



SRIDHANYA (MILLETS): AN AYURVEDA DIET

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Abstract- Millets, a group of small-seeded grains but generally called motaanaj or kshudradhanya have gained prominence in Ayurveda due to their exceptional nutritional and therapeutic properties. Ayurveda, unfolds the ancient treasure through types of food, herbs, daily regimen etc. and fundamentally emphasizes the importance of food in maintaining health and preventing diseases. Millets, being an integral part of the Ayurvedic diet, offer a diverse range of health benefits. These are considered to balance the doshas (bio-energies). Several types of millets are easily available and good for physical workers, they can easily digest. Additionally, millets possess a unique combination of macronutrients and micronutrients, that support daily need of recommended diet of nutrients. This article provides insights the role of millets in Ayurveda, detail names of millets, out of common millets showed their compatibility with an individual. Understanding the significance of millets in Ayurveda can guide modern dietary practices, promoting a sustainable and wholesome approach to nutrition and health and how these help in attaining the SDG goal stated by UN.

Keywords- Millets, Ayurveda Diet, SDG Goal, Sridhanya, Kshudradhanya,

I. Introduction

Ayurveda principles are based on the theory of trayoupstambha(three pillars) i.e., ahara (diet), nidra (sleep), brahmacharya (to act with more awareness and with more conscious decisions). Ayurveda texts mention, Ahar- a balanced diet is the key to live a healthy, happy and prosperous life, physically and mentally-swasthasyaswasthyarakshnam. Ayurveda advocates that aharis itself treated as aushadha(natural medicine) when it is taken in an appropriate and a balanced way; and it is poison(visha), if it is taken in an imbalanced way. Balanced diet supports to make appropriate function of physiology and psychology of a healthy person as well as a diseased person. Balanced diet also prevents the common ailments to keep us away from a doctor. Ayurveda wisdom provides us a comprehensive and sequential knowledge of different kinds of aharavarga (classifications of diet) since time immemorial.[1]

Acharya Charak has classified aharavargain twelve(12) major categories; Acharya Shushruta has classified aharavarga in two major categories i.edravavarga with further divided in ten(10) categories and annapaanavarga which further divided in eleven(11) categories; Acharya Vagbhata has also classified into two, major categories i.edravavarga and anna-swarupavarga, each one is divided into seven(7) categories.

Shukdhanya Varga- raktshali, mahashali, kalam, sakunahat,turnak, dhirgshool, gauravdhanya, panduvarn, langul, sughandhik, lohval, sariva, pramodak, patang and tapniya. Thesedhanya are sheetal in virya, madhur in rasa and vipak; these are alp-vat-varadhak and - the feces(kittabhagend-product) comes in semisolid form.

Barak(kanguni), uddalak(vankodo), chin(china), sharad, ujjaval, durdur, gandhan, guruvind have the properties less rationed than the shashtikdhanya. All dhanya are ripened in six months from summer to rainy season. So, these are called shashtik(60 days). [2]

Sridhanya are commonly called Kshudradhanya(used as staple food- as an alternative food than maincereals) or Mota-anaj(commonly used in rural areas- big sized or used all millets used as a mixture) or paramparikdhanya(known for traditional food) or Kudhanya(3) several millets rich content but needs much energy foremulsification-these dhanyaconsume more jathragini- fire+ water- to digest and to metabolize) or trinadhanya (trinadiverga- grass derived cereals and these have shortterm life span).[4]

For millennia, millets were introduced in ancient texts, Rigveda, Yajurveda and Atharvaveda. Ancient texts had given references of common consumption of millets, some of, like priyangu(foxtail millet), and shayamak(barnyardmillet), chinek(proso- millet)etc., explained in below paragraphs.

The word “Millet” is derived form a latin word “Miliun” which means small seed. Millets are group of plants come under Poaceae family which contain smaller seeds than major cereals. Their small seeds store rich nutrition. Most millet crops are native of India and are popularly known as nutri-cereals, as they provide most of the nutrients required for normal body functioning on everyday basis.

India is the leading producer and consumer of millet crops and their products. The rural people who are living in rural blocks and villages, grow and consume millets as a staple feed; because they keep domestic animals, so dual purpose is solved as cereals as grain and animal food as fodder; most important thing is security, these are cost effective, and these grow naturally. In Africa continent, other millets such as fonio and teff are grown.

Why millets are important, ancient texts and our ancestors have left strong imprint and proof on millets as a natural, having rich nutrition, self- grown & pure cereal which complete the everyone per-day diet goal.

