AN ACCOUNT OF MILLETS: PAST, PRESENT AND FUTURE

Abstract

Cereals are the backbone of present day human diet. India is the world's second largest producer of major cereals like rice, wheat etc; yet the rank of India in Global Hunger Index 2023 is 107th out of 121 countries; published jointly by Welthungerhilfe and Concern Worldwide since 2006. Millets have been used as food as well as a therapeutic diet in *Ayurveda*. Since *Samhita kala.* Millets can be used as a preventive as well as a curative diet in *Ayurveda*, hence fulfill the main goal of *Ayurveda* of prevention first then cure. Millets have been staple diet in human history, but over past three decades the consumption of millets as direct food has declined significantly. Hence to revive the demand of millets globally and to decrease the burden on other cereals, the year 2023 has been declared as The International Year of Millet by UNGA. Millets possess infinite properties because of which Millets are termed as 'yesterday coarse grains' and today's 'nutri-cereals' [1]. Millets are considered to be 'future crops'; whose past must be known. Hence, present paper is an attempt to focus on the futuristic trends in Medical sciences on special emphasis to millets. The paper will throw a light on the literary sources of millets in *Ayurveda* in a chronological order, their properties and uses mentioned in different text along with their use in recent scenario.

Keywords: Millets, *Kudhanya*, *Ayurveda*, *Medoroga*, *Dhanyavarga,* UNGA

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I. INTRODUCTION

India is a country with diverse geographical distribution. From the land of Himalayas, to plain area of Punjab, from plateaus of Telangana to coastal areas of Eastern and Western Ghats, India possess different land topography with different types of crops and vegetables grown. As in past few years world had faced many problems like climate change, Covid pandemic, food insecurity etc. Millets are emerging as a ray of hope in the society to curb all the problems.

Millets are one of the oldest crops that have been cultivated thousands of years in different parts of the worlds. In Himachal Pradesh, millets are grown in various areas like Finger millet (*Ragi*) grown in Kullu, Mandi, Kangra and Sirmour districts , Foxtail millet (*Kangni*) largely grown in Kangra district., Proso millet (*Cheenak*) is traditional food and food habits in the Gaddi shepherd family of Chamba[2].

Millets are referred as coarse cereals, external texture which is not smooth. Millets are referred as smart food and are highly nutritious. Millets are rich source of protein, dietary fiber, iron and calcium content. Apart from high nutritious quality millets are turning out to be the global game of attaining sustainable development goals. From sustainable development point of view, millets contribute in curbing the consequences of climate changes, food insecurity, poverty and malnutrition. Millets are climate-resilient crops that can grow with less water and chemical inputs. Millets requires relatively less investments, low quality soils, resource and time than other crops. They can grow even in adverse conditions and are resistant to most of the pest and diseases. So millets can help ensuring economic growth of the farmers and society. Furthermore, millets require fewer resources to grow they can help reduce green house gas emissions and combat climate changes [3].

After the wave of Covid-19 man has brought significant changes in his lifestyle. However change in eating and dietary habits is one of them. As millets acts as immune modulator, helps prevent the infection and have anti-oxidant properties, the popularity and dietary benefits of millets have been increasing day by day. Millets are powerhouse of nutrients also called as neutri-cereals. Millets have low glycemic index thus have lesser impact on blood glucose level and have good defence in fight against diabetes. Apart from this millets are considered as high energy yielding nourishing food which helps in malnutrition.

As the world is moving towards civilization and advancement, the challenges faced by the society have also been increasing. India is emerging as a superpower since last decade yet the human development index of the country is very poor. India ranks second in child malnutrition incidences, with one third of malnourished children globally being Indian [1]. So there is need to promote the nutritional benefits of millet. To raise the awareness about the benefits and production of millets, 2023 has been declared as international year of millets by UNGA (United Nations General Assembly). Various seminars, workshop and cultural program being held all over the India to showcase the diversity of millets and to create awareness and increase production. India had notified millet as a nutritious cereal in April 2018 and has also been included under the Poshan Mission campaign [4].

