

# Accepted Manuscript

Short communication

Effect of chitosan and its derivatives as antifungal and preservative agents on postharvest green asparagus

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PII: S0308-8146(14)00047-8

DOI: <http://dx.doi.org/10.1016/j.foodchem.2014.01.026>

Reference: FOCH 15251

To appear in: *Food Chemistry*

Received Date: 1 July 2013

Revised Date: 7 December 2013

Accepted Date: 13 January 2014



Please cite this article as: Qiu, M., Wu, C., Ren, G., Liang, X., Wang, X., Huang, J., Effect of chitosan and its derivatives as antifungal and preservative agents on postharvest green asparagus, *Food Chemistry* (2014), doi: <http://dx.doi.org/10.1016/j.foodchem.2014.01.026>

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1 Effect of chitosan and its derivatives as antifungal and preservative  
2 agents on postharvest green asparagus

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8 **ABSTRACT**

9 The antifungal activity and effect of high-molecular weight chitosan (H-chitosan), low-  
10 molecular weight chitosan (L-chitosan) and carboxymethyl chitosan (C-chitosan)  
11 coatings on postharvest green asparagus were evaluated. L-chitosan and H-chitosan  
12 efficiently inhibited the radial growth of *Fusarium concentricum* separated from  
13 postharvest green asparagus at 4 mg/ml, which appeared to be more effective in  
14 inhibiting spore germination and germ tube elongation than that of C-chitosan. Notably,  
15 spore germination was totally inhibited by L-chitosan and H-chitosan at 0.05 mg/ml.  
16 Coated asparagus did not show any apparent sign of phytotoxicity and maintained good  
17 quality over 28 days of cold storage, according to the weight loss and general quality  
18 aspects. Present results inferred that chitosan could act as an attractive preservative agent  
19 for postharvest green asparagus owing to its antifungal activity and its ability to stimulate  
20 some defense responses during storage.

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