



## MILLETS AN AYURVEDIC APPROACH

Navarange S<sup>1</sup> Wasnik V<sup>2</sup> Jain S<sup>3</sup>

Author<sup>1</sup>, Guide<sup>2</sup>, HOD<sup>3</sup>

PG Scholar 3<sup>rd</sup> year, Associate Professor, HOD and Associate Professor of SWASTHAVRITTA and Yoga Department, Government Ayurveda College, Nagpur, Maharashtra

Corresponding Author: [snavarange28@gmail.com](mailto:snavarange28@gmail.com)

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## ABSTRACT

Shukadhanya is a group of small, seeded cereals used as human food for ages. They are popular by the name millets. A balanced diet is the key to following the first principle of Ayurveda in order to maintain a healthy life. Acharya Charak has classified ahara (diet) into twelve categories. Acharya has mentioned Shukadhanya with their gunas (Qualities) which play an important role in the prevention of disease. This article is an attempt to analyze the Shukadhanya Varga mentioned in Ayurveda and their health benefits and a scientific basis.

**Keywords:** Millets, Ayurveda

## INTRODUCTION

As recent years have paved the way for many new diseases, mankind has started moving towards being fit and healthy. Among various measures adopted for this purpose, dietary changes play a vital role. These altered dietary practices have incorporated the use of millet into our diet by highlighting its nutritional richness and health benefits.<sup>[1]</sup> Ayurveda,

giving immense importance to the diet of both healthy and diseased, has explained these millets in detail under Dhanya Varga (category of cereals).<sup>[2]</sup> In ancient literature, Ayurveda, Acharya Charaka classified Ahara(diet) into twelve categories. Among these, Shukadhanya is the first one.<sup>[3]</sup> As the name suggests, corns with spikes are known as

Shukadhanya.<sup>[4]</sup> The name is derived from the words Shukadhanya (Suka means bristle and Dhanya means consisting of grain). Acharya Sushruta has not mentioned Shukadhanya varga by name. In Sushruta Samhita dravyas of Shukadhanya vargahas been described in Mudgadi, Shaliand Kudhanya Varga.<sup>[5]</sup> In modern literature, Shukadhanyahas have been classified as monocotyledons and energy-giving food. Energy-giving food mainly includes cereal groups like wheat, rice, maize (corn), oats, Jowar, Ragi, and Bajra. Ancient Acharya Shas mentioned some Shukadhanya Dravyas with their Gunas(qualities) like Shashthika, Vrihi (variety of rice), Yava, and wheat, which play important roles in the prevention of diseases.

**Aim and Objectives:** To access the health benefits of millet according to ayurveda.

**Common properties of Millets according to Ayurveda**

These are Dravyasare Sheeta(cold in potency), Swadu (sweet in taste), and Swadu Vipaka(Sweet after digestion). They are said to be Vatavardhak, Alpa varchasa, Brimhana, Shukrala, and Mutual.<sup>[6]</sup> The use of millet in the Indian diet can be traced back to a very ancient era.<sup>[7]</sup> Apart from high nutrition, there are many other reasons for cultivating millet for ages.

1. Gluten-free:<sup>[8]</sup> Gluten intolerance is one of the major Gastro-intestinal issues seen nowadays. Millets being gluten-free becomes a choice for those.

2. Drought resistant:<sup>[9]</sup> Millets require very less amount of water compared to other cereals for their cultivation, thus they were mainly grown in water-

scarce areas, and they could even sustain during droughts.

3. Resistant to pests and diseases:<sup>[10]</sup> Millets show a great resistance to pests and diseases which minimizes the burden of farmers along with added benefit to health.

4. Short growing season:<sup>[11]</sup> Maturity of millets occurs within 60-100 days.

5. Remarkable nutritive values:<sup>[12]</sup> They are highly rich in phytochemicals, and micronutrients.

6. Alkaline forming grain:<sup>[13]</sup> Helps to maintain the PH balance in the body.

**Types of millets**<sup>[14]</sup>

**Major millets**

- a) Pearl millet
- b) Finger millet

**Minor millets**

- a) Foxtail millet
- b) Proso millet
- c) little millet
- d) Kodo millet
- e) Barnyard millet

**The list of millets according to Ayurveda are:**<sup>[15]</sup>

- Kangu (Priyangu) - Foxtail millet
- Shyamaka - Barnyard millet
- Koradusha (Kodrava) - Kodo millet
- Cheenaka - Proso millet
- Nartaki - Finger millet
- Gavedhuka - Adlay millet
- Yavanaala - Sorghum

