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Cellulose Sulfate Active Packaging Material with Treatments on Orange Shelf Life

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Abstract: Edible cellulose sulfate (CS) was prepared by using heterogeneous process and characterized with elemental analysis, and viscosity average molecular weight. CS was evaluated as active packaging materials to keeping quality and shelf life extension of Balady orange fruits under cold storage at 5 ± 1°C for 45 days and additional week at 20 ± 2 °C as a simulated marketing period. Postharvest treatments including coating and dipping by CS and $CaCl_2$ alone or combined was applied. Scanning electron microscopy (SEM) was used to investigate the topographic properties of peel coated surface. All treatments have a positive effect of fruit keeping quality during cold storage and extension shelf life. The best results were obtained by dipping solutions mixture with CS and $CaCl_2$ which achieved reducing in weight loss (83.7 %) and decay (88.5 %) as compared with the control (6.24 % and 21.67 %) respectively.

Key words: Edible Packaging Materials, Cellulose Sulfate, Calcium Chloride, Orange fruits, Cold storage, Shelf life extension.

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