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PG & RESEARCH DEPARTMENT OF NUTRITION AND DIETETICS

National Seminar on

RECENT TRENDS IN NUTRITIONAL SECTOR

NUTRISECTOR-2K23



This is to certify that Dr. / Mr. / Mrs. / Ms.

T. RENISHEYA JOY JEBA MALAR, ASSISTANT PROFESSOR of
PG and Research Dept. of Nutrition and Dietetics

*has participated in the "National Level Seminar on Recent Trends in
Nutritional Sector NUTRISECTOR- 2K23" on 22 February, 2023 as a*

Delegate/ Resource Person / Presented a Paper entitled

on FORMULATION OF BREAKFAST RECIPES BY INCORPORATING
HEALTH MIX POWDER and _____

won _____, organized by PG and Research Department

*of Nutrition and Dietetics, Muslim Arts college, Thiruvithancode,
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RECENT TRENDS IN NUTRITIONAL SECTOR

Mrs. T. Sherin Mary M.Sc., M.Phil., B.Ed., NET,
Dr. T. Renisheya Joy Jeba Malar M.Sc., M.Phil., Ph.D

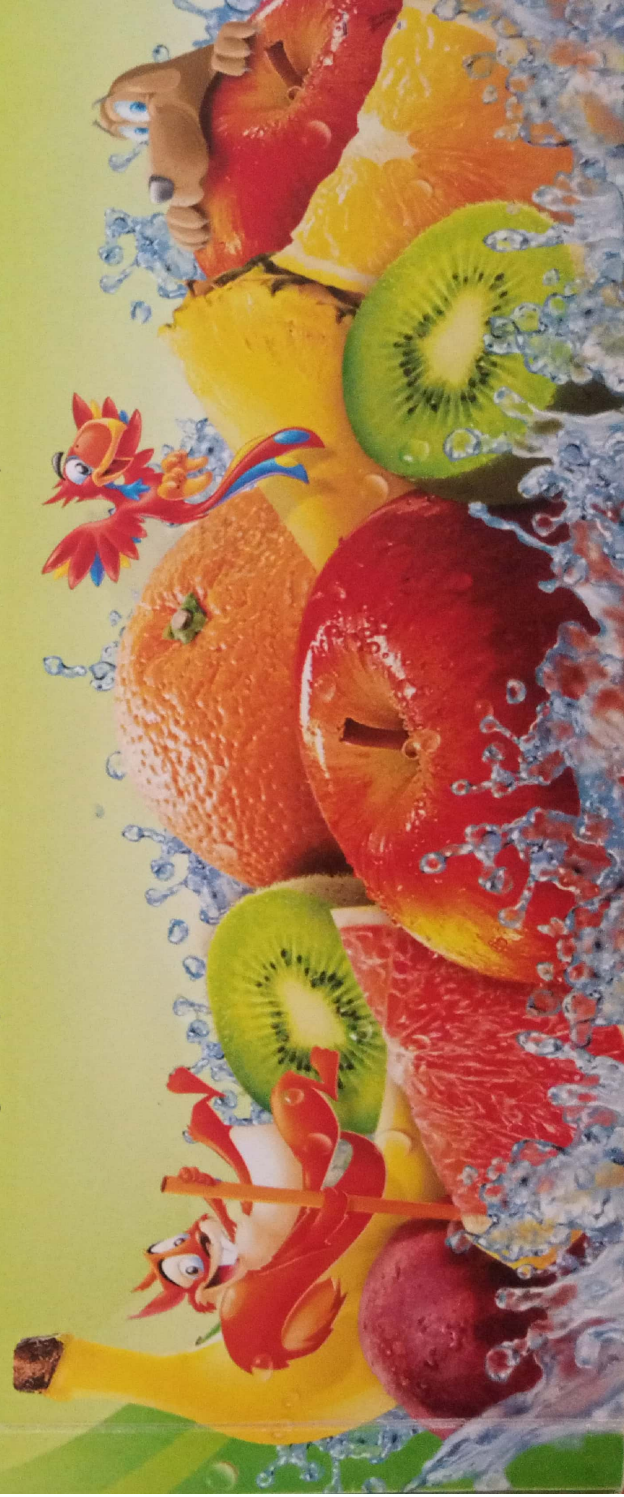


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EDITOR

Mrs. T. Sherin Mary M.Sc., M.Phil., B.Ed., NET,
Dr. T. Renisheya Joy Jeba Malar M.Sc., M.Phil., Ph.D

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FORMULATION OF BREAKFAST RECIPES BY INCORPORATING HEALTH MIX POWDER

B. Maria Regina Femi* & Dr. T. Renisheya Joy Jeba Malar**

*Research Scholar (2221309112006), PG & Research Department of Nutrition Dietetics, Muslim Arts College, Thiruvithancode, Affiliated to Manomaniam Sundaranar University, Tirunelveli
**Research Guide & Assistant Professor, PG & Research Department of Nutrition Dietetics, Muslim Arts College, Thiruvithancode, Affiliated to Manomaniam Sundaranar University, Tirunelveli

Abstract

A nutritious healthy mix was developed using staple cereals and pulses, nuts and spices. The nutritive value and cost of the developed healthy mix was found to be better than a commercial mix. The ingredients selected for health mix were wheat, barley, brown rice, ragi, maize, jowar, bajra, soyabean, cashew, cardamom, green gram dhal, Bengal gram dhal, groundnut and almonds. These ingredients contain many health benefits. The objective of study was to evaluate the nutrient content and to know the benefits of health mix, to know the acceptance level of the health mix powder product. The recipes prepared from the health mix powder were puttu, chappathi, cake, idiyappam. The developed products were evaluated organoleptically by using 5- hedonic scale. The nutrient content was also analyzed for the health mix product. Over all acceptability of the healthy mix recipes scored higher sensory value than the other based products. All the health mix ingredients were inexpensive and nutritious. Hence it was concluded that the health mix powder recipes are more acceptable and nutritious.