The general Guna and Karma (qualities and effects) of millets are,<sup>[16][17]</sup>

<b>Rasa</b>	Kashaya-Madhura
<b>Veerya</b>	Sheeta
<b>Vipaka</b>	Katu
<b>Guna</b>	Laghu Ruksha
<b>Karma</b>	Lekhana, Vrishya, Kledashoshana, Baddhamalakara
<b>Effect on Tridosha and Dhatu</b>	Kapha-Pittahara, Vatala, Rakta Shaamaka

**Yava(Barley / Hordeum Vulgare)**

Charak has mentioned Yava in Shukadhanya Varga while Sushruta in Mudgadi Varga. Charak has

mentioned Yava in Shramahara, Chardinigrahana, and Swedopaga Mahakashaya. In Ayurveda, pharmaco-dynamics of Yava (Barley) have been explained to be as Ruksha(dry), Sheetavirya(cold in

potency), Laghu (light in digestion), Madhura(sweet) and Kashaya(Astringent) in taste, aggravates Vata and increases the number of faeces. Also, it increases body strength and pacifies Kaphaj's disorders.<sup>[18]</sup> It is known to be Stanyavardhaka<sup>[19]</sup>; Medohara(helps in reducing fat) when used with Amalaki Churna<sup>[20]</sup>. Yava (Barley) is a carbohydrate-rich food. According to the National Health and Nutrition Examination Survey, Barley contains potassium, calcium, and

magnesium which are helpful to decrease blood pressure naturally. Also, Barley helps in lowering the cholesterol in the blood as it is an excellent source of fiber and hence decreases the risk of cardiac diseases. In the condition of Vrana and Visarpa, Yava (Barley) can be used with Madhuka Churna in the application form.<sup>[21]</sup> Inhaled Dhuma of Yava churna with Ghrita is said to be beneficial in Shwasa Roga(Asthma).<sup>[22]</sup>



<b>Yava</b>	
Varga	Charak - shukadhanya Sushruta - Mudgadi
Mahakashāya	Charak – Shramahara, Chardinigrahana, Swedopaga
Rasapanchaka	Rasa - Kashaya-Madhura Veerya - Sheeta Guna – Ruksha, Laghu Dosha – Vatakara , Kaphaghna
Specific Indications	Stanyavardhaka, Medohara, Decreases blood pressure and in shwasa roga (Asthma) with anupana Ghrita

**Jowar (Great Millet / Sorghum Vulgare)**

Jowar is Madhura and Kashaya in Rasa, Laghu (easily digestible), Sheeta Virya(cold in potency), and pacifies Vata and Kapha Dosha. Jowar contains essential nutrients like iron, Ca, potassium, and phosphorus. It contains a good amount of Thiamine and Riboflavin. Phytochemicals are also present in high amounts in Millet, and they have shown potential use fullness in reducing obesity. Jowar is also said to be heart-healthy.<sup>[23]</sup> A major portion of

sorghum protein is prolamin (kaffirin) which has the unique feature of lowering digestibility upon cooking which might be a health benefit for certain dietary groups. Sorghum proteins upon cooking are significantly less digestible than other cereal proteins, which might be a health benefit for certain dietary groups. It is rich in protein, fiber, thiamine, riboflavin, folic acid, and carotene. It is rich in potassium, phosphorus, and calcium with sufficient amounts of iron, zinc, and sodium.<sup>[24]</sup>



<b>Jowar</b>	
Rasapanchaka	Rasa - Madhura-Kashyaya Veerya - Sheeta Guna - Laghu Dosha – Vataghna, Kaphaghna
Specific Indications	Reduces Obesity, In Heart Disease Trishghna (pacifies excessive thirst), Kledaghna (pacifies excessive moisture content)

**Bajra (Pearl Millet / Pennisetum glaucum)**

Bajra is Madhura in Rasa, Ruksha, and Ushna Virya and pacifies Vata and Kapha Dosha<sup>[25]</sup>. It has a relatively low glycemic index and has been shown to produce lower blood glucose levels than wheat and rice. Magnesium in millet helps in reducing the effect of heart attacks. Bajra also contains Niacin which helps in lowering cholesterol levels. Its consumption decreases triglycerides and C-reactive protein. The pearl millet bran is low in mineral matter. The germ fraction in Pearl Millet is about 16%. It is also rich in oil, protein, and ash.<sup>[26]</sup> The fat content present in the Pearl Millet is higher than the other millets due to its larger germ size and its high

