DEPARTMENT OF AYURVEDA
MINISTRY OF HEALTH
SRI LANKA

UNIVERSITY OF KELANIYA | Faculty of Graduate Studies

2nd International Research Symposium on Traditional Medicine

"One Health for Sustainable and Healthy Living of Humans, Animals, and Ecosystems"

Organized by
The Faculty of Graduate Studies, University of Kelaniya

In collaboration with
The Department of Ayurveda, Ministry of Health, Sri Lanka

AyurEx
COLOMBO
2024

ABSTRACTS

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2nd International Research Symposium on Traditional Medicine (AyurEx Colombo) – 2024

Proceedings of the 2nd Symposium

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Abstracts

3rd – 5th May 2024

AyurEx COLOMBO 2024

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Abstract ID - 25

Development of boiled palmyra (*Borassus flabellifer* L.) tuber flour incorporated cookies

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Cookies are a popular food item worldwide. Wheat flour is the most common flour used in snacks due to its high gluten content, which gives baked products a unique structure and chewy texture. The use of wheat flour is limited due to gluten sensitivity, celiac disease, and other non-communicable diseases. It is beneficial to evaluate the possibility of replacing wheat flour with locally available healthy flour alternatives. Boiled Palmyra (*Borassus flabellifer* L.) tuber flour (BPTF) is a good alternative flour because of its functional and proximate characteristics, low glycemic index, and easy availability in some regions of Sri Lanka. This study attempted to develop BPTF-incorporated cookies by optimizing the flour ratio. Initially, the BPTF was debittered by soaking flour for predetermined durations of 1,6,12,18, and 24 hours. The best soaking time for optimal debittering was found to be 18 hours. After a set of pre-trials, four different flour ratios of BPTF: wheat flour (0:100, 30:70, 40:60, and 50:50) were further studied for suitability for cookie preparation. A standard sensory evaluation using a trained panel revealed that the cookies formulated with a 40:60 flour ratio received the highest overall acceptability. The proximate properties of the cookies formulated with the selected flour ratio are as follows; energy: 476.5 kcal, carbohydrates: 48.80 g, sugar: 5.92 g, fat: 28.23 g, Protein: 7.81 g, fiber: 9.81 g, ash: 1.4 g, and moisture content: 1.94 g (dry basis) per 100 g. The functional properties of cookies were found to be as follows; water absorption capacity: 17.67 %, swelling capacity: 0.58 g g^{-1}, bulk density: 0.7 g cm^{-3}(n=3). The other physical properties of the cookie were 4.60 cm diameter, 3.56 mm thickness, and 0.07 spread ratio (n=3). A consumer preference survey showed a positive response for 40 % of BPTF incorporated cookies. It is concluded that BPTF cookies have greater potential as a health snack, which can be commercialized.

Keywords: Cookies, Debittering, Functional properties, Palmyra tuber flour, Proximate properties

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