Muhammad Kashif Iqbal Khan, J Food Process Technol 2014, 5:4
http://dx.doi.org/10.4172/2157-7110.S1.007

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Food Processing & Technology
July 21-23, 2014 Hampton Inn Tropicana, Las Vegas, USA

Barrier properties of edible coatings prepared with electro-spraying

Muhammad Kashif Iqbal Khan
Wageningen University, Netherlands

Electro-spraying is a novel technique for the application of coating to foods. In this study, thin lipid-based coatings were prepared by electro-spraying on model surface and evaluated for their moisture barrier functionality. Lipid -based edible coating materials were electro-sprayed at elevated temperature (60°C) using a multiple nozzle system. Sunflower oil-based coatings had coated the sides and top surface of the target surfaces, while chocolate based material deposited primarily on the top surface. This difference in behavior was attributed to the larger droplet size of chocolate based coating. It reduced the charge to mass ratio explained and limited "wrap-around effect". Sunflower oil based coating penetrated into the target surfaces, which could be reduced by the addition of stearic acid (up to 0.15 g/g). However, this addition resulted in crystallization and crack formation during storage, and ultimately reduced barrier functionality. Conversely, chocolate-based material produced thicker coatings (up to 0.3 mm), which were more stable during storage and exhibited enhanced barrier properties. In short, electro spraying of lipid based coatings exhibited the uniform, thin film formation.

Biography

Muhammad Kashif Iqbal Khan has completed his PhD at the age of 28 years from Wageningen UR, the Netherlands. He is working as Assistant Professor in the Department of Food Engineering. He has published 8 articles in reputed journals and has also presented his PhD work in various international conferences.

mki.khan@yahoo.com