Title Compositional and sensory analyses of sweetpotatoes after X-ray irradiation quarantine treatment.

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Abstract

Sweet potato (*Ipomoea batatas*) roots of 2 Hawaii-grown clones were treated with 100-600 Gy X-ray irradiation and evaluated for quality before and after cooking. Root moisture content, surface colour, and glucose and fructose concentrations were not affected by irradiation treatment for either the red-skin, yellow-flesh (RY) or the white-skin, purple-flesh (WP) clones. Firmness decreased at higher doses for RY roots, but not for WP roots. The alcohol insoluble solids and the starch concentrations of raw roots decreased linearly in response to increasing dose for both clones. Maltose decreased at higher doses in cooked RY roots only. Irradiation had the greatest effect on sucrose concentrations, which increased linearly in response to dose as starch concentrations decreased. A sensory panel perceived sweet potato roots treated with 600 Gy irradiation as sweeter than control roots. Panelists found the overall acceptability to be the same for control and 600 Gy treated roots for both clones.