II. MATERIAL AND METHODS

The current topic was selected based on a literature survey. The literature review was carried out using different *Ayurveda* texts mainly Nighantus, Charak Samhita, Sushrut Samhita, Ashtaang Hridya, Dravyaguna vigyana Vol III of PV Sharma and databases such as PubMed and Google Scholar as search engines.

1. **Millets Described In Nighantus:** Millets are described in *Dhanya varg* in different Nighantus of *Ayurveda* text.

- **Dhanwantari Nighantu** (Suwarnadi varga- Dhanyani)[5]

Table 1

S.No	Millets	Synonyms	Properties
1	***Kodrav***	*Kordush*,*Udalak*,*Vankodrav*	*Sheet virya, grahi, vish-pitta-kaphahar*
2	***Niwaara***	*Taapas, Munibhakat, Prasadak, Arnaydhanya, Rasik*	*Madhur, Snigdh, Pavitra, Pathya, Laghu*
3	***Shayamaka***	*Trinbeej, Munibhakshay, Gopriy, Sukumar, Raajdhanya, Trinbeejotay*	*Madhur, kashaye, Snigdh, Laghu, Sheet virya,Vaatvardhak, Kapha-pitta har, Sangrahi, Vishvikaar nashak*
4	***Priyangu***	*Kanguni, Tanguni, Kanguk, Cheenak, Pittandul, Asthisambhandhan, Kanghuni*	*Madhur, Ruchikarak, Kashayemadhur, Sheet, Vaatvardhak, Pittghan, Dahhar, Bhaganasthibhandhankrit*
5	***Yava***	*JOO, Akshat, Tikshanshuk*	*Ruksh, Sheet, Guru, Madhur, Sarak, Purishjanan, Vaatvardhak, Shukarjanan, Sathirtakarak, Sathairykar, Mutra-med-pitta-kaphajayet, peenas-swaas-kaas-twagaamyan*
6	***Jurna***	*Jurnah, Yonal, Yaavnaal, Yugandhar*	*Kapha-pitta har, Shukarvardhak, Mridu, Guru, Shittavirya, Ruksha, Vishtabhi, Apathaya for Guda vikaar.*

- **Sodhala Nighantu** [6]

Table 2

S.No	Millets	Properties
1	***Kangu***	*Ruksha, Hiima, Swaadu, Kashaye, Brihana, Guru, Vaatla, Kapha-pittaghan, Sandhanya, Alapmutarvitt*
2	***Kodrav***	*Badhvinmutar, Vaatla, Lekhan, Laghu, Kashaye, Viashmardi, Pitta-kaphahar, Raktpittashamak, Saparsh sheet, Grahi, Madhur, Ruksha, Sheetal*
3	***Uddalaka***	*Virya ushan, Lekhan, Vaatal, Laghu, Ruksha, Swaadu, Kashaye, Kaphajit, Badhamutravit*
4	***Nivara***	*Shaleshmal, Ruksha, Kashaye, Vaat, Hiim, Lekhan, Badhavinmutar, Swaadu, Pitthar , Laghu*
5	***Madhuli***	*Kapha-pittaghani, Snigdha, Vrishay, Sheetal, Kashaye, Laghu, Swalpmutara, Badhvitt*
6	***Shyamaka***	*Kapha-pittahar, Ruksha, Kashaye, Madhur, Sheet, Vatal, Badhvinnmutar, Laghu, Lekhanatamak*
7	***Nandimukhi***	*Hiim, Swadu, Pathaye, Laghu, Kashaye*

- **Madanpaal Nighantu (Dhanyaadi Varga)** [7]