United Nation(UN) has introduced 17 Sustainable Development Goal (SDG); the goal number one, two and three i.e., no hunger, no poverty and good health and wellness respectively, we, AYUSH practitioners can guide and suggest that these goals can be meet out via to agriculture, or via introducing millets preparation in food market. The important points, are below indicated, to help a person to make it a clear picture on millets production and nutritional value.

1. Drought resistant
2. Resistant to pests and diseases
3. Short growing season
4. Remarkable nutritive values
5. Alkaline forming cereals
6. Gluten free
7. Most physical- workworkers eat as the nutritious diet

According to Nutraceutical, types of millets are based on area grown and its grain size, are classified as major and minor millets:

1. Major millets- a. Pearl millet (Bajra)
b. Finger millet(Ragi)
2. Minor millets- c. Foxtail millet(Kangni)
d. Proso millet (Cheena)
f. Little millet
g. Kodo millet
h. Barnyard millet

According to Ayurveda, millets (sridhanya)are listed with scientific names:

1. Nartaki/Ragi- Finger millet (*Eleusine coracana*)
2. Kangu (priyangu)- Foxtail millet (*Setaria italica*)
3. Shyamak- Barnyard millet (*Echinochloa frumentacea*)
4. Koradush(kodrava)- Kodo millet (*Paspalum scrobiculatum*)
5. Cheenak-Proso millet (*Panicum miliaceum*)
6. Gavedhuka- Job's tear millet (*Coix lachrymal jobi*)
7. Bajra-Pearl millet (*Pennisetum typhoides*)
8. Yavanal/Jwara- Sorghum (*Sorghum vulgare*)

As it was mentioned above, Acharyas have mentioned clearly that excess intake of ahara (diet) acts as visha(poison) in the body. According to prakriti(basic defect with dominant doshas) of every individual should consume ahar(diet) to maintain a healthy and peaceful life. Ayurveda emphasizes on how much diet we should intake on daily basis. Diet takes care of our health on everyday basis but excessive intake or without knowing the properties of food, can put us in imbalance of doshas.

This article aims to explore the nutritional potential of millets and their properties, and how much intake will be benefitted for a normal person; this is an attempt made to understand the properties(gunas)and functions(karma) of millets along with their indications, contraindications, right processing and administration.

II. My Understanding (Sangeeta Nehra)

Before going to detail about millets, my understanding towards properties of millets is that these are rich in content like iron, calcium, protein, fibers and carbohydrate etc. and commonly most of millets are told laghu, but my view is which millets are rich in iron, protein and other mineral contents are guru in nature- my understanding is guru means it takes much time to break down complex nature of their properties into a simplest form, needs much more body energy to simplify the food stuff(millets). As we see generally carbohydrate is ingested and digested easier than protein. Protein takes much time to digest. So, when millets(which are rich in protein content) preparation is consumed or eaten as a food even in a balanced way- the millet food pulls out the body fire(needs more enzymatic action)energy to process for ingestion, digestion and emulsification; side by side also these millets pull water content to emulsify the food to proceed further; that is the reason, dietitians and nutritionists give preference to millets for reducing weight/obesity; but Ayurveda recommends to use these types of food for the people who are doing on physical job profile like farmers or who walk from one place to another place or who works hard like sports persons. But these should be consumed on alternate days or on weekend just to complete the nutritional value. On everyday basis, these can be harmed the body because of hard to digest which are rich in content for example, Bajra, Jowar, Jobs tear, Ragi.

The Book *Dhanvantri*, describes about *ahar*(food) and *gunas*(properties). The *tamsic* food grows on or under the ground(keeps the more earth and water element); these food give strength to the body because they are directly bound with gravity; because of this property, they are called *tamas* or these are heavy in properties; which are harder to digest, and produce & consume heat and give the same to the body system; although the flow of energy is very slow, because of less ration of air and fire element.

Five Elements (*Panchmahabhoot*) Theory says:

In the existing manifested world, these elements (*tatvas*), do not exist in pure form, they always present in some varying ratios in any physical form- matter. So, fundamentally, *prithvitatva* carries the grossest and densest properties and attributes, because Prithvi proportion is the highest, out of the five elements. The same formula applies on the other elements.

Five elements (*panchmahabhoot*) have its own vibrational frequencies and continuum of energy; for example *prithvimahabhut* begins from its most densest and slowest vibrational frequencies then *jal/aphamahabhut* keeps less dense vibrational frequencies; so the same for, next *agnimahabhut* is having the more subtle vibrational frequencies than previous two elements(*prithvi* and *jal*) and *vayumahabhoot* has the more subtlest vibrational frequencies than the previous ones.

