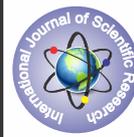


CEREAL PULSE SPROUT DAHI CHAAT**Home Science**

KEYWORDS: sprouted jowar, ragi, mothbeans, cluster beans, lifestyle disorders, iron deficiency anemia

DR. RUPALI SENGUPTA

GUIDE & CO-ORDINATOR, BMN COLLEGE, MATUNGA, MUMBAI, IGNOU, STUDY CENTRE 49045P

PAVITHRA SAMPATH KUMAR

STUDENT PARTICIPATED IGNOU, STUDY CENTRE 49045P, BMN COLLEGE, MATUNGA, MUMBAI,

DR. VIDUSHI AGRAWAL

STUDENT PARTICIPATED IGNOU, STUDY CENTRE 49045P, BMN COLLEGE, MATUNGA, MUMBAI,

ABSTRACT

"CHAAT" being widely accepted as an Indian Snack, it was modified, and made healthy, further suitable for Life Style Disorders in the present scenario. Normally a Chaat would contain puffed rice which is high in glycemic index and sodium content, hence not suitable. Therefore it was replaced with "Sprouted Jowar and Ragi", (gluten free) which are comparatively low in Glycemic Index and high in Calcium, Iron and Fibre. When sprouted, digestibility increases, protein quality improves and anti - nutritional factors are reduced. Content of Vitamin C increases to a small extent. Multi-pulses such as cluster beans, moth beans, whole green moong and dried green peas all in the sprouted form were used. When sprouted, bioavailability of Vitamin C increases which facilitates increased absorption of iron. The use of Cereal and Pulse in this Chaat ensures "Complete Protein" availability to the consumer. Among vegetables, Onion, Tomato, Capsicum and Coriander Leaves were used. This ensures availability of Beta Carotene, Iron, Phytochemicals, Insoluble Fibre & Vitamin C. Curd being "Probiotic" in nature, improves the digestibility in the gut. It also enhances the taste of Chaat

INTRODUCTION

Traditional street food which is authentic or famous for the puffed rice, boiled potatoes, sev, peanuts, papdi or fried pooris, sometimes also served with chutney made out of tamarind dates or with green chilli chutney. It is a snack commonly taken during tea time.

National family health survey statistics report **done by SRL DIAGNOSTICS published on website of EHEALTH Services on March 26, 2015**, revealed that every second Indian woman is anemic and one in every 5 maternal deaths is directly due to anemia. Hence the "Sprouted Cereal Pulse Dahi Chaat" was prepared since it resulted in the increase of the Biological Value of the Modified Food Product

METHODOLOGY

To provide a health chaat which gives a sense of fullness with nutrients loaded.

DEVELOPING FOOD PRODUCT

The recipe was modified in the year 2016 - 2017 in MSCDFSM - IGNOU in DR. BMN COLLEGE OF HOMESCIENCE under guidance of Dr. Rupali Sengupta

Collect the Ingredients

Ingredients	Quantity	Soaked / Unsoaked	Sprouted
Cereals: Jowar & Ragi	200 gms each	Soaked for 4 hours	Yes
Pulses: Moth Beans (60 gms), Whole Green Moong (60 gms), Cluster Beans (100 gms), and Dry Green Peas (60 gms)	Total : 280 gms	Soaked for 4 hours	Yes
Coriander Leaves	200 gms	NO	NO
Tomato	100 gms	NO	NO
Onion	50 gms	NO	NO
Capsicum	50 gms	NO	NO
Curd	200 gms	NO	NO
Jaggery	20 gms	NO	NO
Garlic	10 gms	NO	NO

Rock Salt	TO TASTE	NO	NO
Amchoor Powder	TO TASTE	NO	NO
Red Kashmiri Chili	for color	NO	NO

PROCESS OF PREPARATION

Boil / Steam the sprouted Cereal and Pulse to a soft consistency
 Take a big vessel, put the minutely cut coriander leaves, add garlic, onion, rock salt, amchoor powder, and red kashmiri chilli powder and mix well
 Add the boiled sprouted cereal and pulse and again mix well with a spoon
 Serve in plate. Decorate with Tomato and Capsicum on the sides
 Add 20 gms of Jaggery powder to 200 gms of Curd, mix well and while serving add as a garnishing on the top of the Chaat

NUTRIENT VALUE - "CEREAL PULSE SPROUT DAHI CHAAT"

SOURCE: Calculation of Product was done with reference to C.Gopalan NATIONAL INSTITUTION OF NUTRITION and was compared with the modified product.