Key Words: Nutritious, Hedonic scale, Sensory Value, Health Mix

Introduction

Malnutrition continues to be the major health problem of the developing world included India (Bhraman, 1999). Malnutrition is related to poverty, less income, Lack of awareness and illiteracy (Pant, 2002). Compared to the availability of ready-to-eat products from rice, wheat and corn, the products based on minor cereals such as sorghum and millets are still scanty. Sorghum

and millets possess unique nutritional characteristics, specifically, they are gluten-free, represent good source of carbohydrates, rich in dietary fibre, phenolic compounds and also minerals (Saturni *et al.* 2010). Cereals are essential foods around the world, with wheat, rice, maize, oat, barley, millets, sorghum, rye, triticale, and folio representing the most commonly grown grains. (Rosenblueth M, 2018). Pulses are considered as poor man's meat due to their high protein content ranging from 20% to 40% (Mahajan *et al.*, 2000). Nuts are known as healthy foods in the Mediterranean diet because of their unique nutritional contents and their consumption has been recommended to populations worldwide (Ros E *et al.*, 2014). Wheat (*Triticum aestivum* L.) is one of the chief sources of diet by providing half of the dietary protein and more than half of the calories to the rising population of India. As a consequence, scientists are always focusing to produce higher yields to feed the nation (Khan *et al.*, 2015). Brown rice was unpolished whole grain rice that is produced by removing only the hull or husk using a mortar and pestle or rubber rolls. It may be distinctly brown, reddish or purplish. (Anonymous, 2000). Barley is a cereal grain botanically known as *Hordeum vulgare* L. and is believed for its origin from western Asia or Ethiopia. Barley is still considered as one of the top five cereal grains in the world (J. Simpson *et al.*, 1989). *Green gram* is popularly known as moong dal in India and is basically a tiny circular shaped bean that is green in colour (Smart. J, 1990). Finger millet (*Eleusine coracana* L.) is a important millet grown extensively in various regions of India and Africa, constitutes as a staple food for a large segment of the population in these countries which provides low cost protein, minerals and vitamins. (Bennetzen *et al.*, 2003). Bajra (*Pennisetum glaucum*) is the most widely grown variety among all millets in India. It is a highly nutritious coarse cereal grain (Grant Thornton India Llp, 2016). Soya bean belongs to leguminous family. It comes under oil seeds due to high fat content. Soyabean was rich in lysine and can be used to supplement a staple rich diet (Aji and Kumar S, 2007). Seeds from the plant *Elettaria cardamomum* (family Zingiberaceae) are the source of genuine or true cardamom also known as green or small cardamom (Swahn J. 1991). Almonds (*Prunus dulcis*) are nutrient dense because they are an excellent source of α -tocopherol, riboflavin, magnesium, and manganese, and a good source of dietary fiber, protein, copper and phosphorus (Chen CY, 2006). The present research revealed the nutrients present in the formulation prepared from the health mix ingredients like Wheat,

Brown rice, Barley, Green gram, Finger millet, cardamon, Bajra, Soyabean and Almonds. The sensory evaluation of the products prepared from the health mix was analysed.

Materials and Method

- ❖ Selection of raw materials (Cereals, Pulses, Nuts, Spices) Selection of recipes.
- ❖ Pre treatment employed
- ❖ Preparation of recipes from health mix (Puttu, Chappathi, Idiyappam)
- ❖ Sensory evaluation of the health mix & recipes (Protein, Carbohydrate, Ash, Moisture)
- ❖ Nutrient analysis of the formulated mix
- ❖ Keeping quality of the selected health mix product.
- ❖ Cost analysis
- ❖ Popularization of the products

Result and Discussion

The study pertaining to “FORMULATION OF BREAKFAST RECIPES BY INCORPORATING HEALTH MIX POWDER” consists of the following steps.

1. Sensory Evaluation of the selected recipes prepared form Health mix
2. Keeping quality of the selected ingredients
3. Nutrient content of the selected ingredient

Table.1. Sensory Evaluation

SI.No	Sample	Overall Acceptability
1.	Puttu	84%
2.	Idiyappam	84%
3.	Chappathi	80%

Keeping quality of the selected recipes

The Keeping quality of the samples was done for the selected health mix recipes and health mix powder. The same volume of the selected sample was taken in two separate containers and they were stored in different temperature like the normal temperature and in the refrigerator. To find out their storage behaviour they were kept as such for two months. These containers checked or examined once 5 -10, 10 -15, 15 - 20 for the growth of any micro organisms development of any off flavour and production of gases.

Table.2. Nutrient content of the selected recipes

Sl.No	Recipes	Nutrients			
		Protein(g)	Carbohydrate(g)	Ash(g)	Moisture
1.	Puttu	3.8	18	2.1	11
2.	Chappathi	3.8	17	1.9	9
3.	Idiyappam	3.4	13	1.7	7

The results of the sensory evaluation revealed 84% of higher acceptability in puttu and idiyappam compared to chapathi of 80% prepared from the health mix. In case of nutrient analysis puttu showed higher nutrient content of 3.8% protein, 18% carbohydrate, ash (2.1%) and moisture content of 11% compared to chapathi and idiyappam.

Conclusion

The Health mix was a nutritious blend of cereals millets and pulses ensures our body gets the right protein profile. The overall acceptability of puttu and Idiyappam had maximum marks and the acceptance was also good. It was easily prepared and consumed by adults and childrens. The acceptability of the product prepared using nutritionally rich health mix was well good.

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