Prithvi tatva is more stable, grossest and densest manifested form; *Jal tatva* is less stable, less dense and liquid form; *agnitatava* is in the state of transformational energy, very less dense and its warmth spreads in surrounds limited area; but the *vayutatva* is the vibrational force or vital movements which can flow from one place to

other – it is a vehicle carries the subtle information(feelings/emotions/thoughts) viavital energy flow (vata movements) within their vibrational fields/subtle channels (pranmaya kosha); akashtatva is that field or premises which keeps the account of everything about a being.

Gurutavam- Jal-Bhumyo Patan- Karma Karnam (prashashtbhashya, guna granthi); lowest level of vibrational energy gives the solidity- change into a form/shape or matter; dense form keeps the more gandha(smell); most gravitational force(guruta). Millets which are rich in protein or mineral content, definitely will take time to digest. This is my personal (Sangeeta) opinion.

The book- Ayurveda ki Aushdhiyan aur UnkaVargikaran written by Author Kaviraj Shri VishavnathDevedi has written the comparative Ahar Dravya classification from the brihattriya (charak, Sushurat and Vagbhata): Here the focus is on the millets and its verga.

NOTE: THIS TABLE-A IS PREPARED FROM THE BOOK AYURVEDA KI AUSHDHIYAN AND VARGIKARN WRITTEN BY KAVIRAJ SRI VISHAVNATH DWIDEDI

SN	CHARAK(SU.28)	SN	SUSHRUTA(SU.46)	SN	ASHTANG(SU.6)
ANNAPAN VARGA (SPECIALLY - - - SHALI, SHASHTIK AND BRIHI)					
	SHUK-DHANYA VERGA		SHALI-DANYA VERGA		SHUK-DHANYA VERGA
A	SHALI	A	SHALI	A	SHALI
1	Rakt-shali	1	Rakt-shali	1	Rakt
2	Maha-shali	2	Maha-shali	2	Mahan
3	Kalm-dan(kalm)	3	Kalm	3	Kalm(Kalmdan)
4	Shakunnahrit(vakra)	4	Shakunnahrit(vakra)	4	Turnak
5	Turnak	5	Kardmak	5	Dirgha-shook
6	Dhirgh-shook	6	Dirgha-shook	6	Pundrik
7	Gaur-dhanya	7	Pundrik	7	Panduk
8	Panduk	8	Panduk	8	Rodr-shook
9	Langul	9	Pushpandak	9	Sugandhik
10	Sugandhak	10	Sugandhak	10	Pundru
11	Lohbal	11	Rodrapushpak	11	Sara-mukha(krishan- mukha)
12	Sariva	12	Kanchanak	12	Pramod
13	Pramodak	13	Sheetbhiruk	13	Gaur
14	Patang	14	Mahish-shook	14	Sariva
15	Tapniya	15	Maha-shook	15	Kanchan
16	Yavak	16	Hayanak	16	Mahish
17	Hayan	17	Dushak	17	Shook
18	Panshu	18	Mahadushak	18	Kusumandak
19	Vapya	B	SHASHTIK DHANYA	19	Langal
20	Naishadhak	19	Shashtik	20	Lohvala
B	SHASHTIK DHANYA	20	Kang-guk	21	Kardam
21	Shashtik	21	Mukundak	22	Dushak
22	Barak	22	Pitak	23	Sheetbhiruk
23	Uddalak	23	Pramodak	24	Patang
24	Sharad	24	Kaklak	25	Tapniya
25	Ujjaval	25	Asanpushpak	26	Yavak
26	Durdur	26	Mahashashtik	27	Hayan
27	Gandhak	27	Churnak	28	Pansu
28	Kuruvind	28	Kurvak	29	Bashap

