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IMPORTANCE OF MILLETS W.S.R. TO MEDICINAL AND NUTRITIONAL VALUE: A REVIEW

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Abstract

Millets are grains used traditionally for its nutritional and medicinal values. Millets are mainly grown in the Asian region and consumed as food source. Millets are small sized grained; grow in warm weather and belonging to the grass family. Millets are hardy grains and tolerant to diversified weather conditions. They provide nutrients required for physiological functioning of human body. Millets are two types Major Millets and Minor Millets; this classification is based on the size of grain. Millets contains protein, fat, carbohydrates and fibre, etc. Millets are nutritious than other fine cereals. Millets also served as sources of phosphorous and iron. Millets possess medicinal values due to the presence of tannins, polyphenols, phytosterols and anthocyanins, etc. Millets are used for treating of preventing metabolic diseases and also offers antioxidant activity. Considering importance of Millets present article summarizes medicinal and nutritional significance of Millets.

Key-Words: *Ayurveda, Millets, Grain, Fiber, Nutrition*

Introduction

Millets are non-allergenic grains which are gluten free and used as rich source of nutrition. Medicinally Millet helps to decreases triglycerides and inflammation, thus preventing cardiovascular disease. Millets served as source of dietary fibre, reduces chances of inflammatory bowel disease and also helps to detoxify body.

Major and Minor millets:

Major Millets:

Farmers cultivate these in vast quantities and can find them everywhere. They are simple to grow and require just the right amount of irrigation. Fox tail millet and pearl millet are two examples.

Minor millets: These are yet another species of nutrient-rich seed-bearing plants that are mostly farmed for use as fodder. As they contain a lot of nutrition, they need the right water and harvesting equipment to survive, examples includes; little millet and barnyard millet.

Ayurveda described foxtail millet as sweet with astringent taste, termed as *Trundhanya* or *Kudhnya* or *Kshudradhanya*. As per Ayurveda it increases *Vatadosha* and pacifies *Pitta* and *Kapha Dosha*. These millets are in Ayurveda. In *Nighantu Aadarsha* it termed as *Munidhanya* as *Rishimunis* used to consume it due to its nutritional food value and digestibility. As per Ayurveda millets possess specific properties as depicted in Figure 1.

<i>Rasa:</i>	<i>Kashaya</i>
<i>Vipaka:</i>	<i>Madhur & Katu</i>
<i>Virya:</i>	<i>Ushna</i>
<i>Guna:</i>	<i>Laghu & Ruksha</i>

Figure 1: Ayurveda properties of millets

Millets comprising of *Jowar*, *Bajra*, *Ragi/Mandua*, *Kanngani/kakun*, *Cheena*, *Kodo*, *Sawa*, *Kutki*, *Kuttu* and *Chaulai*, etc. Millets belongs from one of the several species of coarse cereal grasses (family *poaceae*), the small seeds are edible for which Millets are cultivated. The advantages of Millets as grain over other crops are as follows:

- ❖ Millets are highly nutritious and possess medicinal value.
- ❖ Millets are non-glutinous; Millets can be used by the person who suffers with gluten allergy.
- ❖ Millets are non acid forming foods.
- ❖ Millets possess high fibre content.
- ❖ Millets act as a probiotic for microbial flora of our body, thus improves digestion.
- ❖ Millets maintain or retain water in colon thus prevent from constipation.

Millets are considered as dietary fibre, used as source of protein and phytochemicals. The nutritional compositions of millets are described as follows:

- ✓ Protein: 5-10%
- ✓ Fat: 3-5%
- ✓ Carbohydrates: 68-75%
- ✓ Dietary fibre: 15-20%

It also contains essential amino acid, cross-linked prolamins, which contributed towards the digestibility of the millets. Millet is poor sources of lysine and proteins which contributed towards the high biological value of Millets. Polyphenols, tannins, phytosterols and anthocyanins, etc. play important role in metabolic diseases. Millets offer anti-ageing and antioxidant activities. Millet contains potassium which supports kidney and heart function and also helps in the nerve signal transmission. Millet contains Vitamin A, Vitamin B, Phosphorus, Potassium, Niacin, Calcium and Iron, etc.

