal- and non-sealing. The results showed that a sharp decline in moisture content was found only at the end of analysis. Gelatinization temperature increased and gel consistency became harder during storage in all storage rice samples. Amylose content, reducing sugar content and grain elongation ratio increased, and soluble protein content, total carbohydrate content and 2-acetyl-1-pyrroline (ACPY) content were decreased for all treatments during the storage time with a few exceptions. Alphaamylase activity decreased and lipase activity increased with storage time in all treatments. ACPY was remained at the highest concentration at 14°C storage temperature combined with vacuum packaging after 6 month among the treatments. Findings from these analyses indicated that the overall quality improvement of milled rice cultivar, Paw-San-Hmwe regarding to physicochemical changes could be achieved after 3-4 months storage except 40°C . The vacuum packaging maintained the milled rice aroma more than normal-sealed and open packaging types during that period of storage time.

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