

Production of Osmotic Dehydrated Nipa Palm

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The research aimed to production of osmotic dehydrated Nipa palm. The first step the physical characteristics, proximate composition and chemical properties of fresh nipa endosperm were studied. The average weight of halved fresh nipa endosperm was 11.77 ± 2.61 , L^* a^* and b^* were 49.19 ± 0.74 0.18 ± 0.04 and 1.98 ± 0.15 , respectively. The results showed that the fresh nipa endosperm contained 6°Brix TSS, and 0.97 ± 0.01 water activity (a_w). The proximate composition indicated the moisture content, crude protein, total fat, carbohydrate, ash and dietary fiber percentage (%) were 88.82 ± 0.01 , 0.92 ± 0.04 , 0.02 ± 0.00 , 9.47 ± 0.03 , 0.78 ± 0.01 and 4.33 ± 0.01 , respectively. A study of different ratio between nipa endosperm and sucrose solution were 1:1, 1:2, 1:3 and 1:4. The result indicated that high ratio caused the increase of WL and SG in the product. The appropriate condition for osmosis was at 1:3 after drying at 60°C for 6 hr by solar drying cabinet which had the highest overall acceptable sensory score ($p \leq 0.05$) and was moderately liking (6.77 ± 1.41). Therefore, this solution ratio was selected to use in the application of natural food color; blue-purple from Butterfly pea flowers, yellow, and orange-red from Sappan and the original color of products. Altogether, resulted in four different osmo-dried nipa endosperm color products. The quality changes and predicting kinetic shelf life of products were investigated. The results indicated that L^* was increased, while moisture content and a_w were stable as storage time was increased. The predicted shelf life of the products; the original, yellow, orange-red and blue-purple color of products were 96 92 113 และ 99 days, respectively. The quality of finished product passed all requirements of Thai Community Product Standard of dried fruit (TCPS 136-2550). The training of osmotic dehydrated Nipa palm production to the community enterprise in Laemphapa sub-district, Phrasamutchedi, Samutprakarn, achieved the highest satisfaction ($\bar{x} = 4.53$).

Keywords: Nipa Palm, osmotic dehydration, Drying