The difference in the Nutritive Value was observed

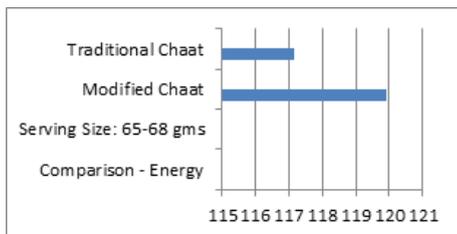
Ingredient	QUANTITY (GMS)	ENERGY (KCAL)	PROTEIN (GMS)	CARBS (GMS)	CALCIUM (MGS)	IRON (MGS)	DIETARY FIBRE (GMS)
JOWAR	200	698	20.8	145.2	50	8.2	8.1
RAGI	200	656	14.6	144	688	7.8	7.9
WHEAT (optional)							
MOTH BEANS	60	198	14.16	33.9	121.1	5.7	2.7
CLUSTER BEANS	100		3.2	10.8	130	1.08	2.5
WHOLE GREEN MUNG	60	208	14.7	35.9	45	2.34	0.48
DRIED GREEN PEAS	60	208.8	14.7	35.9	45	2.34	4.2
ONION	50	50	1.2	11.1	1.2	46.9	0.6

CAPSICUM	50	60	3.25	10.75	25	1.4	0.2
TOMATO	100	20	0.9	3.6	48	0.6	1.9
CORIANDE R LEAVES	200	88	6.6	12.6	368	2.84	6.4
CURD	200	120	6.2	6	298	0.4	-
JAGGERY	20	76.6	0.8	190	160	5.28	-
GARLIC	10	14.5	3.15	2.98	3	0.12	0.44
TOTAL FOR 20 SERVINGS	1310	2397.9	104.7	642.73	1982.3	85	35.42
TOTAL FOR 1 SERVING	65.5	119.9	5.24	32.14	99.16	4.25	1.771

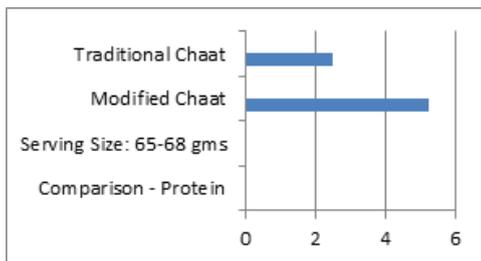
INGREDIENTS FOR ORIGINAL CHAAT

Ingredients	QUAN TITY (GMS)	ENERG Y (KC AL)	PROTE IN (GMS)	CARBS (GMS)	DIETA RY FIBRE (GMS)	CA (MG)	FE (MG)
Puffed rice	60	195	4.5	44.16	0.3	13.8	3.96
Nylon Sev	60	265	3	12	0	0	0
Fried Puris	60	107	2.71	16.82	0	0	0
Boiled Potatoes	25	68	1.46	15.7	1.6	6	0.29
Tomatoes	100	20	0.9	3.6	1.9	48	0.64
Onion	50	25	0.0024	5.5	0.8	23.45	0.3
Tamarind Pulp	20	64.4	1	11.1	0	34	3.4
Total: 5.5 servings	375	644.4	13.6	108.88	4.1	125.25	8.59
Per Serving	68	117.16	2.47	19.8	0.75	22.77	1.56

