

Title Quality attributes of *Pleurotus eryngii* following gamma irradiation
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Abstract

Quality attributes (appearance, color, texture, weight, and volatile compounds) of irradiated (0, 1, 2, and 3) king oyster (*Pleurotus eryngii*) mushrooms, packed in polystyrene trays and covered with polyvinylchloride (PVC) film, were evaluated over a storage period of 4 weeks at 5 ± 1 °C. Hunter *L* values (lightness) increased upon irradiation and remained high throughout the storage period in 1 kGy-irradiated samples, whereas *a* values showed a slight decrease, and *b* values exhibited an increasing trend following irradiation. Mushroom texture decreased in firmness with increasing dose, but 1 kGy-irradiated samples maintained an overall better texture than all other samples. A similar trend was observed for weight loss during storage. The control samples developed mold, whereas 3 kGy-irradiated mushrooms were soft at the 3rd week of storage. Scanning electron microscopy showed micro-structural changes in the irradiated samples, which were probably the cause for increased weight loss and poor texture at the high 3 kGy dose. A principal component analysis of E-nose data showed dose-dependent differences in volatile profiles of all samples. Irradiation at 1 kGy was most effective for the extension of postharvest storage with added advantages.