

عنوان مقاله:

In vitro Antifungal Activity of Biopolymeric Foam Activated with Carvacrol

محل انتشار:

فصلنامه کنترل کیفیت مخاطرات مواد غذایی, دوره 7, شماره 3 (سال: 1399)

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خلاصه مقاله:

Background: Active packaging represents a defining strategy to improve food quality and safety of the packaged foods. This study aimed to evaluate the in vitro ability of commercial biopolymeric foams, namely Mater-Bi (MB), activated with 20% of carvacrol, to develop a completely biodegradable and compostable packaging to inhibit the growth of spoilage and pathogenic yeasts. Methods: MB foams, with and without carvacrol, were produced by melt mixing and the foaming process was performed in a laboratory press. The antifungal activity of foams containing carvacrol was tested applying the disk diffusion method. Statistical analysis was done using XLStat software version 7.5.2 for Excel. Results: Statistically significant differences ($p < 0.05$) were observed between sensitivity of the tested yeasts. *Candida zeylanoides* 4G362 and *Rhodotorula mucilaginosa* ICE29 were found to be the most sensitive strains with a clear zone of 28.9 ± 0.1 and 29.0 ± 0.1 mm, respectively. However, *Aureobasidium pullulans* was the least sensitive yeast strain, showing clear zone of 20.4 ± 0.3 mm. Conclusion: This study provided, for the first time, an in vitro analysis of the antifungal activity of MB foams activated with carvacrol against yeasts that commonly contaminate raw materials and processed foods. In conclusion, this biopolymer was highly effective against all the yeasts used as indicators strains. DOI: 10.18502/jfqhc.7.3.4145

کلمات کلیدی:

Biopolymers, Carvacrol, Yeasts, Disk Diffusion Antimicrobial Tests, Food Packaging