C	BRIHIDHANYA	29	Kedar	30	Naishdhak
29	Brihidhanya	C	BRIHIDHANYA	31	Shashtik(shavet)
30	Patal	30	Krishanbrihi	32	Shashtik(asit)
31	Kordush(Kodrav)	31	Shalamukhi	33	Mahabrihi
32	Shayamak	32	Jatumukha	34	Krishanbrihi
33	Hasti- shayamak	33	Nandimukha	35	Jatumukh
34	Nivar	34	Lavakshak	36	Kukutandak
35	Toyaparni(Jalparni)	35	Tvaritak	37	Lavakhaya
36	Gavedhuk	36	Kukutandak	38	Paravatak
37	Prashantika	37	Paravatak	39	Shakar
38	Jalshayamak	38	Patal	40	Sarkodalak
39	Lohitpriyanu		KU-DHANYA	41	Ujjaival
40	Anupriyangu	39	Kordushak	42	Chin
41	Mukund	40	Shayamak	43	Sharad
42	Jhinti	41	Nivar	44	Durdur
43	Garmuti	42	Shantanu	45	Gandhan
44	Varuk(shanbeej)	43	Barak	46	Kuruvind
45	Varak(shayambeej)	44	Uddalak	47	Patal
46	Shivir	45	Priyangu	48	Kangu
47	Utkat	46	Madhulika	49	Kodrav
48	Jurn(Jonar)	47	Nandimukhi	50	Nivar
49	Yav	48	Kuruvind	51	Shayamak
50	Venuyav	49	Gavedhuk	52	Yav
51	Godhum	50	Sar	53	Anuyav
52	Nandimukhi(Yavika)	51	Varuk	54	Venuyav
53	Maduli(Godhumbheda)	52	Toyaparni	55	Godhum
		53	Mukundak	56	Nandimukh
		54	Venuyav		

Charak mentions barak(kanguni), uddalak(ban-kodo), chin(china), sharad, ujjaval, durdur,gandhan, guruvind, all these are kudhanyawhich means these needmuch digestive fire energy to digest than shashtikdhanya which have rich(more nutrients) in properties and need less energy to digest. Kudhanyameans the alternate or staple food to be consumed in winter season to keep the body warm.

i. Kodo(kordub) and sawanvak(shayamak)- their properties of rasas are **kashaya and madhur**; are laghuguna and instigates/vitiates vata dosha- pacify kapha and pitta dosha; virya is sheet; **grahi and dhatu shoshak**;ii.Hastisyama(badisavank),nivar(tinni ka chaval), toyaparni, gavedhuk, prashatika, ambhashyama(jalsayamak), lohit anu, priyangu, mukund, jhindi, garmuti, varuk(san ka beej), varak, shivir, utkat, jurnhah- all dhanya have the same properties as savankdhanya preserves; all these dhanya are triptdhanya- after eating thesedhanya, we have a feeling of satisfaction and fullness. [Charak sutra sathan- page no. 528, 27/ 14]

Sushruta writes millets as Kudhanya- kodo, shayamak, nivar, shantnu, varak, udalak, priyangu, madhulika, nandimukhi, kuruvund, gvedhuk, varuk, todparni, mukundak, venuyav- all kudhanya are ushana, kashaya, madhur, ruksa, katu in vipak, kapha-nashak, mutra- alpata, vata- pitta prakopak.

i. Kodo, nivar,shayamak, and shantanu are kashaya, madhur, and shit guna, pitta shamak;ii.madhuli and nandimukhi are madhur, sheet, sanigdha in guna; iii. varuk and mukundak are absorbent (able to take in liquid from the surface);iv. venuyav are ruksha, viryaushan, vipakkatu, kaphanashak, kashaya- vataprakopak.

Ashtagharidyah has given the references of millets in chapter of annaswaroop-vijyaniya;millets are named as trindhanya or kudhanya or kshudradhanya, for example kangu(kaguni), kodav, nivar(tinni ka chaval), sanva; their properties are sheetal, laghu, vat-karak, lekhan, kapha-pita nashak. These millets are cooked very easily and earlier than other cereals. These have no bran (outer covering) like shalibrihi and santhi rice.

i.Nivardhanya synonyms are kumkum-dhanya, vanya-dhanya, jal-udbhava, jal-ruha, sujatka, rakt- mangal, sukumar, swarnj; its properties are madhur(sweetened) and sheetal(balances fire and gives cooling effect),

helps in reliving loose motions (atisar), and balances excessive acidic nature in blood(rakta-pitta); most important thing is to notice about this special millet is, it births **swayamjat**(to grow its own- automatically oozes out from soil) where the water content rich in soil- we can say that near rivers, natural ponds or rain dominant areas; Indian rishis prefer to eat these self- grown millets, who were living in forests for meditation, liberation, long time penance practice; ii. Yavnalor shevetyavnal or javar(sorghum valgare); its synonyms are dirgh-nal, dirgh-shar, dhavlo, nakshashtra-akriti; it is an annual grass shrub; it is grown on dry soil; Utrakhandstate traditionally agriculture this millet in vast area of land. Traditionally, matured seeds are eaten after frying as we eat fried black gram; it is one component of mixed grain (mandva and kodo) which helps for to complete nutrition and giving strength for preparing mixed grain roti. Few other varieties of yavnal are also given in texts i.e., tuvarnal, sharadyavnal.

