Title The use of alginate as edible coating alone or in combination with essential oils maintained postharvest quality of tomato

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Abstract

Tomato fruit is a perishable fruit with acceleration of the ripening process immediately after detached from the plant. The main changes are colour changes and softening, which are associated with both respiration rate and ethylene. On the other hand, there is a need to develop new postharvest tools considered as safe and environmentally friendly to preserve fresh produce. Accordingly, in this work an edible coating based on alginate 1% alone or combined with a mixture of essential oils (thymol, menthol, eugenol, carvacrol) was used in tomato (*Solanum Iycopersicon* cv. Boludo) during storage at 20°C for 10 days. Alginate coatings were effective in reducing and delaying the ethylene production while respiration rate remained unchanged. The lower ethylene led to significant delays in colour changes (both a* and Hue angle). However, the addition of the essential oils was more effective than alginate alone in reducing the ripening process. Thus, these edible coatings are promising as a tool to maintain the tomato quality.