

## Nutritional analysis of semi processed and processed foods of sorghum

C.V. Ratnavathi, Ranga B, Mahender A and J. V. Patila

Directorate of Sorghum Research, Rajendranagar, India

Sorghum grain is nutritious with rich fibre, vitamins and minerals. Sorghum grain is also considered good for health due to its slow digestibility of starch and protein. Sorghum grain is often consumed as roti (bhakri) which is an unleavened pan cake. It is also consumed in the form of Annam or sankati in southern parts of India. Very little is known about other foods that are made from sorghum and sorghum grain does not have any difficulty to make the delicious foods that are usually made from wheat and rice. In this study 15 sorghum foods, ideal for consumption were prepared, recipes were described and evaluated for nutrients such as carbohydrates, fat, protein, vitamins and minerals. The foods include, breakfast items (upma, dosa and idly), roti, snack foods, (chekkalu, Muruku), sweets, (kesari, laddu and cake and biscuits).

Roti and breakfast foods had low fat content (range: 0.30-3.4g) compared to sweet recipes and snack foods. The carbohydrate content is much higher in roti followed by that of idli, dosa and upma. Highest protein content was observed in idly and upma followed by dosa. The vitamin content especially thiamine is high in fermented foods (dosa (8 fold) and idli (14 fold) may be due to the presence of black gram and due to fermentation process. The other vitamins, riboflavin, niacin are higher in roti whereas pyridoxine and folic acid are higher in upma, dosa and idly compared to roti. Minerals (calcium and Iron) were observed high in roti and in breakfast foods it is low. Sweet recipes and baked foods contained similar levels of nutrients except for minor difference in fat content. Rawa laddu and cake were similar for fat content (30.47% and 30.10%). Rawa kesari had low fat content with higher protein, thiamine contents. However rawa kesari does not have riboflavin, niacin and folic acid. Calcium and magnesium are also higher in rawa kesari compared to other sweets.

The fat content in these seven snack foods is highest compared to sweet and breakfast foods with the basic fact that these items are fried in oil. Among the snack foods punugulu had low fat (8.23%) and high carbohydrates (75.66 %). The carbohydrate content did not vary with other two types of foods. However protein content in pakoda was 10.5 %, is due to the blending of chick pea flour. The mineral and vitamin content was lower than the other foods. Vitamin, thiamine is high in chegoddi followed by pakoda. Pyridoxine is high in chegoddi followed by chekkalu.

ratnavathi@sorghum.res.in