



Nutri- Tiranga Special Snack for Low Income Group

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ABSTRACT

Nutri Tiranga was envisage as a snack that is rich in nutrient & protein. The recipe was a modification of traditional recipe "Dhokla" which is consumed in the Indian subcontinent.

The traditional recipe is made from Bengal Gram flour with the help of an aerating agent (eg. cooking soda) but we had modified it by making use of fermented batter made from Parboiled Rice, Black Gram Dal, Bengal Gram Dal & functional foods like flax seeds, garden cress seed, methi seeds were also used. Curd was added to the batter for fermentation which enriched the probiotic factor in the snack which improves mechanism of digestion in human body.

In order to make the dhokla more nutrients dense we improvised the recipe by adding two more layers. First layer with whole Green Gram & coriander leaves and the second layer with carrot & beetroot. These additions made it not only nutrient dense but also more palatable.

Due to fermentation, bioavailability of vitamins, minerals, fibre & proteins were increased as compared to the traditional or basic recipe. Therefore this recipe is can be added in healthy dietary lifestyle of an individual.

KEYWORDS : Modified Food Product, Bioavailability, Fermentation, Nutrient rich

Nutri Tiranga is Tri-colour snack for Low Income group People in India. It is nutritious, delicious, easy to make and low cost snack for all. There are many nutritional and social aspects taken care while preparation of the snack.

India is developing country. Many people in the nation are still poor, below poverty line or they live their lives hand to mouth. This tends to eating cheaper food which normally sourced with less nutritional contents. This leads to mal-nutrition. The study has also tried to overcome this problem with a high nutritious but very low cost snack which is affordable to any person over the nation.

The tri-colour represents three major nutritional fundamentals: - **Protein, Energy and Fibre**. The main aspect of any food intake is to have energy. This snack is made full of energy. It was observed that normal Indian food intake is less in protein. In this snack special care taken for protein enrichment. New concept introduce in snack is Fibre. The most important and the most neglected content in food intake is fibre. It is included in the snack as it is very important for digestion.

Other important nutritional components: - Iron, Phosphorus, Omega Acids & Anti-Oxidants, Pro-Biotic is also made available which gives complete nutrition to the person.

The standard snack intake is about 50 to 60 grams in India. Therefore

a concept of modifying the food was introduced to cater the need of privilege section of the society.

The standard 60gm intake gives a person 5.16gm of Protein which is approximate 10 % of his total daily protein requirement. It gives 121.7 Kcal Energy which is approximate 7 % of his total daily energy requirement. It also gives 4.25gm of Fibre which is approximate 10% of his total daily fibre requirement.

The other important nutritional components are: - Iron, Phosphorus, Omega Acids & Anti-Oxidants, Pro-Biotic are made available in the snack intake.

This snack is modification of traditional Dhokla. Dhokla is largely consumed snack item in India. It is from the Gujarat state originally but famous and consumed all over the India. It is made by the ingredients which are normally available in any household. So it is easy to prepare without any special food stuff.

The traditional Dhokla gives lots of energy at intake but it is yellow or white in colour which is not so attractive. Also it gives only carbohydrates which fulfil only energy requirement but for protein and other nutritional components supplement stuff is needed.

We modified this famous snack to an attractive, low cost and full with all nutritional components. We used following ingredients in the

snack and obtained following nutritional values.

This table shows values of nutrition obtains from snack which is really low cost, nutrition rich, tasty and attractive snack.

