



Antibacterial activity of whey protein isolate coating containing *Zataria multiflora* essential oil against Enterobacteriaceae in food models

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Abstract

Controlling diseases caused by food-borne microorganisms through the use of natural and degradable compounds in nature has been the topic of interest for researchers and industrialists in the past few years.

In this study, the antibacterial activity of whey protein isolate coatings containing *zataria multiflora* essential oil was investigated in a food model during 15 days of refrigerator storage.

Silver carp fillets were divided into four control groups, 0.3%, 0.45%, 0.6% containing *zataria multiflora* essential oil, the antimicrobial activity of coatings against Enterobacteriaceae was investigated by colony counting method in VRBGA medium.

The initial count for Enterobacteriaceae in the control group was 2.58 log cfu/gr, during the storage period, groups treated with higher concentrations of essential oil had a significant effect on this value. For example, in the group treated with whey protein isolate coating along with *zataria multiflora* essential oil on day 15, the amount of Enterobacteriaceae log cfu/gr was 4.85, which was reported as 8.15 log cfu/gr for the control group. Based on the results of this study, it is possible to recommend whey protein isolate coating containing *zataria multiflora* as a natural preservative for marine products, especially silver carp fillet.

Keywords: whey protein isolate, *zataria multiflora*, essential oil, silver carp.