

Nutritional and Antioxidant Status of Rabri Incorporated with Raw, Roasted and Germinated Finger Millet Powder (*Eleusine Coracana L.*)

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Introduction

Rabri is an indigenous milk based product. It is a concentrated and sweetened whole milk product containing several layers of clotted cream milk being heated in wide pan. Antioxidants are defined as a molecule capable of slowing or preventing the oxidation of other molecules. Finger millet, also called ragi (*Eleusinecoracan L*) is rich in calcium, iron, protein, fiber and other minerals. The millet has low fat content. It is easy to digest and does not contain gluten; people who are sensitive to gluten can easily consume finger millet.

Objective

The present study aimed at preparing rabri incorporated with raw, roasted and germinated finger millet powder, studying its various sensory attributes and evaluating the chemical composition as well as total antioxidant activity.

Methodology

All raw materials (milk, sugar, finger millet) required for the preparation of rabri were procured from the local market. Control rabri was prepared by method described by Mathur (1991). Three experimental rabri were prepared by incorporating raw finger millet powder, roasted finger millet powder as well as germinated finger millet powder in known concentration to the control rabri. Control as well as experimental rabri samples were evaluated for various sensory attributes (Srilaksmi, 2007) like color, flavor, texture & overall acceptability. Control as well as experimental rabri samples were also subjected to chemical analysis viz., protein (AOAC, 1976), reducing sugar, lactose (BIS, 1964), fat (Puntambekar, 1968), calcium (Clark and Collips, 1925), total solids (BIS, 1981), ferric reducing antioxidant power assay (Benzie and Strain, 1996) and ability to scavenge 1, 1, diphenyl-2, picrylhydrazyl radicals (DPPH) described by Brand-Williams *et al.* (1995).

Result and Discussion

The raw finger millet incorporated rabri was the most acceptable product as its appearance, consistency, flavor and overall acceptability ranked the highest. The protein content of control finger millet rabri (8.74g %) was significantly higher ($p \leq 0.05$) than roasted and germinated finger millet incorporated rabri. The lactose percentage was found to be maximum in germinated finger millet rabri (10.99g %) followed by roasted, raw and control rabri. The fat content was found to be highest in control rabri. It could be due to initial fat content of raw milk and degree of concentration, from which it was made, as raw milk quality could affect the quality of final product. The calcium content of germinated finger millet rabri was found to be significantly higher ($p \leq 0.05$) compared to all other samples. An increase in the calcium content may be attributed to the bio-synthesis of micro-organisms during sprouting. The total solids were found to be maximum in control finger millet rabri. The total antioxidant capacity of rabri by FRAP assay was found to be maximum in raw finger millet incorporated rabri (103.81 mg TE/100g). This may be due to phenolics of raw finger millets that have contributed to the total antioxidant capacity. The DPPH radical scavenging activity was highest in control rabri (1955.90mg TE/100gm) followed by raw, germinated and roasted samples.



National Seminar on "Indian Dairy Industry - Opportunities and Challenges"



Conclusion

Thus, the formulated finger millet rabri is an excellent source of calcium and antioxidants, which may contribute towards positive health outcomes in case of cardiovascular disease, cancer, diabetes and age related degeneration.

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