



VALUE ADDED PRODUCT WITH RAGI(ELEUSIONECORACANA) & NUTRITIONAL IMPLICATION

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ABSTRACT

Finger millet has been in use since long time, as an ingredient for preparation of traditional food. Finger millet is comparable to rice with regard to protein (6-8%) and fat (1-2%) and is superior to rice and wheat with respect to mineral and micronutrient contents. It is a major source of dietary carbohydrates for a large section of society. However, its utilization in the daily dietary at present is largely restricted to rural areas only. Preparation of value added product and convenient food products would be the possible solution for its promotion and enhancement of consumption, nutritional status. This will also help the country to diversify the food basket for nutritional sustainable food availability to the common mass with low purchasing capacity. The present paper describes some of the possible value added products from finger millet.

Keywords: millet, millet processing, finger millet, rural areas

INTRODUCTION

Millet sustains one third of the world's population and play a significant part of the diet in India and is largely eaten low income or poor section of society. Millets particularly maize, sorghum, pearl millet, finger millet constitute a little less than 25 per cent of the total food grain production in India. However, they are generally regarded as coarse grains, their potential for augmenting the grain supplies and bridging the protein gap is increasingly realized. It has

been reported in studies that approximately 8.1 million children under the age of five year suffer from different forms of malnutrition. The mortality associated with severe acute malnutrition is also high, ranging from 73 to 187 per 1000 (Pelletier, 1994).

One of the suggested methods for improving the quality of diet has been the use of nutritious premixes at home for children with uncomplicated SAM



in order to improve their nutritional status (Lancet 2008).“Ragi” is considered as nutricereals as it is rich in macro, as well as micro nutrients along with phyto-chemicals. It is highly nutritious and is richer in protein, fat, minerals and dietary fibre than rice. It is non-acid forming, minimally allergic and an easy-to-digest grain. It also contains good amounts of crude fibre and phosphorus (Mallet & Desikachar, 1985).

Milletts contain water soluble gum and β -glucan that is useful in improving glucose metabolism Ragi can be used in preparing amylase rich premixes by germinating technique at household level which can then be administered to children.

MATERIALS & METHODS

Ragi is considered to be a coarse grain as compared to rice because of its fibrous seed coat. It being unique among cereals, Ragi is very rich source of calcium containing 0.3 to 0.4 g as compared to other minerals like phosphorus, iron, magnesium and

fibre. Its protein is relatively better balanced because Ragi contains more enzymes like lysine, threonine and valin then other millets (Ravindran, 1991).

Ragi is rich in calcium which helps in strengthening bones. It is an excellent source of natural calcium for growing children and people. Ragi consumption helps in development of bones in growing children and maintenance of bone health in adults.

Ragi in composition with flour has been added to prepare the Ragi mix laddu. Ragi in different composition such as 15%, 25% and 30% has been mixed with flour for preparation of Ragi laddu and it has been provided to school going girls.

When the quality of product is assessed by mean of human sensory organs, the evaluation is said to be sensory or subject or organoleptic. Every time food is eaten a judgement is made. Sensory quality is a combination of different senses of perception coming into play in choosing and eating a food. Appearance, flavour



and mouthfeel decide the acceptance of the food (Srilakshmi, 2007).

RESULTS & DISCUSSION

Organoleptic evaluation: Sensory evaluation for Ragi mixed ladduwas done by a panel and its scored on various properties are listed as below:

It is evident from table 1 that significant difference in all the sensory parameters i.e. appearance, colour, flavour and taste was observed between different mixes of Ragi Laddu. In the present study, nutritive value was found to be significantly better. It can be concluded that after value addition with bengal gram, spinach and soy milk, the traditional Angakar Roti becomes better not only in terms of sensory attributes but also in terms of the nutritive value

Ragi is usually converted to flour and variety of preparation like cheela, laddoo, salty porridge. Traditionally it is used as an infant weaning food in south India (Meera, 1997). Cereals form a major portion of human diet and

are an important source of starch and other dietary carbohydrates (dietary fibre), which play an important role in the energy requirement and nutrient intake of human. The millets are with higher fibre content and their protein quality and mineral composition contribute significantly to nutritional security of a large section of population residing in the millet growing areas, considered to be the most disadvantaged groups (Desai, 2010).

Millets are most recognized nutritionally for being a good source of minerals magnesium, manganese and phosphorus. Research has linked magnesium to a reduced risk for heart attack and phosphorus is important for the development of body tissue and energy metabolism. Millets are also rich in phytochemicals, including phytic acid (Shashi et al., 2007).

Finger millet also known as Ragi in India is one of the important cereals occupies highest area under cultivation among the small millets.



Finger millet is comparable to rice with regard to protein (6-8 %) and fat (1-2 %) and is superior to rice and wheat with respect to mineral and micronutrient contents. It is a major source of dietary carbohydrates for a large section of society. Additionally Ragi has enormous health benefits and also a good source of valuable

micro-nutrients along with the major food components.

In order to develop the value added food products based on Ragi, that can able to enrich the nutritional value and also beneficial for good health is the current need for the wellbeing of the society. Food is consumed in combinations (Lakshmi and Sumathi, 2002)

Table 1: Mean ± Standard deviation distribution of ragi based laddu

| Sensory Parameters | Mix (15%) | Mix (25%) | Mix (30%) |
|-----------------------|------------|--------------|-------------|
| Appearance | 7.19± 1.07 | 6.48± 2.10 | 8.32± 1.97 |
| Colour | 5.32± 2.93 | 6.10± 3.19 | 5.78± 3.07 |
| Flavour | 7.13± 1.43 | 6.28± 3.11 | 9.19± 2.88 |
| Taste | 7.19± 1.07 | 6.48± 2.10 | 8.32± 1.97 |
| Texture | 5.02± 4.39 | 6.73± 3.89 | 5.97± 3.75 |
| Overall Acceptability | 6.37 ±2.17 | 6.398 ± 2.87 | 7.56 ± 2.72 |

REFERENCES

1. P. Pushpamma and K. Chittemma Rao, *Varietal Preference, Marketing, Storage, Processing and Utilization of Sorghum and Millet in Andhra Pradesh* (Andhra Pradesh Agricultural University, Hyderabad, 1980), p.1.
2. Vogel and M. Graham, eds., *Sorghum and Millet: Food Production and Use* (International Development Research Centre, Ottawa, 1968).
3. A. M. Amerine, R. Pangborn, and E. B. Roessler, *Principles of Sensory Evaluation of Food* (Academic Press, New York, 1965).
4. Association of Official Analytical Chemists (AOAC) *Official Methods of Analysis* (AOAC, Washington, D.C., 1975).
5. K. Lorenz, "Protein Fortification of Cookies," *Cereal Foods World*, 28: 449 (1983).