Bhavprakash Nighantu mentions common properties of **kshudradhanya**-kinchitushan(keep warmth but in low ratio), madhur and kashaya rasa (sweet and astringent in taste), laghu (cooked easily, keeps body in lighter side), lekhan(to remove excess fat/ adipose tissue), vipakkatu(absorbed in circulation as a pungent taste product), ruksha(if we eat- it results dryness in the body), adarta ko sukhana(it pulls out water via hot-astringent properties of millets), vatkarak(generally amplifies the flow of movement), mal ko bandhnevala (to bind/shape solid- fecal matter via astringent property), raktavikar and kaphavikarnashak(purifies blood and reduces fat).(5)

i.Kanguni or Priyangu or Foxtail- yellow is the best out of four (black, red, white and yellow); it helps to bone grafting, nourishes all tissues (bringhan), creates dryness, **reduces kapha**(liquify/melts accumulated fat). It is also used for horses; ii. China or Chinak or Prosomillets have the same properties of Kanguni; iii. Shayamakor Savan or Barnyard millets are rich in vitamin B1, it **balances pitta dosha** (reduces accumulated heat and pacifies blood disorders) and relieves constipation(vibandh); iv. Vankodo or Kodomillets **exaggerate vata doshas and are grahi**(feeling of fullness) and v. other trin dhanya are mentioned in brief, like charuk(sharbeej), vanshyav(bans kebeej), kusumbhbeej, gavedhuka, neevartini, yavnal(panera), zuar which are used as food(anna).(Bhavprakash Nighantu- Dhanya varga- 74-75)

III. Relationship with Environment- Climate and Soil:

Generally, the millets are grown in tropical upto an altitude of 2,100m; these are heat loving cereals for germination and growth- means temperature range of 26-29 degree is best for crops development &for good crop yield. It is grown where rainfall ranges from 500-900 mm. Kodomillets & brown top millets grow well in moderate rainfall of 50-60cm; finger millets(ragi)are most commonly cultivated crop among the millets in Arunachal Pradesh; brown top millet is anannual warm season species can be agriculture from mid-April to mid- August, mostly grown in South East Asia; it is specially grown in rainfed tracts. Mostly millets are hardy crop & well suited for dry land. Millets are drought tolerant specially the **brown-top millets are early maturing harvested in about 75-80 days earlier than other millets.**

The researches show that the millets can survive on different kinds of soil, -very poor to very fertile land- and can tolerate a certain degree of alkalinity; most of the millets adapt and compatible with soil on which they birth, becomes young and mature with nutritious seeds; kodo millets can be grown well in gravelly stony soil such as in the hilly region. At the onset of monsoon, first ploughing is being done to grow millets.

Table:1 Sridanya-guna(inherent properties of millets)

Millets	Rasa	Guna	Virya	Vipaka
Ragi (nartaki)	Madhur Kashaya	Guru	Sheet	-
Shayamak	Madhur Kashaya	Laghu	Sheet	-
Kanguni (priyangu)	Madhur Kashaya	Laghu	Sheet	Madhur
Bankodo (kordush)	Madhur, Kashaya	Laghu	Sheet	Katu
Cheenak	Madhur kashaya	Guru Ushan	Sheet	Katu

Bajra	Madhur Kashaya	Guru, RukshaUshan	Ushan	Katu
Yavnal (jowar)	Madhur Kashay	Guru Ruksha, Ushan	Ushan	Katu
Gavedhuk (job's tear)	Katu,svadu (bh.p.)	-	-	Madhur

IV. Our Main Objective are

1. To know the basic information, important properties and important functions on daily basis, as per Ayurveda text.
2. To explore the nutritional as well as therapeutic potential of millets.
3. To advocate their use as future staple food cereals, in countries who can use for the purpose of maintain their physical health- under the umbrella of SDG (Goal no. 1,2, and 3)
4. To aware people about the indications and contra- indications.

1. RAGI- FINGER MILLET [ELEUSINE CORACANA]



Figure-1 Finger Millet

Ancient View: It is pronounced in common language as mandva, nritak, hastrin, markt; its synonyms are lacchann, sayal, kanika, gucachanni. Charak Samhita described, ragi in the chapter of aharvarga; in kayadevnightantu mentioned in dhanyavarga.

