



QUALITY EVALUATION OF HADJOD STEM (*Cissus quadrangularis*) POWDER FORTIFIED IN PEARLMILLET ROTI

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ABSTRACT

BACKGROUND : Food which is the source of health and wellbeing of the living organisms. In case of human beings, the physical and mental well-being depends on which food they intake. Hadjod stem is one of the good plants which is used in treatments for various medicinal conditions. Pearl millet is a deep root system comparing with other cereals it holds higher nutritional merits. This product is beneficial for the enrichment of nutritional status.

RESULT : Calcium, Magnesium and Phosphorous are the nutrients that good when compared to control. Nutritional factors like Protein, calories and Carbohydrate of the developed product are exceeds from the better sources when comparing the control's sources.

CONCLUSION: Finally, the Product which has been developed outperforms the control completely in terms of Nutritional aspects. Due to its nutritive value this product is especially recommended for celiac disease peoples and this product is low in cost which is avail these days.

BACKGROUND :

Food is vital for health and well-being of an individual. Our nutritional status, health, physical and mental well-being depends on the food we eat it (Chandrasekara and Shahidi,2010). Pearl millet is a major warm season coarse grain cereal grown on 26 million in some of the harshest semi-arid tropical environments of Asia and Africa. India has the largest area (9–10 million ha) under this crop, ranking it third along with sorghum (Ashraf H *et al.*, 2005).

Pearl millet is a good source of energy, protein, vitamins, dietary fibers and minerals. It is high in fat and better fat digestibility than other cereals (Antony *et al.*, 1996). *Cissus quadrangularis* It is commonly known as Hadjod, is a perennial plant of the family Vitaceae (Guhabakshi *et al.*, 2001). Pirandai is very useful for stomach as well as heart. It will set right gastric disorder and protect the heart (Guhabakshi *et al.*,2001). Medicinal plant has been used as traditional treatment for numerous human diseases for thousands of years and in many parts of the world. More than 30% of the entire plant species, at one time or other was used for medicinal purposes (Baby Joseph *et al.*, 2013). Roti are the most popular unleavened flat breads in India and

is consumed during almost every meal of the day in some part of the country. The most important quality parameters for roti are softness and flexibility (Sidhu,1995).

METHODS : Pearl millet Hadjod stem(pirandai) obtained from the local market in Coimbatore.

STANDARDIZATION :

S.NO	INGREDIENTS	VARIATION I	VARIATION II	VARIATION III
1	PEARL MILLET	50	50	50
2	HADJOD STEM POWDER	3	6	8

PREPATION: The running water is used for the cleaning of the pearl millet and hadjod stem. The pearl millet was washed for twice time and then it was getting in four processing method that is Roasting, Dry heating, Sprouting and Fermentation. Then

RESULTS:

ORGANOLEPTIC:

The roti prepared using all the variations was subjected to organoleptic evaluation for its quality attributes like appearance, colour, texture, taste, flavour and overall acceptability using 5-point hedonic scale.

the four-variety flour was making it into roti then sprouted roti was selected as the best. The pirandai was cleaned and dry in sunlight then it was fortified into sprouted pearl millet and make it into roti

Total of 30 semi trained panel members were used in this study. The variation which was most acceptable among the recipes was selected and used for cost effectiveness.

	Appearance	Color	Taste	Texture	Overall acceptance
Control	4.36±0.490	4.03±0.808	4.33±0.479	4.33±0.606	4.3±0.595
Variation I	3.96±0.718	3.37±0.621	3.43±0.568	3.46±0.681	3.56±0.504
Variation II	3.93±0.784	3.5±0.629	3.53±0.731	3.5±0.731	3.5±0.572
Variation III	4.76±0.430	4.66±0.479	4.83±0.461	4.73±0.449	4.9±0.305

*Compare to all other variations the variation 3 - secured highest mean score for overall acceptability. so, it was selected for further study

NUTRITIONAL: The nutrient composition Hadjod stem powder fortified in pearl millet roti; energy, protein, carbohydrates, fat, fiber, iron, vitamin c, phosphorus, magnesium, calcium . Among the variations of roti, the sensory scores of

variation-III have been taken in nutrient analysis.

S.NO	PARAMETERS	NUTRITIVE VALUE
1	ENERGY (kcal)	359.0
2	CARBOHYDRATES (g)	63.64
3	PROTEIN (g)	18.5
4	FAT (g)	8.32
5	FIBRE (g)	8.32
6	IRON (mg)	5.5
7	VITAMIN C (mg)	2.37
8	PHOSPHORUS (mg)	245
9	MAGNESIUM (mg)	112
10	CALCIUM (mg)	83

CONCLUSION :

It can be concluded that the nutrient rich good quality Pearl millet roti can be prepared with incorporation of Hadjod stem powder and the product was techno-economically feasible. A roti is a stable food for many countries.

Therefore it is concluded that Hadjod stem powder can be used to replace pearl millet flour in product development to achieve the objectives of reducing the cost of cereal based stable foods and developing health enhancing food for the consumer.

