The Effects of ZnOnanorodson the Characteristics of Sago Starch Biodegradable Films

Nowadays tend to use biodegradable packaging; including edible coatings and films for free from synthetic chemicals and do not cause environmental pollution, the industry is growing day by day. The aim of this research was to preparation and characterization of biodegradable films supported with ZnOnanorods. In this study, sago starch based films were prepared and plasticized with sorbitol/ glycerol by casting method. ZnOnanorod with 0, 1, 3 and 5% (w/w) was added to the films before casting the films. Films were dried at controlled conditions. Physicochemical properties such as water absorption capacity (WAC), permeability to water vapor (WVP) and water solubility of the films were measured. Also, the effects of addition of nano particles were measured on the antimicrobial properties of the films by agar diffusion method. Results showed that by increasing concentration of ZnOnanorod, solubility in water, WAC, and WVP of the films significantly (p < 0.05) decreased. Furthermore, the addition of zinc oxide nanorods showed antimicrobial properties against E. Coli. In summary sago starch films supported with ZnOnanorodscan were used as active packaging for agricultural products as well as food industry.

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