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Investigation of the gamma irradiation on Iranian dates carbohydrates using HPLC technique

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Irradiation is considered as one of the most efficient technological processes for the improvement and safety of food products and to extend their shelf-life. The aim of this study is to evaluate the effects of gamma irradiation on chemical assessment on 6 varieties (Mazafati, Astamaran, Rabbi, Khassui, Zahidi and Shahany) of Iranian dates. In this purpose, the date samples were stored at room temperature (25° C) for 5 months. In this condition, one sample was considered as a control (non-irradiated) and three others were irradiated by gamma irradiation with doses 0.2-0.4, 0.5-1.0 and 1.2-2.4 kGy by using 60Co. Every month, the samples kept in each condition were analyzed to detect the chemical (sugar) changes by HPLC and to compare the non-irradiated samples with the irradiated ones. The results from different experiments showed that the total carbohydrates of the non-irradiated and irradiated Mazafati and Astamaran samples were increased after 5 months. However, Zahidi, Shahany, Rabbi and Khassui samples indicated a complete lack of the significant difference in total carbohydrates in various doses and storage time. It was concluded that the proper condition for chemical changes to increase shelf-life and stabilize quality of the Iranian dates was suggested the dose range of 0.5 -1.0 kGy at 25° C temperature.

Biography

Marzieh Seyhoon has completed her PhD at the age of 39 years from Tehran University in field of food technology. She is a professor assistant and Head of food Irradiation Laboratory of radiation application research school, nuclear science and technology research institute, in Iran. She has published more than 10 papers in reputed journals and has been serving as a juror member of Iranian reputed journals.

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