  - **Describes millets under *Trindhanyas***: *Kangu, Shayamak, Niwar, Udaal, Nartak, Vartika, Todparni, Kodrav, Madhulika, Nabdimukhi, Venuyav, Priyangu, Kordush, Gavedhuk, Nal, Naali, Mukunduka, Varika.*
  - **Properties of *Trindhanyas*:** *Laghu, Swaadu, Katupaaka, Vilekhana, Ruksha, Ushna, Malavrodhak, Vaat-pittaprakopaka*

Table 3

S.no.	Millets	Synonyms	Properties
1	***Yava***	*Shuchi, Tikshanshuk, Nishuk, Atiyav*	*Kashay,Madhura,Ruksha,Shiat,Pitta-kapha Shamaka, Raktvikara Shamaka Pathya* in *vrana* just like *Tila. Budhivardhaka, Agnivardhaka, Lekhna, Malavrodhaka, Swarshodhaka, Prameha, Pippasaniwarka Vaatkaraka, Malvardhaka, Sathirta* and *Varnkaraka, Picchilla.*
2	***Nishpava***	*Raajshimbi*	*Pitta-rakta, Mutra and Dhugdhutpadak. Rechaka, Daahkaraka, Ushna, Guru, Shleshma shopha* and *Shukrnashaka,*
3	***Kanguni***	Types-*Pittandulika, Kangu, Priyangu, Karkati, Sitkangu, Musti, Raktkangu,*	*Pitta-shamak, Dhatuposhaka, Bhagansandhanaka, Guru.*

		Sothika, Cheenak, Kaakkangu, Shayamaka, Shankanguk, Shaali.	
4	***Kodrav***	*Kodo, Kuras, Kodrush, Udaal, Vankodrav*	*Sheetal, Malavrodhaka, Vishghana, Kapha-pittashamaka.*
5	***Niwaar (tinni*)**	*Uttika, Naadi, Munibrihi, Munipriya.*	*Sheetal, Malbandhak, Pitta Shamaka, Kapha-vata karaka.*
6	***Yaavnaal (jwaar, jondhari)***	*Devdhanya, Juholi, Juhala, Anala*	*Suswadu, Sheetala, Vaayukaraka, Kapha-pita Nashaka.*
7	***Gawedhuka***	*Karshni, Gojihwa, Aakarshni*	*Katu, Swaadvi, Krishtanashaka, Kapha Nashaka.*

- **Kaeydev Nighantu (Dhanyavarga)** [8]

Table 4

S.No	Millets	Synonyms	Properties
1	***Yava***	*Sitshuk,Tikshnshuk, Vaajipriya, Shuchi. Yav* without *Shuk* is known as *Atiyav* and green *Yava* is *Tokam*	*Madhur, Kashaye, Ruksha, Balkarak, Vrishya, Shiitvirya, Guru, Mridhu, Varnakarak, Anabhishyandi, Katu Vipaka, Swara- agnideepana, Vranaropaka, Badhmutr, Picchill,Medhya, Vaatmal Evum Sathairyekarak, Vilekhana, Prameha, Trishna, Vaata, Pinasa, Swasa, Kasa, Urusthambha, Kushtha, Charmarog hara*.
2	***Priyangu***	*Pittandulika, Kangu, Durjra.*	*Bhagan-asthi sandhankrit, Vaatkaraka, Brihana, Guru. Kanguni* is of 4 types- *Krishna, Rakta, Shweta, Pitta. Pitta Kanguni* is best, *Ruksha and Kaphanashaka.*
3	***Chinaakprbhitaye***	*Kaakkangu, Shayamaka, Trinbeejka, Kodrava, Kordusha, Udaalaka, Vankodrava*.	*Pittnashaka, Sheetala, Vishghana*
4	***Nartaka***	*Malinjaka, Nrityakunda,*	*Pittnashaka, Shita- virya.*

