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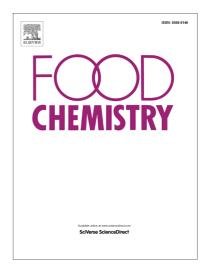
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ACCEPTED MANUSCRIPT

Impact of chitosan based edible coatings functionalized with natural compounds on

Colletotrichum fragariae development and the quality of strawberries

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Abstract

The antifungal effect of chitosan edible coatings (ChEC) functionalized with cinnamon essential oil

and aqueous extract of Roselle calyces on Colletotrichum fragariae growth and physical-chemical,

physiological and nutraceutical features of strawberries at 5 and 20 °C were evaluated. ChEC was

characterized with respect to its water vapor permeability (WVP) and mechanical properties. Results

indicated that C. fragariae grew from the third day in strawberries stored at 20 °C, whilst at 5 °C

disease symptoms were observed after 10 days in fruit inoculated and treated with ChEC after 24 h.

The weight loss was reduced 15 times and firmness was higher by 33% in fruit treated with ChEC and

stored at 5°C. The antioxidant capacity of strawberries increased at the end of the storage only in

control group. In conclusion, ChEC can be an effective technology for preserving quality strawberries

for 17 days at 5°C.

Keywords: Fragaria ananassa Duch, Roselle, cinnamon essential oil, antioxidant capacity

Chemical compounds studied in this article

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