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CHARACTERIZATION OF EDIBLE FILM FROM LESSER YAM STARCH-PLASTICIZER MIXED WITH SODIUM BENZOATE OR LEMONGRASS OIL AND APPLICATION AS EDIBLE COATING TO STRAWBERRY
(xvi + 79 pages: 29 figures, 9 tables, and 15 appendices)

Lesser yam starch had been used as edible coating to improve shelf life of strawberry. Antimicrobials have been widely used in the food industry and had been proved for its activity towards pathogen and mold. Lemongrass oil and sodium benzoate had been proved for its ability of antimicrobials. This research was aimed to investigate the effect of lemongrass oil and sodium benzoate as antimicrobials added to characteristics of chosen edible film from lesser yam starch to prolong the shelf life of strawberry. The three suitable formulations that were chosen from sodium benzoate were 4.5% St-2% Gl-0.1% Benzo due to the highest in tensile strength; the second was 6.5% St-2%Gl-0.5% SA-0.1% Benzo due to high in tensile strength and elongation; the third was 6.5% St-2% Gl-0.5% SA-0.2% Benzo due to moderate high in tensile strength and low in water vapor transmission rate. The suitable formulations from lemongrass oil were 6.5% St-2% Gl-0.5% SA-0.3% Lemongrass due to the highest tensile strength; 6.5% St-2% Gl-0.5% SA-0.7% lemongrass due to high in tensile strength and elongation; 6.5% St-2% Gl-0.5% SA-0.5% Lemongrass due to its properties of moderate low in water vapor transmission rate. The suitable formulations of both antimicrobials then were applied to strawberry to know the shelf life and deterioration at room temperature (28-30 °C) and cold temperature (5-6 °C). The qualities checking were including weight loss, total sugar, total titratable acidity, pH, total plate count, and hardness. The shelf life of stored strawberry added with sodium benzoate in room temperature storage was 8 days, with addition of lemongrass oil, it can prolong the shelf life of strawberry up to 5 days in room temperature which has the same day with the coated control, but higher than uncoated that was 2 days. In cold temperature storage, shelf life of stored strawberry with addition of sodium benzoate was up to 26 days and that of stored strawberry with addition of lemongrass oil was up to 24 days, which were both higher than the uncoated one of only 9 days.

Keywords : Edible Coating, Edible Film, Lemongrass oil, Shelf life, Sodium Benzoate, Strawberry
References : 54 (1991-2016)