oil content. The Pearl millet is predominantly starchy as it contains 73gm of carbohydrates per 100gm of Bajra(Pearl millet). It is an important source of B-complex vitamins, mainly present in the outer bran layers of the grain. Pearl millet contains a considerably high proportion of proteins (12-16%) as well as lipids (4-6%). It contains 11.5% of dietary fiber. It increases the transit time of food in the gut. Hence, reduces the risk of inflammatory bowel disease. The niacin content in pearl millet is higher than all other cereals. It also contains folicate, magnesium, iron, copper, zinc, and vitamins E and B- complex. It has high energy content compared to other millets. It is also rich in calcium and unsaturated fats, which are good for health.<sup>[27]</sup>



<b>Bajra</b>	
Rasapanchaka	Rasa - Madhura Veerya - Ushna Guna - Ruksha Dosha - Vataghna Kaphaghna
Specific Indications	In Heart Disease Lower blood glucose level

**Nartaki (Eleusine coracana - Finger millet)**

Tikta-Madhura -Kahaya Rasa (bitter-sweet-astringent in taste), Sheeta (cold in potency-anabolic), Snigdha (unctuousness), Balya (promotes strength) Vrishya (aphrodisiac)<sup>[28]</sup>

Finger millet is the richest source of calcium (300-350 mg/100g) Ragi has the highest mineral content. It

contains lower levels of protein (6-8%) and fat (1.5-2%) Finger millet proteins are unique because of the sulphur-rich amino acid contents. The grains have excellent malting properties and are widely known for their use as weaning foods. It has high antioxidant activity.



<b>Narataki</b>	
Rasapanchaka	Rasa - Tikta-Madhura-Kashyaya Veerya - Sheeta Guna - Snighda Balya Vrishya
Specific Indications	The richest source of calcium High antioxidant activity

**Amaranth (Rajgira)**

High protein content (13-14%) and a carrier of lysine, an amino acid that's missing or negligible in many other grains. Consists of 6 to 9% oil which is higher than most other cereals. Amaranth oil contains approximately 77% unsaturated fatty acids and is high in linoleic acid. It is high in dietary fibre.

High in iron, magnesium, phosphorus, potassium, and appreciable amounts of calcium. A rich dietary source of phytosterols, with cholesterol-lowering properties. Contains a lunasin-like peptide and other bioactive peptides which are thought to have cancer-preventive and antihypertensive properties.<sup>[29]</sup>



## DISCUSSION

Millets are easily available and cheap in cost. Millets contain many nutrients like fat, protein, carbohydrates, dietary fibre, minerals, and vitamins as well as phytochemicals and antioxidants. Analysing the general qualities and effects of millets gives an obvious idea that millets are best advised in Kaphaja Roga (diseases due to Kapha), Pittaja Roga (diseases due to Pitta), and Raktadushti (vitiation of blood). It is always necessary to avoid the use of millets in Vataja Roga (diseases due to Vata) as it aggravates the condition. Millets are gluten-free, highly nutritious, and rich in dietary fibre. They are rich in micronutrients, including calcium, iron, phosphorus, etc. They are low in Glycemic Index (GI) as such don't cause a huge spike in blood sugar. Millets should ideally be an integral part of our daily diet. Dietary fibre in millets has water-absorbing and bulking properties. It increases the transit time of food in the gut which helps in reducing the risk of inflammatory bowel disease and acts as detoxifying agent in the body.<sup>[30]</sup> Most of the millet are gluten-free foods and thus they can be a choice of diet for IBS. Wahnschaffe U et al. (2007)<sup>[31]</sup> and Vazquez-Roque MI et al. (2013)<sup>[32]</sup> reported in their studies that a gluten free diet can reverse the mechanism of IBS.

Advising millets as per individual's Agni Bala (Digestive capacity) is also very important as they are guru (Heavy) and Ruksha (dry) which makes them difficult (Durjara) for easy digestion due to more amount of dietary fibre, protein, and less quantity of carbohydrates compared to other

cereals.<sup>[33][34]</sup> But both these qualities give an added benefit of satiety for a long time and they have Lekhana (Scraping) and Kledashoshana (dries up excessive moisture) action.

Based on this understanding the gross indications for the use of millets are, Sthoulya (obesity), Kushta (skin diseases), Prameha (Diabetes), Atisaara (Diarrhea), Medoroga (Diseases due to excessive lipids), Vrana (wounds and ulcers) and other Santarpanjanya Vyadhi (diseases due to over nourishment of single or multiple tissues) which are usually lifestyle disorders. Sarita ES et al. 2016<sup>[35]</sup> and Polkampally S<sup>[36]</sup> reported that Millets are beneficial in chronic conditions like Obesity and Diabetes Mellitus.