CALCULATION OF NUTRITIONAL EVALUATION -

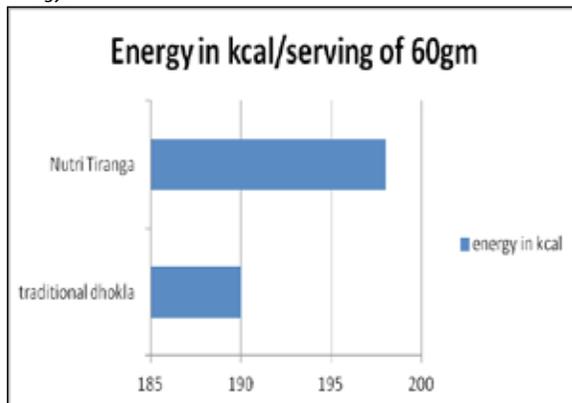
For 100gms	Energy (Kcal)	Carbs (Grams)	Protein (Grams)	Fats (Grams)	Minerals (Grams)	Calcium (mg)	Phosphorus (mg)	Iron (mg)	Crude Fibre (Grams)	Vitamin C (mg)
Ingredients FOR NUTRI-TIRANGA										
Rice	345	78.2	6.8	0.5	0.6	10	160	0.7	0.2	0
Moong	334	56.7	24	1.3	3.5	124	326	4.4	4.1	0
Udad Daal	347	59.6	24	1.4	3.2	154	385	3.8	0.9	0
Chana Daal	372	59.8	20.8	5.6	2.7	156	340	9.5	1.2	1
Carrot	48	10.6	0.9	0.2	1.1	80	538	1.03	1.2	3
Beet	43	8.8	1.7	0.1	0.8	18.3	55	1.19	0.9	10
Onion	50	11.1	1.2	0.1	0.4	46.9	50	0.6	0.6	3
Curd	60	3	3.1	4	0.8	149	93	0.2	0	1
Flax Seeds	530	25.9	20.3	37.1	2.4	170	370	2.7	4.8	0
Garden Cress Seeds	454	33	25.3	24.5	6.4	377	723	100	7.6	0
Methi Seeds	333	44.1	26.2	5.8	3	160	370	6.5	7.2	0
Oil	900	0	0	100	0	0	0	0	0	0
Ginger + chilli paste										
Salt										
FOR CHUTNEY (supplementary for taste)										
Coriander	844	6.3	3.3	0.6	2.3	184	71	1.42	7.2	135
Chana Daal	372	59.8	20.8	5.6	2.7	156	340	9.5	1.2	1
Lemon	57	11.1	1	0.9	0.3	70	10	0.26	1.7	39
Ginger + chilli paste										
Salt										

Here are the actual values obtained from 60gm serving.

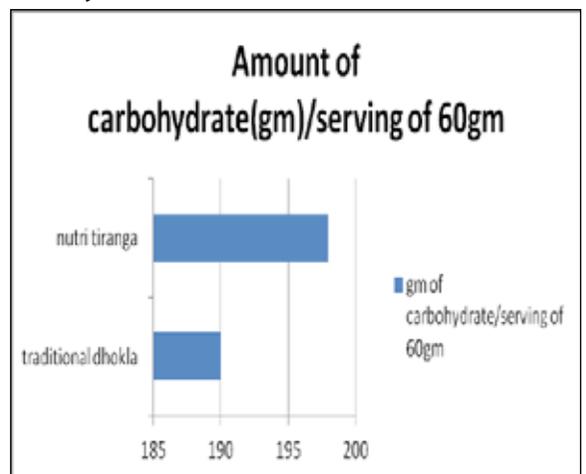
Energy (Kcal)	Carbs (Grams)	Protein (Grams)	Fats (Grams)	Minerals (Grams)	Calcium (mg)	Phosphorus (mg)	Iron (mg)	Crude Fibre (Grams)	Vitamin C (mg)
121.7	21.16	5.16	1.43	0.81	49.58	110.95	2.4	0.58	4.25

Comparison between nutritive values of Traditional Dhokla Vs Modified Nutritive Tiranga

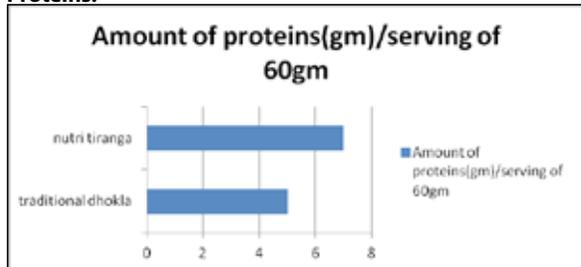
Energy:



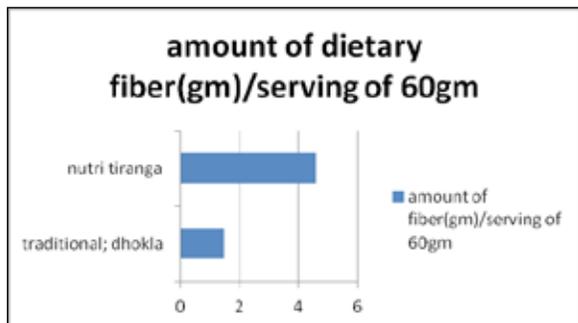
Carbohydrates:



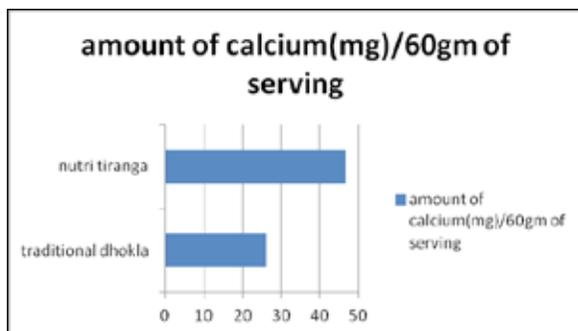
Proteins:



