213/B

Development of banana fingers coated with leaf gum of true cinnamon (*Cinnamomum verum)*

V G T Chathurika,[1] S N Weerasuriya[2] and J M J K Jayasinghe[1]

[1]Department of Food Science and Technology, Faculty of Applied Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda
[2]National Cinnamon Research and Training Center, Palolpitiya, Thihagodaya

Banana fingers were prepared with matured unripe Ash banana (*Musa acuminata*) to be used as a supplement to potato fingers. Ash plantains were hand peeled and cut into rectangular shape strips (1/2 x 1/2 x 5 cm) and dipped in a 800 ppm solution of sodium metabisulphite for 5 mins. Banana strips were subjected separately to 8 treatment combinations in a two-factor factorial design with three variables at two levels: i.e. blanching process, chemical leavening and edible coating with *Cinnamomum verum* leaf extract. Fresh mature cinnamon leaves with petioles were washed, dehumidifying dried and blanched in hot water at 100 °C for 10 mins and rapidy cooled with cold water. 2 g of leaves were macerated by blender with 50 ml of cold water and filtered through to extract a viscous solution of leaf extract/gum. The raw banana strips were divided into two portions and one portion was blanched in boiling water for 2 mins. The other portion was untreated. The blanched portion was divided into four portions in order to prepare four treatment combinations by dipping two of them in a sodium bicarbonate solution at 500 ppm and the rest in pure water. Two of them from each treatment were coated with viscous cinnamon leaf extract. The same procedure was adopted for the unblanched portion of banana fingers. All eight treatments were replicated thrice and were partially fried at 150 °C and frozen at 0 °C - (-18 °C) for 6 h in order to form ice crystals in the banana fingers. These eight treatments were fully fried at 180 °C for 90 sec in vegetable oil and the organoleptic properties were measured against potato fingers using an untrained sensory panel of 30 individuals to select the best combination of treatments. Proximate analysis, shelf life tests and a consumer survey to evaluate the acceptance were also carried out. Commercially available potato fingers were used as the control. The blanched, $NaHCO_3$ treated and leaf gum coated sample was found as the organoleptically acceptable sample. The selected banana finger sample contained 48% moisture, 18.40% total fat, 1.23% protein, 1.30% crude fibre and 2.27% ash. The potato finger samples showed 58% moisture, 15.14% total fat, 2.57% protein, 1.30% crude fiber and 1.8% ash. During the shelf life analysis of two months, undesirable change in colour, taste, smell and crispiness were not detected in the fried product prepared from partially fried frozen banana fingers. Consumers rated the taste, smell, crispiness and mouth feel of the newly developed banana fingers as better than those of potato fingers. Consumers preferred the colour and appearance of potato fingers than the newly developed banana fingers. However, banana fingers have a high potential to be a substitute for imported potato fingers in the fast food industry.

Keywords: Banana fingers, edible coating, organoleptic properties

thilinichathurikasp@gmail.com Tel: +94 415670233/ +94 714042387