It is guru in guna (slow movement of energy flow, digestion takes long time and it pulls energy/heat/agni from the body), it accumulates kapha dosha and pacify vata dosha.

Modern View: It is an annual shrub. Its farming is done in Utrakhand, Himachal, Bihar States where water content in the soil is less or on dry soil. These are rich in **calcium and polyphenols**.

Table:2 Nutritional Value of Finger Millet

Ragi (Finger millet) (100gm)	Protein (gm)	Fat (gm)	Carb o (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Potassiu m (mg)	Sodiu m (mg)
	7.30	1.30	72.0	344	3.9	137	408	11
	Thiami ne(mg)	Ribo. (mg)		Niaci n	Vit A (carotene) microgra m	Fiber	Calories (Kcal)	
	.37	.17		1.34	42	11.50	328	

2. PRIYANGU- FOXTAIL MILLET [SETARIA ITALICA]



Figure-2 Foxtail millet

Ancient View: It is pronounced in common language askangu, kanguni and tanguni; yellow kanguni is best out of four types. It is best for bone grafting or strengthening of bones. It is guru, and ruksha in gunas and is kaphanashak and used for as a horse food as per reference of Bhavprakash Nighantu.

Modern View: It is grown in plains areas of Himalya region and get matured in 100 days. Their seeds are rich in protein, and phosphorous which helps in repair and growth in the body and strengthening of bones. It is recommended for lifestyle disorders, for example diabetes. It is also a poultry food, supplied in poultry farms.

Table: 3 Nutritional Value of Foxtail Millet

Priyangu (foxtail) 100 gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	13	.8	72	9	3	-	204	-
	Thiamine(mg)	Ribo. (mg)		Niacin	Vit D	Fiber	Calories	
	0.3	0.11		4.1	-	6.7	356	

3. CHEENAK- PROSO MILLET [PANICUM MILIACEUM LINN.]



Figure-3 Proso Millet

Ancient View: It is pronounced in common language as cheena, madha, chinna, chaina, and cheene; synonyms are kakkangu, chinak, sulakshan, shalakshanak, kangubhed; is commonly called Indian Millet, reference from Bhavprakash Nighantu.

Modern View: It is also an early grown shrub. It is rich in carbo and protein both, so, it is used for fermented and malting types of food items; in comparable to wheat, cheenak has the high content of minerals content so helps in overall growth of the body. (6)

Table:4 Nutritional Value of Proso Millet

Cheenak (Proso) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	12.5	4.2	75.1	14	3.9	153	285	4
	Thiamine(mg)	Ribo. (mg)		Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	0.4	0.28		4.5	.11	3.5	382	

4. SHAYAMAK- BARNYARD MILLET [ECHINOCLOA FRUMENTOCEA]



Figure-4 Banyard millet

Ancient View: It is pronounced in common language as sama, shayamak, shayam, sawan and its synonyms are tribeej, avipriya, sukumar, rajdhanya, trinbijo-utam; commonly called Japanese Barnyard Millet; the term which sucks/dries the dhatus or shoshankarnevala, ruksha, vatakar reference from Bhavprakash Nighantu.

Modern View: It is widely grown in India and its neighboring countries. It is used generally for spiritual and fasting purpose; commonly known as vrit ka chawal. It is different from simple rice. It is rich in starch, protein, vitamin B1, zinc, iron.(7)

Table:5 Nutritional Value of Barnyard Millet

Shayamak (Barnyard) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	10.0	3.0	72.0	11	1.5	75	210	9
	Thiamine (mg)	Ribo. (mg)	Zinc	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	-	-	1.2	-	-	7.0	360	

5. KORDUSH- KODO MILLET [PASPALUM SCROBICULATUM]



Figure-5 Kodo Millet

Ancient View: It is pronounced in common language as kodrav, bankodo, kordush; its synonyms are uddal, bankodrav, kodo, kodra; it is very light in stuff so it blows in air- ken vayunadravtiti. Two types of kodo explained in Bhavprakash Nighantu- Kodo and Bankodo. Kodo is vatakar, grahi, sheetal and pittakaphashamak; Bankodo is ushan, grahi and ativatkarak.

Modern View: It is a recommended food for diabetic patients on the place of rice.

Table:6 Nutritional Value of Kodo Millet(9)

Kordush (Kodo) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	9.8	3.6	66.6	35	1.7	-	-	-
	Thiamine (mg)	Ribo. (mg)	Nico. (mg)	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	.15	.09	-	2	-	5.2	353	

6. SAWAI-LITTLE MILLET [PANUCUM SUMATRENSE]



Figure-6 little Millet

Ancient View: It is pronounced in common language as sawai and kutki. The seed (grain) of sawai is very small in size and consumed at the place of rice. It is a traditional crop of India.

