

Effect of Nano Packaging Containing Ag-TiO₂ in Inactivating the Selected Bacteria Experimentally Exposed to the Chicken-Eggshell

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Abstract : This paper focuses on inactivation of the growth of the bacterial mixture, Salmonella enteritidis, Staphylococcus aureus, Bacillus cereus and Escherichia coli, experimentally subjected to the chicken eggshell by two types of nano particle-Ag, composite film and colloidal spray carried out at concentrations of 500, 1000 and 2000 ppm over 28 days. The GLM, Repeated Measurement-ANOVA procedure was used to analyze the effect of time and concentration of nano groups on inactivation of bacteria, simultaneously. The maximum reduction of the bacterial growth was respected to the group "spray 2000 ppm" for which the value of the bacteria reached the minimum (0.93 ± 0.42) on day 7, calculated to be 0.0 on days 14 and 28 and followed by the group "spray 1000 ppm". It was obviously concluded that increasing the dilution of nano coating in spray and film created a significant decrease in the number of bacteria colonies on the eggshells but the effect of packaging in different concentrations of nanocomposite was not statistically significant in different days of the study.

Keywords : nano particle, composite film, eggshell, bacteria

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