

The Study of Poly Vinyl Chloride Modified With Egg Shell Foils as Antibacterial Polymer

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Abstract

In this present paper, experimental results on anti-bacterial efficacy of poly vinyl chloride added to various contents of egg shell as anti-bacterial agents, were reported. All obtained results were obtained after 8 weeks of microbial growing .The ratio of dopping with egg shell were 2.5,5,10,15,20 and 25 W%. We compared the initial adhesion and growth of staphylococcus aureus, streptococcus pyogens, pseudomonus aerugenosa, eschrishia coli and klebciala spp. All the tested bacteria have been brought from microbiology laboratory in college of Veterinary after insuring them by tests like Gram stain test ,Catalas test ,Manitol test, Urease test, H2S and Citrate tests Coagulase test, Indol test, Mthyl red and Oxidase tests. The obtained results at first week showed that the Gram positive bacteria, staphylococcus aureus and streptococcus pyogens, have a dense growing around polymeric discs added with egg shell foils. The size of egg shell foils used in this study was (< 125) μm . The growing and attachment of bacteria were combined with weight loss indicating biocorrosion . Less growing was obtained for the gram negative bacteria, pseudomonus aerugenosa, eschrishia coli and klebciala spp, were the growing was normal on the Petri dish .Also the obtained results showed that PVC modified with egg shell was not suitable for food packing and other applications due to the problem of microbial contamination. Further more the obtained results were explained according to the bacterial cell wall and it's liquid contents.