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HOW DOES IRRADIATION AFFECT BIOACTIVE COMPOUNDS OF WATERCRESS?

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Ready-to-eat vegetables have become more popular in consumers' market baskets due to their convenience and health benefits [1]. The growth of this sector has promoted the introduction of new foods and the adoption of more efficient and eco-friendly postharvest technologies such as irradiation. However, a common consumer concern is whether irradiation adversely affects the nutritional value of food. In this sense, the suitability of post-packaging irradiation for preserving bioactive compounds of watercress (*Nasturtium officinale* R. Br.) during cold storage was evaluated. Watercress samples gathered in the Northeastern region of Portugal were hand-picked and rinsed in tap water. A portion was immediately analyzed (fresh control) and the remaining fresh material was packaged in polyethylene bags, irradiated at doses up to 5 kGy in a Co-60 experimental chamber, and stored at 4 °C for 7 d. A non-irradiated control followed the experiment. Tocopherols and phenolic compounds were analyzed by chromatographic techniques and the antioxidant activity was evaluated using four *in vitro* assays [2]. In general, flavonoids predominated over phenolic acids. The 5 kGy dose preserved the amounts of total phenolic acids and phenolic compounds and increased the levels of *p*-coumaric acid (the most abundant compound). These samples also had higher levels of total tocopherols; increase that can be related to plant defense mechanisms. However, both groups of compounds were adversely affected by 2 kGy. Furthermore, flavonoids correlated well with antioxidant properties.

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