Modern View: It is rich in protein, niacin and phosphorus specifically; so good diet for growth and repair.

Table:7 Nutritional Value of Little Millet(9)

Sawai (little) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	8.0	4.2	65.0	18	9.1	-	218	-
	Thiamine (mg)	Ribo. (mg)	Nico. (mg)	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	.02	.09	-	3	-	6.2	330	

7. GAVEDHUK- JOBS TEAR [COIX LACRYMA JOBI]

Ancient View: It is pronounced in common language as asarubeej (analogy with tear drop); its synonyms are kuruvinda, sarabaruka, todaparni, toyaparni, galagodhuma, gojihva, varshika, varshani, gavedhu (istrilinga), gavedhuka as per reference of Bhavprakash Nighantu. It is used in mutrakrichha and mutrajanna; karshayakar.



Figure-7 Jobs tear Millet

Modern View: It is widely grown in India. It is rich in protein, iron, and zinc; glutamic and leucin; so, it helps in reducing obesity.

Table:8 Nutritional Value of Jobs Tears(10)

Gavadhuk a (Jobs tear) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	15.9	3	62.0	146	13.6	-	-	-
	Thiamine (mg)	Ribo. (mg)	Zinc	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	-	-	3.61	-	-	5.53	359	

8. BAJRA- PEARL MILLET [PANNISETUM TYPHOIDES]



Figure-8 Pearl Millet

Ancient View: It is pronounced in common language bajra, bajranna, sajak, nalika, neelkaran and agryadhana.

Modern View: It is a recommended food in winter, widely used in North India regions. Rich in iron, magnesium, phosphorus and high fiber content.

Table :9 Nutritional Value of Pearl Millet(11)

Bajra (Pearl) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	11.8	5.0	67.0	42	8.0	137	296	19
	Thiamine (mg)	Ribo. (mg)	Nico. (mg)	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	.32	.27	-	2.4	-	11.4	353	

9. JOWAR- YAVNAL MILLET [SORGHUM VALGARE]



Figure -9 Yavanal Millet

Ancient View: It is pronounced in common language as juaar, jwari, panera and in English is Sorghum; its synonyms are yavanala, juyaar, devdhanya, dheeragnala, dhirgashara and yonalah; it is mutrajannan and vrishyaas per reference of Bhavprakash Nighantu.

Modern View: It is rich in protein, calcium, iron and phosphorus. It is used in rural areas as the nutritious diet for domestic animals; is also used as a staple diet for common cooking purpose.

Table :10 Nutritional Value of Yavanal Millet

Jowar (yavanal) 100gm	Protein (gm)	Fat (gm)	Carbo (gm)	Cal. (mg)	Iron (mg)	Mag. (mg)	Phos. (mg)	Sodium (mg)
	10.6	3.1	75.0	26	4.22	165	287	-
	Thiamine (mg)	Ribo. (mg)	Zinc (mg)	Niacin (mg)	Vit E (mg)	Fiber	Calories (kcal)	
	.67	.11	1.79	2.48	-	6.7	361	

Table 11: Important nutrients stored as specific vital energy patterns of Each Millet

MILLET (100 g)	CARB (g)	PROT. (g)	FAT (g)	FIBRE (g)	THIAMINE(g)	RIBOFLAVIN(mg)	NIACIN (mg)	CA (mg)	P (mg)	IRON (mg)
Finger	72.0	7.3	1.3	11.0	0.37	0.17	1.3	344	408	3.9
Foxtail	72.1	13.0	0.8	6.7	0.3	0.11	4.1	9	-	3.0
Proso	75.4	12.5	4.1	2.2	0.4	0.28	4.5	14	206	3.9
Banyard	72.0	10.1	3.9	7.0	-	-	2.0	20	-	1.5
Kodo	66.0	9.8	3.6	9.0	0.15	0.9	2.0	35	188	1.7
Little	65.0	8.0	4.2	6.2	0.2	0.09	3.0	18	-	9.0
Job's Tear	62.0	15.9	3.2	8.5	-	0.29	4.7	146	-	13.3
Brown Top	60.0	8.80	1.82	8.2	-	-	-	0.2	276	4.1
Pearl	67.0	11.8	5.0	11.4	.32	.27	2.4	42	-	8.0
Jowar	75.0	10.6	3.1	6.7	.67	.11	2.4	26	-	4.2

V. IMPORTANT NUTRIENTS IN EACH MILLET:

- Finger Millet- Rich in calcium and polyphenols.
- Foxtail Millet- Rich in protein; food for diabetes patients.
- Proso Millet- Rich in Thiamine; food for cardiac patients.
- Banyard Millet- High in fiber and best alternative torice.
- Kodo Millet- High lecithin (used for Dementia and Alzheimer)
- Little Millet- Food for boosting immunity.
- Job's Tear- Rich in protein, high leucin and glutamic acid.
- Browntop Millet- Food for constipation, rich in fiber.