Sorghum (Jowar):

It served as rich source of protein, thiamine, riboflavin, fibre, carotene and folic acid, etc. It also contains phosphorus and potassium, along with sufficient amounts of iron, sodium and zinc.

Pearl Millet (Bajra):

It contains dietary fiber; thus prevent inflammatory bowel disease, contains proteins and lipids. The niacin is found more than other cereals. *Bajra* also contains iron, copper, magnesium and zinc. It served as rich source of unsaturated fats.

Finger Millet (Ragi):

The highest source of calcium is found in finger millet, highest mineral content is seen in *Ragi*, and however it has lower amounts of fat and protein. Finger millet grains have good malting capabilities and are well-known for their use as weaning foods. The proteins are distinctive in finger millet due to the sulphur rich amino acid levels. Its antioxidant activity is very high.

Foxtail millet (Kakum):

It contains twice as much protein as rice. It offers a variety of nutrients, a pleasant nutty flavour, and is one of the most easily digested and non-allergic grains. It contains minerals like copper and iron.

Kodo millets (Kodon):

It has a very high fibre content, low fat and high protein content. The vitamins B found in *Kodo* millet, including niacin, folic acid and pyridoxin, as well as iron, calcium, potassium, zinc and magnesium, etc. These all constituents make it a food for boosting the neurological system.

Barnyard millet (Sanwa):

The most abundant source of crude fibre and iron is barnyard millet; its grains also include beta-glucan and gamma amino butyric acid, which are antioxidants and helps to lower blood lipid levels.

Kutki/Shavan:

Kutki/Shavan is a type of tiny millet; it has a lower grain size than other millets, higher iron content and significant antioxidant activity. It also contains remarkable amount of dietary fibre.

Chenna/Barri:

The most protein is found in proso millet, it contains fatty acids and carbohydrates. It also contains large amounts of calcium, which support bone formation. It served as source of manganese than other traditional sources like spices and nuts. It lowers cholesterol levels and risk of heart disease.

Amaranth pseudo-millet (Ramdana/Rajgira):

It consists oil, which is more than most other cereals; high protein content, amino acid that is absent in many other grains. Amaranth oil is high in dietary fibre, magnesium, phosphorus, iron, potassium and calcium. It also contains a peptide and that offers cancer-preventive and antihypertensive properties. Amaranth oil contains unsaturated fatty acids and linoleic acid.

Buckwheat (Kuttu):

It is high in the amino acid lysine and contains of protein along with starch. It acts as rich source of vitamins B1, C and E. It contains higher quantities of zinc, manganese and copper, etc. The bioavailability of these minerals is also relatively high and it contains polyunsaturated essential fatty acids.

Medicinal Value of Millets:

- ✚ Millets support growth of bones and muscles.
- ✚ Millets provide strength to nervous system.
- ✚ Prevent bio-molecules from oxidative damage.
- ✚ Prevent chances of cardiac problems.
- ✚ Regulated metabolic activities thus control diseases like diabetes.
- ✚ Control level of cholesterol and reduces cases of fatty liver.
- ✚ Promotes digestion thus resist complication of constipation and other digestive problems.
- ✚ Boost immunity and nourishes body due to its nutrients value.

It is useful for conditions like *Nadivrana*, *Raktapitta* and *Asthibhagna*, etc.

Conclusion

Millets is gluten free and nourishing fibre. They are rich in micronutrients like; iron, phosphorus and calcium, etc. Millets as dietary fibre induce bulk in body and absorb water. It lowers the risk of bowel disease and helps to clean body. Millets prevent type-2 diabetes, lowers blood pressure, acts as anti-acidic agent and reduce risk of colon cancer. Millets comprising of *Jowar*, *Bajra*, *Ragi/Mandua*, *Kanngani/kakun*, *Cheena*, *Kodo*, *Sawa*, *Kutki*, *Kuttu* and *Chaulai*, etc. They provide protein, fat, carbohydrates and fibre, etc. Millets offers medicinal properties due to the presence of polyphenols, phytosterols, anthocyanins and tannins, etc. Millets boost growth of bones due to the presence of calcium. Millets offers anti-oxidant potential thus prevents oxidative damage. Millets prevents metabolic diseases like diabetes and obesity. Millets is helpful for digestive problems and nourishes body.

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