ABSTRACT

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EFFECT OF JACKFRUIT-SEED STARCH TO CANDELILLA WAX RATIO, AND PLASTICIZERS ON CHARACTERISTICS OF COMPOSITE EDIBLE FILM AND ITS UTILIZATION AS EDIBLE COATING TO STRAWBERRY
(xv + 188 pages: 26 figures, 12 tables, and 16 appendices)

Jackfruit seed starch mixed with plasticizer had been shown to improve shelf life of strawberry. Candelilla wax is lipid based material that has a good barrier toward moisture and gives glossy appearance on coated fruit. The aim of this research was to determine composite edible film containing jackfruit seed starch and candelilla wax ratio which will further combine with different concentration of plasticizers (PEG400, Sorbitol and Glycerol). These combinations were expected to enhance the overall performance of edible film in term of mechanical properties and moisture barrier. From this research, the chosen formulations were 3.5 S:0.175 W-1.5% Gly and 4.5 S:0.675 W-1.5% Gly due to low WVTR; 5.5 S:0.275 W-1.5% Gly due to high tensile strength; 3.5 S:0.175 W-2.5% Sor and 3.5 S:0.175 W-5% Sor due to low WVTR and high %elongation; and 5.5 S:0.275 W-2.5% Sor due to high tensile strength and low WVTR. The selected formulations prepared as suspension were applied as edible coating to strawberry to determine shelf life and quality changes at room temperature (28-30 °C) and refrigeration storage (7-8 °C). The quality changes observed were weight loss, decreased hardness, increased total sugar, lowered total titratable acidity, increased pH and increased microbial count during storage. In room temperature storage, coated strawberry using composite edible film could be preserved up to 5 days, compared to uncoated strawberry which was only 1 day. The shelf life of coated strawberry using composite edible film was up to 21 days, while uncoated strawberry was only 10 days in refrigeration storage

Keywords: Candelilla wax, composite edible film, edible coating, jackfruit seed starch, strawberry
References: 111(1978-2016)