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**Postharvest changes in the phenolic profile of watercress induced by  
post-packaging irradiation and modified atmosphere packaging**

**Running title:** Effect of postharvest treatments on watercress phenolic compounds

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**ABSTRACT**

The effects of  $\gamma$ -ray irradiation and modified atmosphere packaging (MAP) on watercress (*Nasturtium officinale* R. Br.) phenolic compounds were evaluated after 7-day storage at 4 °C. Irradiation doses of 1, 2 and 5 kGy were tested, as well as vacuum-packaging and MAP enriched with 100 % N<sub>2</sub> and Ar. A non-irradiated, air-packaged control was included in all experiments. *p*-Coumaric acid was the most abundant compound in fresh watercress, followed by quercetin-3-*O*-sophoroside and

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