### Health Benefits

Millet is rich in niacin, which helps your body manage more than 400 enzyme reactions. Niacin is also important for healthy skin and organ function. In fact, it's such an important compound that it's often added to processed foods to enrich them. It is also an excellent source of beta-carotene. This natural pigment acts as both an antioxidant and as a precursor to vitamin A, helping your body fight off free radicals and supporting the health of your eyes.

### Control Blood Sugar :

Millet is low in simple carbohydrates and higher in complex carbohydrates, making it a low-glycemic index (GI) food. This means millet takes longer to digest than standard wheat flour. Low-GI foods can help keep your blood sugar from spiking after eating, which allows people with diabetes to manage their blood sugar levels more easily.

### Improve Digestive Health

Millet is rich in dietary fiber, both soluble and insoluble. The insoluble fiber in millet is known as a “prebiotic,” which means it supports good bacteria in your digestive system. This type of fiber is also important for adding bulk to stools, which helps keep you regular and reduces your risk of colon cancer.

### Protect Your Heart

The soluble fiber in millet can help reduce the amount of “bad” cholesterol in your blood—a risk factor for atherosclerosis. Soluble fiber turns into a gel in your stomach and absorbs cholesterol, allowing it to be safely carried out of your system. Some studies show that millet can also raise your “good” cholesterol levels and lower triglycerides. Because cholesterol is such a big risk factor for heart disease, eating millet regularly may help keep your heart healthier. Mainly the indication of millets as ayurvedic texts as lekhana dravya in sthauilaya (obesity) and in kaphaj vyadhi like prameha (diabetes). per Millets has a nourishing effect due to madhur rasa but at the same time, millets are easily digestible (laghu) in nature. So the indication is mainly in excessive amavastha, dull agni (mandagni) due to any disease, oedema (sotha), diabetes, and overweight /obesity.

### CONCLUSION

As mentioned in Ayurved, millet should be taken in the diet daily for the promotion of health and prevention of diseases. Intake of an unwholesome diet and Guru, Pichhila, Aamyukya Ahara, and Vihara result in lifestyle disorders, which cause disease burden. It can be used as a preventive diet in the healthy and therapeutic diet for disease. But they should be avoided used in vataja vyadhi (Diseases due to vitiated vata). Assessing the Agni (Digestive capacity) of an individual before advising millets is very much necessary. It has an important nutrient that helps to prevent lifestyle disorders.

### REFERENCES

1. Amadou I, Gounga ME, Le GW. Millets: Nutritional composition, some health benefits and processing-A

review. Emirates Journal of Food and Agriculture. 2013 May 1:501-8

2. Acharya kaiyadeva. Dhanya varga. In: Prof priya vrat sharma, Dr guru prasada sharma (eds.) Kaiyadeva Nighantu (Pathyaapthya vibhodika). Varanasi: Choukambha Orientalia; 1979. p. 301.
3. Gorakhnath chaturvedi. Charak Samhita, Varanasi, Chowkambha Bharti Academy, Sutrasthana 5/20.
4. Yadavji trikamji acharya. Charak Samhita, Varanasi, Chowkambha Bharti Prakashan; 2013, Sutrasthana 5/6.
5. Dr. Shiv Prasad Sharma. Ashtanga Sangraha 6/17, Varanasi; Chowkambha Sanskrit Series, Varanasi; 2013.
6. Yadavji trikamji acharya (2013)(eds.) Charak Samhita, Sutrasthana; Varanasi; Chowkambha Bharti Prakashan; 2013.
7. Anjali a dixit, Kristen mj azar, Christopher d gardner. Incorporation of whole, ancient grains into a modern Asian Indian diet to reduce the burden of chronic disease. Nutrition Reviews. 2011;69(8): 479-488.
8. Taylor JR, Emmambux MN. Gluten-free foods and beverages from millet. In: Gluten-free cereal products and beverages 2008 Jan 1 (pp. 119-V). Academic Press.
9. Zerihun tadele. Drought Adaptation in Millets. [Online]. Available from: <https://www.intechopen.com/books/abiotic-and-biotic-stress-in-plants-recent-advances-and-future-perspectives/drought-adaptation-in-millets> [Accessed 31 March 2021].
10. Das, I.K, Padmaja, P.G. Biotic Stress Resistance in Millets. (1st ed.): Elsevier; 2017.
11. Baker, R.D. Millet Production. [Online]. Available from: <http://agrilife.org/lubbock/files/2011/10/Millet-Production.pdf> [Accessed 31 March 2021].
12. Amadou I, Gounga ME, Le GW. Millets: Nutritional composition, some health benefits and processing-A review. Emirates Journal of Food and Agriculture. 2013 May 1:501-8.
13. Sarita ES, Singh E. Potential of millets: nutrients composition and health benefits. Journal of Scientific and Innovative Research. 2016;5(2):46-50.
14. Bora P, Ragaee S, Marcone M. Characterisation of several types of millets as functional food ingredients. International journal of food sciences and nutrition. 2019 Aug 18;70(6):714-24.
15. Acharya charaka. Sutrasthana, Annapanavidhi Adhyaya. In: Vaidya Jadavaji Trikamji Acharya

