DEVELOPMENT AND STORAGE STUDY OF BEETROOT ENRICHED KODO MILLET PASTA

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Abstract:

Kodo millet is a tropical small millet crop, indigenous to India and grown for grain fodder purpose. The grain is composed of 70.50g of carbohydrates, 8.12 g of protein, 2.27 g of fat, 1.25 g of minerals, 7.53 g of crude fibre and 335 k.cal of energy per 100g which is comparable to other millets. Realizing the awareness of the consumers towards the nutritional and health constituents present in millet processed products, it is important to develop the product which could satisfy the nutritional need as well as the health promoting properties in the processed products. Pasta is extruded and ready to cook novel food product. It is very convenient snack for working women and bachelors.

In this study the kodo millet *[Paspalum scrobiculatum (L.)]* which was dehusked, without any polish was procured from 'Green Organics' and other ingredients were procured from the Dharwad local market. Beetroot enriched kodo millet pasta was standardized with varying proportions of kodo millet flour, wheat flour, fine semolina, beetroot pulp/powder and guar gum. The pasta with beetroot pulp (coarse paste) had higher Acceptability Index (82.59) compared to beet root powder (72.96.) Further pasta with beetroot pulp was analysed for nutrients and stored in air tight food grade aluminum foil pouches at ambient temperature, drawn every 15^{th} day and evaluated for moisture content, free fatty acid content and subjected to sensory evaluation. The nutrients were analysed at accredited laboratory of ANGRAU, Hyderabad. The results revealed that 100 g sample of beetroot enriched kodo millet pasta contains 10.50 % moisture, 9.88 % protein, 1.80 % fat, 1.62 % crude fiber, 1.28 % ash, 76.54 % Carbohydrates, 1.25 mg of iron, 2.28 mg of Zinc and 40.57 mg of calcium. The moisture content of beetroot enriched kodo millet pasta was 7.31 per cent at initial day and it was increased significantly (12.98 %) on 150^{th} day of storage. Similarly, with the increase in the storage period there was significant increase ($p<0.05$) in free fatty acid content from 0.11 to 0.30 mg KOH/g and it was in safe limits. During storage, the scores of appearance, colour, flavor, taste, texture and overall acceptability on initial day were 7.50, 8.00, 7.10, 7.20, 7.40 and 7.40 respectively. It was decreased during storage. Sensory scores on 150^{th} day was 7.50 (Appearance), 7.30 (colour), 6.70 (Flavor), 6.60 (Taste), 6.50 (texture) and 6.65 (overall acceptability). However, scores were more than 6.5 scores and were acceptable. Hence the beetroot enriched pasta can be successfully stored upto 150 days in acceptable way.

Key word: Kodo millet, Beet root enriched pasta, Extrusion, Storage

Biography:

Dr. Sarojani J. Karakannavar, presently Dean (Student Welfare) and earlier worked as Professor and Head (Food Science and Nutrition), University of Agriculture Sciences, Dharwad, Karnataka, India – 580005. Totally has 32 years of rich Experience in Teaching, Research and Extension, and guided six Ph.D and seven MSc students. Handled two externally funded Research projects as a Principal Investigator and five Research projects as Co - Principal Investigator. I have got 8 International Level Award, 13 National Level Award, 1 State Level Award and 8 University Level Award.

Under the project from the lesser exploited millets, sanctioned by ICAR-NAE, New Delhi as Principal Investigator the project entitled "Nutrient Composition, Value Addition and Commercialization of Lesser Exploited Millets" viz., Browntop millet, Proso millet, Kodo millet and Barnyard millet were carried out. In the project eight novel products have been developed, viz., Ready to cook kodo millet pasta, Beetroot enriched kodo millet pasta, Barnyard millet instant dosa and idli mix, Browntop millet laddu, Proso millet chakli, Custard Powder Mix and Proso millet dosa mix. As University Head streamlined the process of commercialization of millet products. The nine technology products have been purchased by Sri Kshetra Dharmasthala development project (SKDRDP) and started production.

National and international awareness has been created on millet research through paper presentations and conferences at Finland Tampere University and Malaysia. At Teheran presented paper on 'Role of women in Agriculture in INDIA'.