

Development of Osmotically Dehydrated Chips using Coconut Haustorium (Pelapi)

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Abstract

Coconut palm (*Cocosnucifera L.*) is the most important crop in Sri Lanka. Coconut is germinated when it develops into the so-called 'apple' or haustorium. In most of the coconut kernel industries, a considerable amount of coconut haustoriums go waste. Osmotic dehydration (OD) is one of most important complementary pre treatment. This research was conducted to develop osmotically dehydrated chips using coconut haustorium and to find the most suitable packaging material. Experiments were carried out at the Coconut Research Institute, Lunuwila, Sri Lanka. Four types of osmotic solutions were used as, 45°, 55° and 65° Brix sugar solution and coconut treacle. Preliminary trials were carried out to find effect of osmotic agent and weight ratio on solid gain and water loss. Best geometry of haustorium chips was selected by visually. Size of 1 x 2 x 4 cm was selected. 45°, 55° and 65° Brix sugar solution were carried out for develop final products. Proximate composition and shelf life of the coconut haustorium chips with nylon LLDPE and TLAL packaging material were evaluated. Changes in sensory properties were determined by conducting the sensory evaluation. Developed product has low moisture content and high carbohydrate content. At the same time developed products were compared with others and 55° Brix –ODCHC was selected as the best product according to sensory evaluation. According to the shelf life studies, developed products can be stored in TLAL pouches under ambient temperature for more than 8 weeks. ODCHC can be used as a ready to eat snack food with good calorie value. Parametric data were analysed using Minitab 14 and SAS version 8 at $p < 0.05$ probability level and Microsoft Excel office package, 2010. Non-parametric data on sensory evaluation were analysed using Kruskal-Wallis Test.

Keywords: Coconut haustorium, osmotic dehydration, packaging material, osmotic agent, shelf life