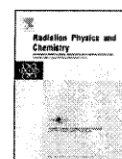




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Radiation processing of minimally processed vegetables and aromatic plants

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ABSTRACT

Vegetables are an essential part of people's diet all around the world. Due to cultivate techniques and handling after harvest, these products, may contain high microbial load that can cause food borne outbreaks. The irradiation of minimally processed vegetables is an efficient way to reduce the level of microorganisms and to inhibit parasites, helping a safe global trade. Evaluation of the irradiation's effects was carried out in minimal processed vegetables, as coriander (*Coriandrum sativum* L.), mint (*Mentha spicata* L.), parsley (*Petroselinum crispum* Mill. (A.W. Hill)), lettuce (*Lactuca sativa* L.) and watercress (*Nasturium officinale* L.). The inactivation level of natural microbiota and the D_{10} values of *Escherichia coli* O157:H7 and *Listeria innocua* in these products were determined. The physical–chemical and sensorial characteristics before and after irradiation at a range of 0.5 up to 2.0 kGy applied doses were also evaluated. No differences were verified in the overall of sensorial and physical properties after irradiation up to 1 kGy, a decrease of natural microbiota was noticed (≥ 2 log). Based on the determined D_{10} , the amount of radiation necessary to kill 10^5 *E. coli* and *L. innocua* was between 0.70 and 1.55 kGy. Shelf life of irradiated coriander, mint and lettuce at 0.5 kGy increased 2, 3 and 4 days, respectively, when compared with non-irradiated.

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