GAMMA RADIATION EFFECTS ON PHYSICOCHEMICAL, MICROBIOLOGICAL AND ANTIOXIDANT PROPERTIES OF BLACK RICE (*Oryza Sativa* L.) FLOUR DURING STORAGE

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ABSTRACT

Black rice has been categorised as a functional food because it contains high amounts of bioactive compounds. The effects of gamma radiation (at 0, 1, 2 and 3 kGy doses) on the free and bound total phenolics, antioxidant activity, and physicochemical and microbiological properties of black rice flour samples during storage were evaluated. The chemometric approach made it possible to observe the effects of irradiation and storage time on the samples.

Regarding bioactive compounds, with the exception of the bound phenolic fractions the 3 kGy dose showed the highest values at time 0. At 120 days there was a decrease in these levels for all the samples, although the irradiated samples were most stable at the end of storage. Regarding the attribute of colour, the irradiation slightly modified all the parameters; in terms of microbiological analysis there was no growth of microorganisms at the end of storage.