- (ed.)Charaka Samhitha. Delhi: Chaukhamba Prakashan; 2011. p. 154-155.
16. Bhavamishra. Dhanya varga. In: Srikantha Murthy,K.R (ed.) Bhavaprakasha. Varanasi: Chowkhamba Krishna Das Academy; 2011. p. 374.
17. Acharya kaiyadeva. Dhanya varga. In: Prof priya vrat sharma, Dr guru prasada sharma (eds.) Kaiyadeva Nighantu (Pathyaapthya vibhodika). Varanasi: Choukambha Orientalia; 2009. p. 318.
18. Yadavji trikamji acharya. Charak Samhita, Sutrasthana, Varanasi, Chowkambha Bharti Prakashan 2012.
19. Yadavji trikamji acharya. Charak Samhita, Sutrasthana, Varanasi, Chowkambha Bharti Prakashan; 2012.
20. Yadavji trikamji acharya. Sushruta Samhita, Sutrasthana, Varanasi; Chowkambha Bharti Prakashan;2009
21. Yadavji trikamji Acharya. Sushruta Samhita, Sutrasthana, Varanasi, Chowkambha Bharti Prakashan; 2009
22. Yadavji trikamji acharya. SushrutaSamhita, Sutrasthana, Varanasi, Chowkambha Bharti Prakashan.
23. Pandit Brahma Shankar Mishra. Bhavaprakasha Purvardha Dhanya varga/4.1stEdition. Varanasi. Chaukambha Sanskrit Series Office: 2000
24. <https://www.webmd.com/diet/health-benefits-millet>
25. WH Foods (2016) Almonds. Retrieved from <http://www.whfoods.com/genpage.php?tname=foodspice&dbid=128>
26. Medical News Today. Mangoes, health benefits, Nutritional breakdown; 2016
27. <https://www.webmd.com/diet/health-benefits-millet>
28. Bhavamishra. Dhanya varga. In: Srikantha Murthy,K.R (ed.) Bhavaprakasha. Varanasi: Chowkhamba Krishna Das Academy; 2011. p. 374-377
29. <https://www.webmd.com/diet/health-benefits-millet>
30. <https://vikaspedia.in/health/nutrition/nutritive-value-of-foods/nutritive-value-of-cereals-and-millet/milletsthe-nutricereals>
31. Wahnschaffe U, Schulzke JD, Zeitz M, Ullrich R. Predictors of clinical response to a gluten-free diet in patients diagnosed with diarrhea-predominant irritable bowel syndrome. *Clinical Gastroenterology and Hepatology*. 2007 Jul 1;5(7):844-50.
32. Vazquez-Roque MI, Camilleri M, Smyrk T, Murray JA, Marietta E, O'Neill J, Carlson P, Lamsam J, Janzow D, Eckert D, Burton D. A controlled trial of a gluten-free diet in patients with irritable bowel syndrome-diarrhea: effects on bowel frequency and intestinal function. *Gastroenterology*. 2013 May 1;144(5):903-11.
33. Obilana AB, Manyasa E. Millets. In *Pseudocereals and less common cereals 2002* (pp. 177-217). Springer, Berlin, Heidelberg.
34. Geervani P, Eggum BO. Nutrient composition and protein quality of minor millets. *Plant Foods for Human Nutrition*. 1989 Jun 1;39(2):201-8.
35. Sarita ES, Singh E. Potential of millets: nutrients composition and health benefits. *Journal of Scientific and Innovative Research*. 2016;5(2):46-50.
36. Polkampally S. HEALTH: Millet Use Against Modern Medications to Treat Obesity and Diabetes.

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