

**Post-harvest preservation of cherries using bioactive edible coatings**

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The packaging material is an important factor in food preservation and is dominated by petroleum-based polymers. In order to minimize the ecological impact caused by the use of synthetic non-biodegradable packaging materials, the research involved in the production and characterization of edible films has grown considerably in the last few years.

The present study is within the scope of edible films and coatings, with the aim of developing an effective preservation method in increasing the shelf life of cherries, more specifically by the application of bioactive edible coatings based on chitosan. Edible coatings based on the formulation: chitosan solution, to which was added a lipid barrier (beeswax or sunflower oil), a crosslinking agent (citric acid), a plasticizer (glycerol), a surfactant (Tween80) and an antimicrobial plant extract (NFT-Northern Food Tec, GMBH, Germany), were studied.

Four filmogenic formulations based on 2 % chitosan (w/w) in 1 % acetic acid (v/v), 50 % citric acid (w/w CH), 50 % glycerol (w/w CH) and 1.5% Tween80 (w/w), were selected: A - with 5 % beeswax (with and without the addition of 1% of plant extract) and B - 5% sunflower oil (with and without addition of 1% plant extract).

The main step of this study consisted on the application of the four selected solutions to cherries, and carrying out a conservation essay for 28 days at refrigerated conditions (T=4°C). It was observed that the coatings had positive effects on the control of weight loss, as well as controlling the growth of molds and yeasts. The coatings with plant extract showed an even more efficient antifungal effect. The texture of the fruits was not significantly affected with the application of the coatings along the storage time. In respect to the colour of the fruits, only coatings with oil caused significant changes after application. As such, the coatings tested are quite promising in the preservation of cherries, especially due to their antifungal activity and water barrier, which are the main conservation issues regarding this type of fruit.

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