Title Changes in physicochemical and sensory-properties of irradiated rice during storage

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Abstract

Milled aromatic rice (KDML-105) was γ-irradiated at doses of 0, 0.2, 0.5 and 1.0 kGy. Changes in physicochemical and sensory properties were recorded during subsequent storage in polyethylene bags at ambient temperature for 1 year. Similar trends were observed in both irradiated and non-irradiated samples. Insignificant changes in yellowness and total solids in cooking water were observed during storage of irradiated rice compared with those of naturally-aged rice. Irradiated rice showed less increase in Rapid Visco Analyzer (RVA) setback, greater reduction of RVA breakdown, and softer texture than non-irradiated rice. It also had a softer but slimy texture, off odour and inferior taste compared with the non-irradiated sample. Based on overall acceptability to panelists preferring fresh rice, non-irradiated rice could be stored for more than 1 year while rice irradiated at 0.2, 0.5 and 1.0 kGy had shelf lives of 9, 7 and 2 months, respectively.