

## Abstract

# Impact of Different Atmosphere Packaging Systems on the on the Shelf-Life of *Phyllostacys edulis* Fresh Shoot <sup>†</sup>

Monica Rosa Loizzo <sup>1,\*</sup>, Vincenzo Sicari <sup>2</sup>, Roberta Pino <sup>1</sup>, Tiziana Falco <sup>1</sup>, Rosa Romeo <sup>2</sup> and Rosa Tundis <sup>1</sup>

<sup>1</sup> Department of Pharmacy, Health and Nutritional Sciences, University of Calabria, 87036 Arcavacata di Rende (CS), Italy; email1@email.com (R.P.); email2@email.com (T.F.); email3@email.com (R.T.)

<sup>2</sup> Department of Agraria, University “Mediterranea” of Reggio Calabria, Salita Melissari, Feo di Vito, 89124 Reggio Calabria (RC), Italy; email4@email.com (V.S.); email5@email.com (R.R.)

\* Correspondence: monica\_rosa.loizzo@unical.it

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**Abstract:** Bamboo (*Phyllostacys edulis*, Poaceae) shoot is a traditional delicacy in several countries. Many studies have demonstrated that shoot was the ideal food being of low fat, high dietary fibres and rich in mineral content. and several bioactive compounds [1]. This study aimed to compare the effect of different modified atmosphere packaging (MAP) on the postharvest shelf-life of fresh bamboo shoots during storage of 28 days at 4 °C. For this purpose, fresh shelled bamboo shoots were pre-treated in a chlorinated water solution and then and subsequently dried and packaged in MAP using heat-sealable polyamide and polyethylene (PA/PE) trays. The tested gas mixtures are 2% O<sub>2</sub>, 5% CO<sub>2</sub>, 93% N<sub>2</sub> (ATM1), and 3% O<sub>2</sub>, 7% CO<sub>2</sub>, 90% N<sub>2</sub> (ATM2). The effects of MAP systems were assessed by the changes of their chemical physical parameters (moisture content, water activity, pH, respiration rate and firmness). CIELab colorimetric parameters and microbial growth test were also assessed. The total phenol content (TPC) and radical scavenging activity evaluated by DPPH and ABTS test were also done [2,3]. Results showed that after 28 days of storage a<sub>w</sub> values of 0.957 and 0.950 for ATM1 and ATM2, were recorded. At the end of storage period significant variations of the colorimetric parameters are observable between the apical portion of the shoot and the basal one regardless of the MAP applied. Shoots packaged in ATM1 showed a greater microbiological decay particularly evident after 28 days of storage. As regards TPC, a fluctuating trend was observed with a reduction in the first 7 days of storage followed by an increase. A linear reduction in radical scavenging activity was evidenced during samples storage independently by the typology of MAP applied.

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