

## Role of Millets in Ensuring Food and Nutritional Security

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ARTICLE ID: 72

### Introduction:

Millets are the small seeded grains of family Poaceae. Pearl millet (bajra), foxtail millet (kangni), sorghum (jowar), finger millet (ragi), etc come under the category of main millets. Millets constitute the staple food in many parts of Asia and Africa since ancient time. Millets are also rich in phytochemicals and possess several health benefits such as lowering blood glucose level, reduces chances of tumor development, lowers the cholesterol and reduces cardiovascular diseases. Strong antioxidant properties of millets help in the prevention of cancer. Dietary fiber in the millets delays the gastric emptying and controls the rate of fat absorption.

Millets are rich source of vitamins, amino acids, phytochemicals and minerals abode several health benefits like prevention of diabetes, cardiovascular diseases and cancer. The beneficial effects of millets in diabetics are attributed to the presence of phenols and dietary fibre. Phenols partially inhibit the amylase and  $\alpha$ -glucosidase activity and controls blood glucose levels in the blood. The polyphenols are also reported to have platelet aggregation inhibitory activity. The dietary fibre is an important phytochemical component of millets. The millets contain as high as 13- 38% of total dietary fibre that could be considered in the management of disorders like diabetes mellitus, obesity, hyperlipidemia, etc. The glycaemic load lowering effects of barnyard millet is highest among all the millets. Foxtail millet exhibits anti hyperglycemic and anti lepidemic activities.

### Different types of millets and their medicinal value

- ✚ **Millet / Pearl millet (*Pennisetum glaucum*):** Millet contains a lot of soluble fiber. It detoxifies your body. It is very good for reducing constipation, colon cancer, skin and arthritis problems. You can eat millet in the form of dal or khichdi. Many people make chapatis made of millet flour. Nowadays millet laddoos and cookies are also available in the market.

- ✚ **Bristle grass / Foxtail millet (*Setaria italica*):** Foxtail millet is native to China. It is considered the first domesticated millet and its cultivation was started about 7000 years ago. Other names like foxtail bristle grass, Italian foxtail, Italian millet, German millet and Siberian millet are also prevalent for this millet. It likes cold draughty regions. Foxtail millet contains 75.2g/100g of carbohydrates, 10-12% proteins and 2.38-5 % fat. It produces 351 kcal of energy. However, a low carbohydrate content of (60.9 g/100g). It is also a rich source of fibre and minerals. The fibre content is 8g/100g and 3.3g/100g of minerals. It is an excellent source of zinc (40.4 ppm) and iron (27.19 ppm) among millets
- ✚ **Ragi/ Finger millet (*Eleusine corcana*):** Ragi has more calcium content it grows easily in dry areas. Ragi has been considered very well for people suffering from diabetes, also it has good fiber content. That's why it also eliminates constipation, cholesterol and intestinal cancer. You can make laddoos or porridge from ragi.
- ✚ **Kutki / Proso Millet (*Panicum scrobiculatum*):** Kutki is the smallest millet in the millets family and grown across India. It is very easy to cook and is often used in the form of rice. But it is more beneficial and nutritious than normal rice. That's why it can be used in any recipe made from rice. It is good for people suffering from anemia.
- ✚ **Samak Rice / Barnyard millet (*Echinochloa crusgalli*):** Samak or Samak rice is rich in many nutrients. It is considered very beneficial for the body. It contains fewer carbs and is a good source of B-complex vitamins. Sama's rice is very easy to digest and it is low in calories. It is effective in reducing diabetes and heart disease. You can make it in the form of upma or kheer.
- ✚ **Rajgira / Red Amaranth (*Amaranthus blitum*):** Rajgira is known by names like Chaulai and Ramdana. It is rich in protein and has abundance of nutrients like calcium, iron, magnesium, phosphorus and potassium. Also, it is the only grain that contains Vitamin C. It also contains lysine, an amino acid, which helps in absorbing calcium. Since it contains 2 times more calcium than milk, it can reduce the risk of osteoporosis. It is also very beneficial in weight loss.

**Conclusion:**

The increased per hectare production of cereal grains has resulted in the loss of nutritional value of food grains. This is the time when we should reduce burden on our fertile



soils and should try to make our dry lands productive. Millets can play a major role in the food as well as nutritional security. In addition to this we need to develop novel methods for the food utilization of the millets.

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