		Nartaka, Nartkundaka	
5	***Niwara***	*Uddhika, Uddi, Munipriya, Vanbrihi*	Same as *Nartaka* mainly *Kapha vardhak.*
6	***Yavnaala***	*Devdhanya, Jurnah, Tuhal, Anila, Taaniyaka, Jurnvika, Tinika, Janhuli.*	*Madhur, Ruksha, Raktpita-kapha Nashaka, Avrishya, Laghu, Shitvirya Kleda Nashaka, Vaatkaraka*
7	***Gavedhuka***	*Gojihwa, Vaarshika, Karshni*	*Katu Madhura, Krishtakarak* and *Kaphanashaka*

- **Priya Nighantu (Dhanyavarga)**[9]

Table 5

S.no	Millets	Properties
1	***Yava***	*Kashya- madhur, Ruksha, Lekhan, Malprabhutaam, Kaphaja Roga, Prameha, Medhoroghara*
2	***Madhulika***	Somewhat *Madhura, Kashaye-tikta, Laghu, Sheetvirya, Ruksha, Vatvardhaka, Pittta-shamaka. Jala awashoshni, Ashmari bhedana*
3	***Kanghu (kaghuni)***	*Atiruksha, Guru, Vaatvardhaka, Bhagansandhankara.* Its seeds resemble fruit of *Gandhpriyangu* that's why called as *Priyangu.*
4	***Chinaaka (chiina)***	One of *Kshudra dhanya.* Properties same as *Kanghu*.
5	***Shayamaka (sawa)***	*Ati- ruksha, Shita Virya, Dhatu Shoshaka, vata Vardhaka, Kapha-pitta Shamaka*
6	***Kodrav (kodo)***	*Shiit virya, Ruksha, Vata-vardhaka, Vibhandha karaka, Kapha-pitta Shamaka.*
7	***Gavedhuk (gavedhua)***	*Madhur-katu, Ruksha, Vata-vardhaka, Kapha-shamaka. Indriyahara, Krishtakaraka*.
8	***Niwar (teni)***	*Grahi, Shita Virya, Laghu, Grahni* and *Pramehroghara*
9	***Yaavnaal (jwara)***	*Madhur-kshaye, Shita virya, Ruksha, Shukarnashaka, Jalshoshaka, Vata vardhaka.*
10	***Vajaranna(baajda)***	*Madhur , Ruksha, Ushna Virya. Dushpachya, Balya, Punshtavnashaka, Kaphahar, vata-pitta Karaka.*

2. Millets Described In Brihattraiye

- *Acharya Charaka* described Millets under *Shookadhanya Varga* [10]

Table 6

Kordusha	*Gavedhuka*	*Mukunduka*	*Shivira*
Shyamaka	*Prashantika*	*Jhinti,*	*Utkata*
Hastishyamaka	*Ambha-shyama*	*Garguti,*	*Jurnaha*
Neewra	*Lohitaanu*	*Varuka*	*Yava*
Toyaparni	*Priyangu*	*Varaka,*	*Venuyava*

- *Acharya Shushruta* mentioned Millets under *Kudhanya Varga* [11]

Table 7

Kordusha	*Udalaka*	*Gavedhuka*
Shyamaka	*Priyangu*	*Varuka*
Neewara	*Madhulika*	*Todyaparni*
Shantanu	*Nandimukhi*	*Mukunduka*
Varaka	*Kuruvinda*	*Venuyava*

- *Acharya Vagbhata* has described Millets under *Trindhanya* which are following[12]

Table 8

Kangu	*Shyamaka*
Kodrav	*Priyangu*
Neewara	*Joo*

3. Millets Described In Pv Sharma [13]

Table 9

Millets	Botanical name	Family	Rasa	Guna	Virya	Karma
***Kodrav* (Kodo Millet)**	*Paspalum scrobiculatum* Linn.	Poaceae	*Kashaya Madhura*	*Laghu Ruksha*	*Shita*	*Vaatvardhaka Kapha-pitta Shamaka*
***Shayamaka* (Barnyard Millet)**	*Echinochloa frumentacea* Linn.	Poaceae	*Kashaya Madhura*	*Laghu Ruksha*	*Shita*	*Vaatvarshaka Kapha-pitta Shamaka*

