The 1st International Conference on New Ideas in Agriculture
Islamic Azad University Khorasgan Branch
26-27 Jan. 2014, Isfahan, Iran

PREPARATION AND EVALUATION OF NANOCOMPOSITE STARCH FILMS CONTAINING ZNO FOR EXTENDED SHELF LIFE OF FRESH STRAWBERRY

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Introduction:A novel Bio-nano-composite packaging was synthesized and its effect on preservation quality of strawberry fruits (*Fragaria Camarosa*) was investigated during storage at 4 ◦C.

Material and method: The nano-ZnO particles were homogenized by sonication process and incorporated into wheat starch solutions at different concentrations (1%, 3%, 5%, and 7% w/w dried starch). The packages were prepared from nano-composite films and filled by fresh strawberry, and then stored at 4 ◦C. the microbial stability were evaluated after 4, 8, 12, 16 and 20 days of storage.

Result and discussion: The ZnO- starch films exhibited an excellent antimicrobial activity during the storage of strawberries. The study suggests that NPs ZnO has the potential to role as a filler in starch-based films to activate packaging materials in the pharmaceutical and food industries. These data indicated that the nano-packaging might provide an attractive alternative to improve preservation quality of the strawberry fruits during extended storage.