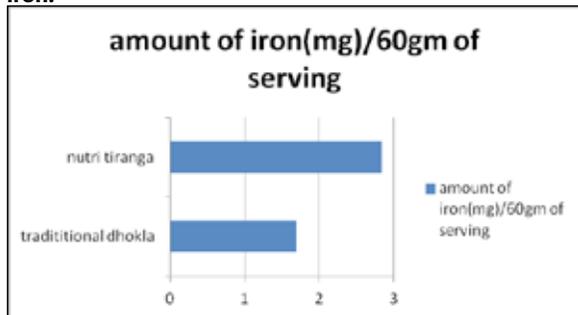
Fiber:



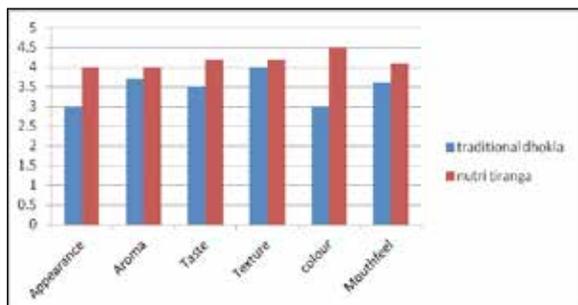
Calcium:



Iron:



Graph of comparison of sensory evaluation of Traditional Dhokla Vs Modified Nutri Tiranga.



Apart from nutritional values and cost factors there are many health related issues concern with the snack. Ingredients of Nutri-Tiranga help the consumer in following manners:-

Rice: High in energy, carbohydrates also contains moderate amount of protein, calcium, phosphorus, Iron, Vit-B12 and minerals. It gives Instant energy after intake. Very important nutrition for body.

Moong: - High in Protein, High in fibre helps to lower cholesterol, Low in calories, skin anti-aging properties, low on glycaemic index, anti-inflammatory, containing oligosaccharide to prevent gas and bloating.

Udad Dal: - Richest sources of protein and vitamin B, good for women-it has iron, calcium, potassium, folic acid, useful for vegetarian, helps to keep strong bones.

Chana Dal:- Rich in content of zinc, folate and protein, high content of fibre, abundance of calcium, low in the content of fats

Carrot: - Reach source of Energy, phosphorus & Fibre. It reduces cholesterol level, risk of colon cancer, breast cancer, and macular degeneration.

Beet: - Full of energy, carbohydrates. Also has calcium phosphorus & minerals. Improve muscle oxygenation, helps digestion; Inflammation also improves performance of body.

Onion: - Contain calcium, iron, foliate, magnesium, phosphorus & potassium, antioxidants quercetin & sulphur. Decreases risk of obesity, diabetes, heart disease.

Curd:- Very good for fermentation, Good for digestion, makes bones and teeth stronger, helps to lose weight, maintaining great heart, act as immunity booster, yogurt protects body from various microorganisms, extremely beneficial on vaginal yeast infection

Flax seeds: - Omega -3 fatty acids (ALA) inhibit tumour incidence and growth –each tablespoon of flaxseeds contain about 1.8 gm of plant omega-3s, has lignance, reducing inflammation, helps to prevent heart attacks and strokes.

Garden cress seeds :-Menstrual cycle regulation, it contains phytochemicals

Fenugreek seeds: - Controls blood sugar level, soothe skin inflammation reduce scars.

Coriander: - Source of dietary fibre, manganese, iron & magnesium. It is also rich in Vitamin C, K and protein. It has small amount of calcium, phosphorus, potassium, thiamine, niacin & carotene. It lowers bad cholesterol, good digestive.

We conclude that the *Nutri Tiranga* is suitable for any locality from any part of nation. It can be consumed and digested easily. Even it is suitable for any region's test-buds. Ingredients used in snack are commonly available in any part of the India. It is made very lucrative and tasty that anybody can consume it. It is high nutritious but very low cost snack which is affordable to any person over the nation. This snack is made full of energy. The special care for protein enrichment is taken care. Fibre is included in the snack as it is very important for digestion. Other important nutritional components such as iron, phosphorus, Omega acids and anti-oxidants, pro-biotic are also made available which gives complete nutrition to the person.

Thus, *Nutri Tiranga* fulfils the requirements for which it has been developed to meet the need of various sedentary disorders.

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