Kangu **(Itallian millet) (Foxtail millet)**	*Setaria italic* Linn.Beauv	Poaceae	-	*Guru Ruksha*		*Vaat-kapha Nashaka, Brihana, Bhagansandhankaraka,* Beneficially for *cattles*
Cheenaka **(Common millet)**	*Panicum miliaceum* Linn.	Poaceae		*Guru Ruksha*		*Vaat-kapha Nashaka, Brihana*
Jurna **(Great millet)**	*Sorghum vulgare* Pers.	Poaceae	*Kashaya Madhura*	*Laghu Ruksha*	*Shita*	*Kapha-pitta Shamaka, Shukaranashaka, Kaledhara*
Madhulika **(Finger millet)**	*Eleusine coracana* Linn	Poaceae	*Kashaya Tikata Madhura*	*Laghu Shita*		*Tridoshshamak,* Mainly *Pittashamak, Triptikarak*
Vajaranna **(Pearl millet)**	*Pennisetum typhoides* Burm.f.Stapf. &Habbard	Poaceae	*Madhura*	*Ruksha*	*Ushana*	*Kapha-vata nashaka,Balya, Punstavhar, Durjara*
Yava **(Barley)**	*Hordeum vulgare*	Poaceae	*Madhura Kahaya*	*Ruksha Ishat Guru*		*Kaphashamaka,Vaatvardhak, Purishjanana, Balaya, Sathariyekrita*
Gavedhuka **(Job's tears) (Adlay millet)**	*Coix lacryma*	Poaceae	*Kahaya Madhura*	*Laghu Ruksha*	*Shita*	*Kaphanashaka, Krishtakaraka*

4. Millets Described In Various Ayurvedic Texts

Table 10

Millets	Dravyaguna Vigyana PV Sharma	Charaka Samhita	Sushruta Samhita	Ashtanga Haridya	Dhanvantri Nighnatu	Shodal Nighantu	Kaideva Nighnatu	Madanpala Nighnatu	Priya Nighnatu
Kodrava	+	+	+	+	+	+	+	+	+
Shyamaka	+	+	+	+	+	+	-	-	+
Kangu	+	-	-	+	-	+	+	+	+
Cheenaka	+	-	-	-	-	-	+	-	+
Jurna	+	-	-	-	+	-	+	+	+
Ragi	+	-	+	-	-	+	-	-	+
Vajaranna	+	-	-	-	-	-	-	-	+
Yava	+	+	-	+	+	-	+	+	+
Gavedhuka	+	+	+	-	-	-	+	+	+
Venuyava	-	+	+	-	-	-	-	-	-
Varaka	-	+	+	-	-	-	-	-	-
Varuka	-	+	+	-	-	-	-	-	--
Priyangu	-	+	+	+	+	-	+	-	-
Niwara	-	+	+	+	+	+	+	+	+
Shantanu	-	-	+	-	-	-	-	-	-
Udalaka	-	-	+	-	-	-	-	-	-

