

**Title** Packaging strategies to prolong the shelf life of minimally processed lampascioni (*Muscari comosum*)

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#### **Abstract**

In this work different packaging strategies aimed to prolong the shelf life of minimally processed lampascioni are presented. In particular, two different treatments prior to packaging were tested: dipping in a solution containing citric acid (1%) and calcium chloride (8%), and coating with sodium alginate (5%), in combination with citric acid (1%) and calcium chloride solution (8%). The treated samples were packaged using two types of polymeric films: a commercially available oriented polypropylene film (OPP), and a polyester-based biodegradable film (NVT2). The investigated produce was stored at 5 °C for approximately 20 days. Microbial populations, pH, weight loss and visual quality were monitored for the entire observation period. In order to determine the respiration activity, O<sub>2</sub> and CO<sub>2</sub> concentration were monitored not only in OPP and NVT2 packages but also in the headspace of an aluminum-based package. Results show that, among the packaging strategies investigated in this work, the coated lampascioni packaged in NVT2 film were best preserved over the entire storage period. In fact, the alginate coating, combined with the gas barrier properties of the NVT2 film, can delay the lampascioni respiratory activity and the browning process, as well as the microbial growth, allows prolonging the shelf life of the investigated fresh-cut produce.