

# DEVELOPMENT OF PALMYRAH ODIAL BASED BREAKFAST CEREAL MIXTURE



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## Abstract

A research was conducted in Faculty of Agriculture, Eastern University, Sri Lanka to develop some nutritionally value added products with palmyrah odial to be used as a morning breakfast cereal food and select a best mixture among them by evaluating their nutritional as well as organoleptic characteristics. Besides that to develop different forms from selected odial based cereal mixture and assess their organoleptic quality.

The total palmyrah population in Sri Lanka is about eleven million, and the potential yield of the flour is around 5000 metric tones per year. As only a small quantity of odial is used for the production of value added products, it is advisable to diversify and make other starch based products. Therefore, a study was carried out to make the locally produced odial as more palatable and increase its consumption.

Twelve types of different mixtures were produced using boiled dried palmyrah tuber, rice, maize, sorghum, soybean, green gram, black gram, and sugar as raw materials. These blends were prepared by adding black gram of 12 %, green gram of 20 % and soybean of 7 % for each blend as protein sources and adding sugar of 23 % for sweetening purpose.

By adding different proportions of odial flour, varieties of mixtures were produced. Also by changing the amount and the combination of the cereals the differences were created among the treatments.

In order to select the best mixture among the twelve developed cereal mixtures, nutritional as well as sensory attributes of the products were evaluated. The findings of this study revealed that, all of the products other than T<sub>10</sub>, T<sub>11</sub> and T<sub>12</sub>, which were made up of 20 % of odial, are well suited for the consumption in case of their nutritional attributes.

With the intention of increase the accuracy of the results, the sensory analysis was done in two steps namely initial and final sensory analysis. According to the results from the initial sensory analysis which is the screening step of selecting the good products for further

sensory analysis, six products T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub>, T<sub>7</sub> and T<sub>8</sub> were selected. Afterward these six products were subjected to final sensory analysis for selecting the best product. Even though the mixtures T<sub>7</sub> and T<sub>4</sub> are not significantly differed among them, in any of the sensory parameters, T<sub>7</sub> can be considered as the best, as it achieved highest scores in all of the sensory attributes other than texture. Also the products T<sub>4</sub> and T<sub>7</sub> can be concluded as good in case of consumer acceptance because of its higher hedonic score values.

Though the breakfast mixes are able to prepare quickly for consumption, yet some kind of preparation such as mixing with coconut scrapes or with coconut milk is needed. In order to eliminate such kind of preparation, some different types, which are ready made forms for consumptions were produced from the best mix, which was selected from the nutritional as well as sensory characteristics. As people desire on different forms; flakes, dried pellets and ready to serve cereal powder were also produced, and their sensory attributes were analyzed.

Results from the sensory analysis of the developed different types of products revealed that, cereal mix wet pellets and Ready To Serve (RTS) cereal powder are the best among the four types of products. Although the cereal mix wet pellets obtained the highest scores in all of the sensory parameters, it is not significantly differed from the RTS cereal mix powder. Therefore RTS cereal mix powder can be concluded as good as cereal mix wet pellets in its sensory attributes.

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