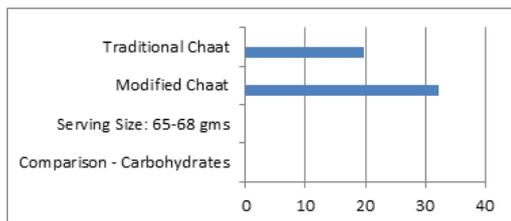
**COMPARISON BETWEEN NUTRITIVE VALUE –
TRADITIONAL VS MODIFIED CHAAT**



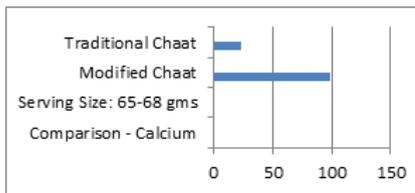
Energy



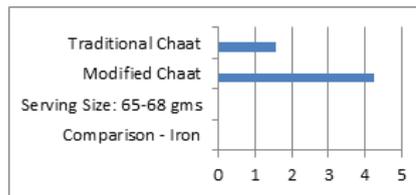
Protein



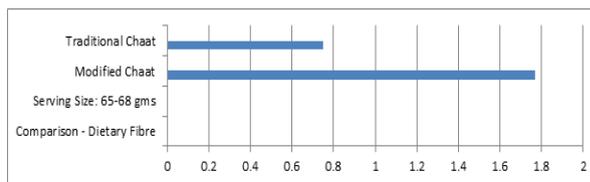
Carbohydrates



Calcium



Iron



Dietary Fibre

COMPARISON OF NUTRITIVE VALUE

The modified product was comparatively high in protein, iron, dietary fibre, and also Vitamin C which increases due to sprouting of cereal pulse combination. Curd as probiotic, improves the digestibility in the gut was also taken under consideration for the study.

Also, the cereal Jowar and Ragi are rich in Iron, which was necessary for the body to produce RBCs. However iron in these cereals is in the Non – Heme form, which is not easily absorbed by the blood cells. Hence, sprouting converts the non – heme form into the absorbable form, which is easily absorbed by the blood cells. Also, dietary fibre is high, in comparison to other cereal groups. According to a 2009 study published in “Nutri Reviews”, a diet rich in fibre from foods like Jowar reduces all the lifestyle disorders and can also help in the Iron Level Maintenance. Whereas in the traditional preparation, Chaat contains high carbohydrates and fat. Pulse such as Moth beans, Whole Green Moong, Cluster beans and Dried Green Peas are a pack of Army armed with protein, due to sprouting, there is increased digestibility, reduction in anti-nutritional factors. This also helps in increasing immunity and adding bulk to the diet, which acts as a Laxative Agent

RESULT AND DISCUSSION

Cereal Jowar and Ragi are rich in Iron, which is necessary for the body to produce RBCs. However iron in these cereals is in the Non – Heme form, which is not easily absorbed by the blood cells. Hence, sprouting converts the non – heme form into the absorbable form, which is easily absorbed by the blood cells. Also, dietary fibre is high, in comparison to other cereal groups. According to a 2009 study published in “Nutri Reviews”, a diet rich in fibre from foods like Jowar reduces all the lifestyle disorders and can also help in the Iron Level Maintenance. Whereas in the traditional preparation, Chaat contains high carbohydrates and fat. Pulse such as Moth beans, Whole Green Moong, Cluster beans and Dried Green Peas are a pack of Army armed with protein, due to sprouting, there is increased digestibility, reduction in anti-nutritional factors. This also helps in increasing immunity and adding bulk to the diet. Due to Insoluble fibre present in green peas and moth beans, moong, jowar and ragi, it helps in weight loss management. This provides satiety to the consumer and reduces unhealthy snacking

The modified product is high in Fibre (TDF), Iron, Calcium, and Good Biological Value Protein in comparison to the Traditional Chaat

CONCLUSION

Though the objective of the study was mainly on Obesity Affected and Iron Deficient Population, however, this product is also suitable for people of all ages and genders and those affected with various lifestyle disorders like Diabetes, Heart Problems, Low Calcium, & Lactose / Peanut / Gluten Intolerant People etc.

This is an "Anytime Snack" that could be easily prepared at home by kids, senior citizens when all ingredients are kept ready. All the Food Groups have been included in this "Cereal Pulse Sprout Dahi Chaat", also all the nutrients kept intact, without compromising on taste of the "Local Bhel" available on the Streets of Mumbai

REFERENCES

1. NATIONAL RURAL HEALTH MISSION
2. NIN
3. www.ehealth.eletsonline.com