III. NUTRITIONAL VALUE OF MILLETS

Table 11

Nutrient values	Kodo [14]	Barnyard [15]	Foxtail [1]	Porso [1]	Sorghum[1]	Finger [1]	Pearl[1]	Barley [1]	Job's tears [16]
Carbohydrates	58g	72g	-	-	-	-	-	-	-
Proteins	8.3g	10g	11.7g	11g	11g	7.3g	14.5g	11.5gm	18g
Fat	1.4g	3g	3.9g	3.5g	3.2g	1.3g	5.1g	2.2g	7g
Crude Fiber	9.0g	7g	7g	9 g	2.7g	3.6g	2.0g	5.6g	3g
Calcium	27 mg	11mg	0.01g	0.01g	0.04g	0.33g	0.01g	0.04g	25g
Phosphate	188mg	21 mg	0.31g	0.15g	0.35g	0.24g	0.35g	0.56g	-
Potassium	-	195mg	0.27g	0.21g	0.38g	0.43g	0.44g	0.50g	-
Iron	0.5mg	1.5mg	32.6g	33.1g	50.0g	46.0g	74.9g	36.7g	5mg
Zinc	-	1.2mg	21.9g	18.1g	15.4g	15g	29.5gm	23.6g	-
B1 Thiamine	0.33mg	-	0.48mg	0.63mg	0/.46mg	0.48mg	0.38g	0.44g	0.28mg
B2 Riboflavin	0.1mg	-	0.12mg	0.22mg	0.15mg	0.12mg	0.22g	0.15g	0.19mg
B3 Niacin	0.2mg	-	3.70mg	1.32mg	4.84mg	0.30mg	2.70g	7.20g	4.3mg
Phenols	-	-	106mg	-	43.1mg	102mg	51.4mg	16.4mg	-

Figure 1: Kodrav (*Paspalum scrobiculatum* Linn.*)(Kodo Millet)* [17]

Figure 2: Cheenak (*Panicum miliaceum* Linn.)(Common millet) [18]

Figure 3: *Kangu* (*Setaria italic* Linn. Beav.) (Itallian/ Foxtail Millet) [19]

Figure 4: *Shayamak* (*Echinochola frumentace*) (Barnyard Millet) [20]

Figure 5: *Madhulika/ Ragi* (*Eleusine coracana* Linn.) (Finger Millet) [21]

Figure 6: *Bajra (Pennisetum typhoides* Burm.f.Stapf.&Habbard) (*Pearl Milet)* [22]

Figure 7: Jurna (*Sorghum vulgare Pers.) (*Great Millet) [23]

Figure 8: Yav *(Hordeum vulgare)* (Barley) [24]

IV. DISCUSSION

As described in *Ayurveda* texts millets are beneficial for *Kaphaja*, *Pittaja* and *Raktaja Roga* and as millets aggravates *Vata* they have to be avoided in such conditions. With this understanding millets are beneficial for *Sthoulya, Prameha, Medoroga, Atisaara, Twaga Roga* and other *Santarpanjanya Vyadhi*. Millets should be advised according to individual *Jatharagni* (digestive power) as they possess *Guru* and *Ruksha* properties which makes them difficult for digestion. But millets also possess *Lekhana* and *Kledashoshana* properties which makes them helpful in treating *Santarpanjanya Vyadhi* (disease due to over nourishment of single or multiple tissues).As mentioned in *Ayurveda* text few millets are *Laghu* in nature which can be understood as the after effect of digestion they imparts lightness.Though the specific indications of each, millets are not mentioned but looking at their *Guna* and *Karma* , indications can be derived.

Kodrava (Kodo Millet) is mainly described as *Grahi* (absorbs excessive fluids and helps for normal formation of faeces), *Baddavitkara* (compactness of faeces), *Rakta-pitta-kapha Shamaka, Lekhna, Vishamardi* (pacifies effects of poison).

According to studies, Kodo millet significantly reduces glycated hemoglobin levels, triggers production of liver glycogen, stimulating instant levels of energy in diabetics, brings down the levels of bad cholesterol, regulate blood pressure, helps in sugar control and celiac disease. Kodo millet is a time tested home remedy for healing external wounds [25].

Shyamaka (Barnyard Millet) can be indicated in *Atisara* (Diarrhea), *Grahani* (Irritable Bowel Syndrome) , *Santarpan Janya Vyadhi* (Diseases due to over Nourishment) like *Sthoulya* (Obesity), *Prameha* (Diabetes Mellitus), *Twaka Roga* [26].

In a clinical study Ugare et al. (2014), confirmed lower glycemic index in type-2 diabetic group during regular consumption of Barnyard millet [27].

Kangu (Foxtail Millet) has *Brihmana* (Nourishing) , *Ruksha* (reduces unctuousness), *Alpamutra-vitta* qualities. It is indicated in *Asthi-bhagna* (Bone fractures) as it has *Bhagna-asthi sthankrit* properties.

