



Review Article

A Review on Millets and their types

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ABSTRACT

Millets are high nutritional grains that are found in varied types and classification. But over the years the demand and consumption of millets has gradually decreased. They belong to family of grasses and are helpful in treating and curing various diseases. They are also friendly in keeping body healthy and maintaining proper functioning of organs. The main aim of this review is to highlight nutritional profile of millets, their types and a brief explanation on effect on organs.

INTRODUCTION

The term 'millet' which signifies a small seeded plant that is used as food with high nutritional value. The word 'millet' comes from a French word – "mille". In Sanskrit, 'Trinadhanya' (trin and dhanya) which means wild grains or grains without cultivation. However, in Ayurveda, synonyms like 'Kudhanya' (means – inferior among cereals) is also given. Term millet not only exemplifies as a crop with high anti-oxidant activity, decreasing risk of many diseases, gluten free, rich sources of dietary fibre and macronutrients; but also, a crop that can grow in low levels of water, grow in less sunlight, grow in low potent soil, no specific need of artificial things to grow. Origin of millets dates back to highlands

of East Africa before the third Millennium BCE. However, in India, earliest evidence was found to be in Indus civilisation (3000 BC).

Species of Millet

Millets are grown in about 131 countries and they are traditional food for 59 crore people in Asia and Africa. Millets come under family – Poaceae (grasses). There are several species of Millet which are not inter connected but belong to different sub families. Commonly grown are :

- Eragrostideae – Subfamily (Chloridoideae) Eleusine coracana (Finger Millet)
- Genus Panicum
- Panicum miliaceum : Proso Millet ('baragu' in Kannada, panivaragu in Tamil)

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- Genus Digitaria (Minor important crop)
- Digitaria compacta – Raisham (cultivated in khasi hills of North-East India)

Millets are the types of cereals and the important millets grown in India are ;

- Jowar (Sorghum)
- Bajra (Pearl Millet)
- Kangni (Foxtail Millet)
- Ragi (Finger Millet)
- Chinka (Proso Millet)
- Sanwa (Barnyard Millet)
- Rice grass (Kodo Millet)

Jowar (Sorghum)

Sorghum vulgare is the Scientific name of this kind. It is a type of grass, that was first domesticated in Egypt and with high protein. It's height can be upto 8 feet tall and it is gluten free. It can grow in arid soils and withstand droughts. It ranks fifth among important cereal crops of world.

Bajra (Pearl Millet)

Scientific name for Bajra is Pennisetum typhoides. This grain is gluten free and best grain that will help to lose weight. It has essential vitamins; Vitamin B6. It is good about heart and it is low in calories. It has nutrients such as iron, magnesium, phosphorus, etc.

Kangni (Foxtail Millet)

Scientific name of foxtail millet is Setaria italica. It is very useful for neurological diseases as it is rich in vitamin B1. It is rich in protein and gluten free also. It is low in fat and High in dietary fibre. It is widely planted species of millet. When foxtail millet is cooked, it tastes similar to cooked rice. It is originated in China.

Ragi (Finger Millet)

Scientific name of ragi is Eleusine Coracana (finger Millet). It has essential Vitamin B complex and nutrients iron, phosphorus, magnesium, calcium, etc. It has High fibre content and best for people having diabetes. They are good for babies

and good to digest. It fortifies bone density.

Chinka (Proso Millet)

Thousands of years before Proso millet has been introduced as a Domestic crop. This millet is not under wide consumption but this millet is rich in magnesium. The health benefits of Chinka are ; it helps in reducing blood pressure and heart attack. It also helps in reducing Risk of stroke.

Sanwa (Barnyard Millet)

Sanwa or Barnyard millet is also known as a friendly grain for diabetes. It is composed of many nutrients and minerals such as, iron, magnesium, vitamin B and more. The health benefits of barnyard millet are ;it is gluten free and as well as low in carbohydrates thus making it boon for gluten allergies.

Rice grass (Kodo Millet)

Kodo millet health benefits are endless. Even the regular consumption of it makes our vital body organs healthy. It also helps to reduce anxiety and makes a person happy. It has high levels of iron , thus suitable for anaemia. It also finds impact on kidney as blood purifier.

Major producers of Millet

India	38%
Niger	12%
Sudan	9%
Nigeria	7%
Mali	6%
China	5%
Burkina faso	4%
Ethiopia	3%
Chad	2%
Senegal	2%
Others	12%

Nutritional content of Millet

Millet	Protein (g/100g)	Carbohydrates (g/100g)	Total Energy (Kcal)
Pearl Millet	11.4-11.8	67.0-69.10	361-363
Foxtail Millet	11.2-15	60.9-67.3	352-391

Finger Millet	7.3-7.7	71.52-72	328-336
Proso Millet	10.0-13.0	67.09	352.5
Sorghum Barnyard millet	10.4-10.82 6.2-10.0	70.7-72.9 55-65.5	329-341 300-307
Kodo millet	8.3-10.0	63.82-66.6	349.5-353

Effects of Millet on different organs :

• Brain

Millet has a vital role in brain functioning. As especially Nartaki (in ayurveda) or Finger Millet is good for the development of brain. A recent study also showed that taking iron – bio fortified Pearl Millet improves brain functioning and cognitive behaviours like memory and attention. This study was conducted in India.

• Liver

Millet shows their action and helps in curing diseases. It helps in reducing cholesterol. It also helps in liver diseases. Kangu (in Ayurveda) helps in alleviating non-alcoholic fatty liver diseases in High fat diet. As millets are fibre rich, they help in digestion and reducing fat in liver.

• Heart

Millet is found to be useful in reducing risk of developing cardiovascular diseases. As, the nutritional content of Millet is rich in proteins, minerals – calcium, iron, Potassium, magnesium, zinc and vitamins.

Food Safety and Standards Authority of India (FSSAI) listed foxtail millets as they are good for cardiac health.

• Kidney

Millet is high in anti-oxidants; they are good and beneficial for people with kidney diseases. However, excessive intake of ragi is not recommended for people with kidney stones. They are low in sodium, so they can reduce renal stress and maintain appropriate blood pressure.

Government initiatives (in India)

Government of India has taken several steps towards the closure of this forgotten grain. It has formulated and implemented several laws regarding millets. It has also proposed, 'International Year of Millets – 2023' that is declared by UNGA.

Some other govt. initiatives are mentioned ;

- Millet Start-up innovation challenge
- India's wealth, Millets for health
- Agriculture ministry declared millets as 'Nutri cereals' in 2018

CONCLUSION

This coarse, superfood grain is among the first crops to be domesticated. It is mainly a kharif crop in India and requires ; rainfall around 50-100 cm, soil type – inferior alluvial or loamy soil and primarily grows on marginal land; sub-tropics or tropics. They are considered to balance bio energy in human body. They are found to be helpful in treating majority of diseases, thereby its consumption in daily life adds more importance for maintaining healthy, disease-free lifestyle.

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