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Application of chitosan-based coating with *Trachyspermum ammi* essential oil in silver carp fillets

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Seafood products like silver carp are valuable nutritious products which usually has limited shelf life due to various chemical and microbiological deteriorative reactions threat on their shelf life during storage at 4°C. Different concentration of *Trachyspermum ammi* essential oil (TE) (0.3, 0.45, and 0.6%) as an antibacterial agent were added to chitosan solution (2 w/v %). Totally, 60 silver carp fillets were (including treatments and controls) given a dip treatment in the chitosan solutions, and after packing into PE ziplock bags holding 250 g/packs, kept for 15 days at 4°C. Shelf life evaluation was based on microbial counts (enterobacteriaceae, total viable count (TVC), lactic acid bacteria (LAB) and psychrotrophic bacteria (PSY)), pH, and thiobarbituric reactive substance (TBARS) formation. There was positive correlation between TE concentrations and microbiological quality of carp fillets, but in terms of the TBARs formation coating with the chitosan solutions had slight antioxidant effects during storage. Results demonstrated that the combination of chitosan and *Trachyspermum ammi* essential oil extended the shelf life of silver carp in refrigerated storage. Nevertheless, further research is necessary to study the release of TE from chitosan into the foods during storage.

Biography

Mohammadreza Rezaeigolestani is a PhD candidate in Food Hygiene and Quality Control, Department of Food Hygiene, Faculty of Veterinary Medicine, University of Tehran. He has graduated in Veterinary Medicine and his DVM thesis was about Herbal Antibacterial Agents. Natural Antimicrobial and Food Preservative compounds are his field of interest and also his PhD thesis was about development of antimicrobial-biodegradable food packaging films and their application for extending shelf life of meat products.

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