

Effect of γ -irradiation on the physicochemical properties, and microbial and sensory qualities of cold-stored onion puree.

Abstract

The present study was conducted to evaluate the effect of different doses (0, 1, 2, 3, 5 and 7 kGy) of γ -irradiation on the physicochemical properties (pH, titratable acidity, total soluble solid, color, organic acid content), and also the microbial and sensory qualities of onion puree during cold storage at 4C for 28 days. The different doses of γ -irradiation were found to not have any negative effect on titratable acidity, pH, total soluble solid and organic acid contents of onion puree immediately after irradiation and also during cold storage. Irradiation at 3 kGy and above was able to control the development of yeasts and molds in the onion puree, but had negative effects on the color and sensory quality of the onion puree. This study indicates that irradiation at 2 kGy reduced microbial counts with minimum adverse effects on color and sensory qualities.

Keyword: Onion puree; G-irradiation; Physicochemical properties; Storage.