ANALYSIS OF PHENOLIC COMPOUNDS IN *Tropaeolum majus* L. PROCESSED BY IONIZING RADIATION

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Tropaeolum majus L. (garden nasturtium) is an ornamental plant that belongs to Tropaeolaceae family, native to South America in the Andes and that is widely distributed around the world. Its flowers are extensively used in food preparations and have strong spicy flavours as watercress, being also acknowledged for their antioxidant properties and high content of phenolic compounds [1, 2]. The use of edible flowers as food ingredients requires new approaches to improve conservation and safety. The extension of post-harvest storage, preserving the quality of the plants, will benefit the industrial development [3]. Food irradiation is a method that can be used for the extension of shelf life of perishable commodities and to increase food safety [4]. The purpose of this study was to evaluate the dose-response effects of gamma and electron beam irradiation (doses of 0, 0.5, 0.8 and 1 kGy) on the phenolic profile of garden nasturtium, using HPLC-DAD-ESI/MS. Kaempferol-*O*-hexoside-*O*-hexoside was the most abundant compound in all the studied samples (8 and 14 mg/g of extract, after gamma and electron beam irradiation, respectively), followed by 5-*O*-caffeoylquinic acid (2.3 mg/g for both irradiation technologies) and 3-*O*-caffeoylquinic acid (2.2 and 2.0 mg/g for gamma and electron beam irradiation, respectively). Regarding anthocyanins, pelargonidin-3-*O*-sophoroside and delphinidin-*O*-dihexoside were the most abundant compounds (4 and 2 µg/g, respectively, after both types of irradiation). According to the obtained results, the applied irradiation treatments seemed feasible technologies to keep the phenolic composition and preserve the quality of edible flower petals and might be useful to expand the post-harvest storage, preserving the quality of *T. majus*.

Acknowledgments: FCT- Portugal for financial support to CIMO (strategic project PEst-OE/AGR/UI0690/2011), João C.M. Barreira (SFRH/BPD/72802/2010 grant) and L. Barros ("Compromisso para a Ciência 2008" contract). The GIP-USAL is financially supported by the Spanish Government through the *Consolider-Ingenio 2010* Programme (FUN-C-FOOD, CSD2007-00063). This research is included in a Bilateral action FCT-CNPq, Portugal/Brazil 2014 and CNEN, CAPES, CNPq and IPEN-CNEN/SP for financial support to Amanda Koike.

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