Table 12: Daily Requirement of Essential Nutrient for a Human Model(Body- Mind-Soul)

Essentials	Daily Requirement	Milletsrich in Essential Nutrients
Proteins	50-60gm	Foxtail, Proso, Teff, Banyard, Pearl, Jowar
Fats	65-98gm	Little, Foxtail, Jobs Tear
Carbohydrate	225-325gm	Finger, Proso, Teff, Banyard
Thiamine	1mg	Finger, Fox, Banyard
Riboflavin	1-3mg	Proso, Banyard, Jobs Tear
Niacin	16mg	Kodo, Proso, Foxtail, JobsTear
Calcium	700mg	Ragi, Finger
Iron	8-15mg	Proso, Little, JobsTear
Magnesium	400mg	-
Phosphorus	4000mg	Ragi, Banyard, Brown Top
Sodium	500mg	-
Potassium	1600-2000mg	-
Fiber	25-30gm	Banyard, Kodo, JobsTear, Brown Top

VI. Material and Method:

Materials are

A. Millet: Finger millet(*Eleusine coracana*), Foxtail millet (*Seteria italica*), Proso millet(*Panicum miliaceum*), Banyard millet(*Echinochloa crus-galli*), Kodo millet(*Paspalum scrobiculatum*), Little millet(*Panicum sunatrense*), Fonio (*Digitalia exilis*), Job's tears (*Coix lacryma*), Brown top (*Urochloa aramosa*).

B. Appendage: to cook millets with different style, require supportive utensils and others groceries, various type of spices (kitchen healers) is required to enhance the volatile properties, during the processing of cooking.

Note: -if we cook recipes of millets on the mud stove(chulha), it adds up natural cosmic energy through natural way of heating and enhances the satvaguna of food.

For example- for vata person: saffron, coriander, fresh ginger, cumin, black pepper, fennel; for pitta: cinnamon, turmeric, fennel, cardamom; for kapha: clove, turmeric, black pepper, mustard seeds, red chilli, black pepper, fenugreek seed, these spices help as appetizer, stimulant and helps in balancing doshas in the body.

Methods: Different Varieties of Millets as Food:

Finger millets (ragi) are being used in a variety of ways, a substitute with other cereal grains & their flour such as rice & other starchy grains; we consume as manduachappati, dosa, idli; these products give dark colour, little bit hard, roasted are much tasty; best for to control sugar in diabetes; Proso millets are being used as burfi, biscuits and burfi; Banyard millets are cooked as lemon rice; Kodo, Teff, Jobs Tear, Fonio and Little millets recipes are very much in fashion like halwa, prantha, pulav.

VII. Conclusion

1. Millets are best used in Santarpanajanya Vikara (diseases due to excessive nutritional (carbohydrate, protein and fat diet) and Kapha-Pitta Doshaja Vikara.

2. Generally, the people who belong to rural and weak section of society used millets as a food therapeutics; side by side who do physical work like laborers, farmers or workers of industry etc.; these are used as a potential nutrient food who have general weakness.

3. Generally, millet diet is to be used to prevent mal-nutritional purpose with best indications of daily recommended diet and also with contraindications- do not use on everyday basis. However, in cases of vatajavyadhi (diseases brought due to excess accumulation of vitiated vata or excessive flow of movement), they should avoid this kind of food recipes. Before recommending millets, it is extremely important to evaluate

a person's agni (digestive capacity) and prakriti(basic constitution). There are numerous patyakalpanas (food preparations) that can be made from millets;therefore, it is important to select a preparation that is suitable for both the patient(prakriti) and the disease(rog)in order to get the full health advantages of millets.

4.According to Ayurvedic literature, millets have been used as a dietary supplement as well as a therapeutic agent. So, use of millets is as ahar and auashadhboth; in a balanced way.

5.Millets can serve the several purpose of majorly three SDG to help in remove poverty via agriculture and to improve health and to maintain nutritional statistics.

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