Foxtail millets are an excellent source of iron and calcium which is why it is indicated in chronic conditions like osteoporosis, arthritis, spondylitis etc. It strengthens nervous system, boosts cardiac health, manages diabetes, build immunity and promotes digestion [28].

Cheenaka (Proso/Common Millet) is *Vatta-kapha Hara* (Pacifies vatta and Kapha), *Brihmana* (Nourishing). *Shimanuki* S et al (2006) [29] reported that Proso millet has ability in increasing the HDL levels and thus may have strong protective effects against the risk of Coronary Heart Disease development.

Madhulika/Ragi (Finger Millet) is *Tripatikaraka* (fulfilling), *Vrishya* (aphrodisiac), *Snigdha* , *Balya* (Increases strength), *Ashmari-bhedana* (removes stone). *Ragi* contains an amino acid called Tryptophan which lowers appetite and helps in keeping weight in control [33].

Kumari PL et al. (2002) [30] reported that Finger millet have potential against hyperglycemia in Non-insulin dependant Diabetes Mellitus. Srivastava K et al. (2010) [31] reported Finger millet is storehouse of nutrients.

Jurna/Yavanaala (Great Millet) is *Trishnaghna* (Pacifies thirst), *Raktapitta Shamaka* (Pacifies *Rakta* and *Pitta*), *Sthoulya* (Obesity), Pacifies *Kapha*. Shen EL et al.(2015) [32] reported anti-obese and anti-diabetic activity of Sorghum.

Vajaranna (Pearl Millet) is *Balya* (Nourishing), *Punstavhara*, *Durjara* (difficult for easy digestion). Pearl millet is recommended for curing stomach ulcers. The lignin and phytonutrients in millet act as strong antioxidants thus preventing heart related diseases. Pearl millet contains high concentration of magnesium which helps reduce severity of respiratory problems for asthma patients and is also effective in reducing migraine attacks[33]. *Yava* (Barley) is indicated in *Peenasa, Shwasa, Kasa, Urusthambha, Kandaroga, Twaga Roga.*

This review also enlightens about the contra-indications of Millets. As most of the Millets are *Ruksha* and *Vaata-Vardhaka* they should not be advised in *Vaata Prdhana Vyadhi* like *Sandhi-Vata, Shoola, Karshya* etc. And due to *Durjara* (difficult in digestion) property they should not be used in *Ajeerna* (indigestion), *Mandagni* (low digestion power)

and *Vibandha* (Indigestion because of *Vata* that leads to bloating). In *Vata* vitiated conditions, Millets have to be used by doing *Samskara* (Processing) which helps in balancing *Vata* and eases digestion by soaking Millets in warm water, adding *Ghee*, *Deepan-pachana Dravyas* etc. Also the *Matra* should be regulated wisely and to be consumed in moderate quantities and frequency. As Millets are not included in *Nitya Sevaniya Ahara*(foods to be used regularly) in *Ayurveda* they should not be consumed on a daily basis[26].

V. CONCLUSION

Millets energy values are similar to staple cereals. Like many other cereals, millets are high in carbohydrate and nutrition, making them useful components of dietary and nutritional balance in foods. They must be considered as today's nutricereal but in future they have the potential to replace cereals because of their tremendous health benefits. But after considering the above properties of millets in different *Ayurvedic* literature it can be concluded that millets are not suitable for every individual. In spite of various indications there are some contraindications also. So before suggesting the use of millets proper *Prakriti Pariksha* and analysis of Jatharagni must be done. Hence millets can be used judiciously after proper *Rogi* and *Rog Pareeksha* so that one can utilize proper benefits of millets. In a clinical study with human volunteers, Ugare et al. (2014), confirmed a lower glycemic index (GI) in type 2 diabetic groups during regular consumption of barnyard millet meal.

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