

Accepted Manuscript

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PII: S0023-6438(18)30695-9

DOI: [10.1016/j.lwt.2018.08.043](https://doi.org/10.1016/j.lwt.2018.08.043)

Reference: YFSTL 7355

To appear in: *LWT - Food Science and Technology*

Received Date: 26 October 2017

Revised Date: 17 August 2018

Accepted Date: 22 August 2018

Please cite this article as: Wang, Y., Jia, J., Shao, J., Shu, X., Ren, X., Wu, B., Yan, Z., Preservative effects of allicin microcapsules on daily foods, *LWT - Food Science and Technology* (2018), doi: 10.1016/j.lwt.2018.08.043.

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Preservative effects of allicin microcapsules on daily foods

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ABSTRACT Allicin microcapsules feature seasoning, health care and drug functions, moreover

they possess high water solubility and strong stability. In this study, preservative effects of the

microcapsules on daily foods including tofu, bread, cooked chicken and cooked pork, were

revealed for the first time. When the four foods were treated with the microcapsules, their *DI*

(disease index) values decreased greatly; once their effective antifungal concentrations were above

0.045%, their *DI* values were zero and there was no mold growth on the four foods. Even if they

were boiled for 0.5h, their effective antifungal concentrations only increased to 0.050%. When the

microcapsules after the severe heat treatment were applied to the foods, their reduction rates of

mold spores (R_m) increased only between (14.5±1.1)% and (26.3±2.7)%, which suggested that a

large amount of the microcapsules still kept excellent actual fungicidal effects after the heat

treatment. As a novel preservative, the microcapsules were effective, safe and worthy of

exploitation, and had potential applications in the preservative of food.

Keywords: Allicin; Microcapsule; Preservative; Antiseptic; Disease index

Running title: Allicin microcapsule

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