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Inhibitory effect of sesame oil and chitosan against *Salmonella* in mayonnaise

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The objectives of the current study were to investigate the effect of totally (100% sesame oil) or partially (50% sesame oil and 50% corn oil) replacing corn oil with sesame oil on *Salmonella* spp. in mayonnaise stored at 4, 10 or 24°C and the inhibitory effect of chitosan at 0.5 to 1.0% against *Salmonella* spp. in mayonnaise. Effect of chitosan on mayonnaise particle size was also investigated. *Salmonella* cells were not detected in mayonnaise prepared with 50% sesame oil and 50% corn oil or by addition 0.5 to 1% chitosan at and beyond 1 d; however, cells were not detected in mayonnaise prepared 100% corn or sesame oils by 7 d at 24°C. Further, *Salmonella* numbers were reduced by approximately ≤1.2 log CFU/g in totally or partially sesame oil-treated mayonnaise or in mayonnaise containing 0.5 to 1% chitosan and stored at both 4 and 10°C compared to mayonnaise prepared with corn oil (control without chitosan). The addition of chitosan enhanced the viscosity of mayonnaise and reduced the particle size of droplets, which were 50, 24.1 and 6.1 μm in mayonnaise treated with 0, 0.5 and 1.0% chitosan. The results showed that, replacing of corn oil with sesame oil in manufacturing of mayonnaise or addition of chitosan has the potential to reduce the presence of *Salmonella* in this product.

Biography

Mahmoud Abughoush has completed his PhD from Kansas State University, in 2003. He has been assigned as an Assistant Professor at the Hashemite University, Jordan. Currently, he is working with the Hashemite University, Jordan as an Associate Professor in the Food and Nutrition Sciences Department. He has published more than 25 research articles in food safety, food product development, food chemistry and physical properties.

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