

Evaluation of antioxidant activity of *Tropaeolum majus* L. flowers processed by ionizing radiation

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Edible flowers can be used to add flavor, taste, color and visual appeal to culinary preparations. Nasturium flowers (*Tropaeolum majus* L.) are used as an ingredient in culinary preparations namely, salads, crepes and pancakes[1]. Moreover, due to their antioxidant properties and bioactive components, edible flowers might be considered as healthy ingredients. Nevertheless, these flowers are highly perishable products and must be free from insect pests, which may represent a challenge since these species must grow without using any chemical pesticides [2]. Irradiation is a method that can be used for food disinfection, in order to extend the shelf life of perishable products, improving their hygienic quality and food safety [3]. In fact, food irradiation has been pointed out as a good alternative to replace chemical fumigation of food matrices, including edible flowers [4]. The purpose of this study is to evaluate the antioxidant activity of *T. majus* flowers submitted to gamma and electron beam irradiation at 0, 0.5, 0.8 and 1.0 kGy. The antioxidant properties were evaluated through 2,2-diphenyl-1-picrylhydrazyl (DPPH) scavenging activity, reducing power and β -carotene bleaching inhibition assays. A statistical analysis using 2-way ANOVA (general linear model) showed that the flowers processed with gamma irradiation presented the highest reducing power (independently of the dose used). Furthermore, the 1 kGy dose was the most adequate for β -carotene bleaching inhibition (independently of the source of irradiation used). Overall, ionizing radiation can be an alternative to ensure antioxidant properties of edible flowers.

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