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Millets and its benefits according to Ayurveda

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ABSTRACT

In the recent days we have been seeing a lot of buzz and a lot of researches been carried out regarding the usage of the millets and its potential uses mainly with regards to its disease preventing properties especially in cases such as Diabetes, Hypertension, and even in Cancer. In Kannada, millets are called as *Siridhanya* which means that which is rich in useful and essential properties, in *Ayurveda* millets are called as *Kudhanya* or *Kshudradhanya*, it is called so because these grains belong to grass species and they usually does grow to a very lengthy height rather confined to a smaller heights, hence the name *Kudhanya* or *Kshudradhanya*. In the recent days even the Karnataka Government has understood the importance of millets and have started to promulgate by dedicating a separate day calling a 'millets day' to showcase its important health related values. Apart from the recent discoverers, Ayurveda has mentioned about the millets in the name of *Kudhanya* or *Kshudradhanya* many years before itself. We can find its mentioning in *Charaka Samhitha*, and other *Nighantus* such as *Bhavaprakasha Nighantu*, *Dhanvantari Nighantu* etc. Hence this article highlights about the importance of Millets and its mentioning about its properties in *Ayurveda* and its mode of action in several diseases.

Key words: *Millets, Siridhanya, Kudhanya, Kshudradhanya, Shree Anna.*

INTRODUCTION

Ayurveda is a science which talks about maintaining the healthy status of an individual, it promulgates by mentioning about the *Ahara* and *Vihara*, we even can find references about the importance of food being prioritized, *Acharya Charaka* mentions that if an individual takes care of his food habits then there is no need for intake of medicines, among many ideal foods that have been mentioned in *Ayurveda*, *Kshudrashanya* or *Kudhanya* is also one among them, where in it constitutes with rich nutritional benefits and also has the capability of preventing some of the diseased condition also.

Government of India also noticed the importance of millets and encourages the people to grow these millets and it is also noticed that India is one among the top most countries next to Nigeria in production of millets throughout the world. The most important aspect of this millet is that these crops doesn't need a lot of water and doesn't need high maintenance for their production, yet it possesses high nutritional values.

Types of millets produced in India

One can find 7 varieties of millets being grown in India[1]

- Finger millet.
- Kodo millet.
- Pearl millet.
- Foxtail millet.
- Barnyard millet.
- Little millet.
- Proso millet.

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ISSN: 2456-3110 REVIEW ARTICLE June 2024

Some of the types of *Kshudradhanya* mentioned in different *Nighantus* of Ayurveda

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

Properties of *Kshudradhanya*

In Ayurveda also there is a mentioning of millets in the name of *Kshudradhanya* and we can see its mentioning in *Nighantus* such as *Bhavaprakasha*, *Kaiyyadeva Nigantu* and also in *Charaka Samhitha*.

The properties of some of the *Kshudradhanya* mentioned in *Ayurveda* are:

Acharya Priyavat Sharma has mentioned about *Kshudra Dhanya* elaboratively.[2]

Sanskrit name	English name	Botanical name	*Guna*	*Rasa*	*Virya*	*Karma*
Kodrava	Kodo millet	*Paspalum scrobiculatum*	*Laghu, Ruksha*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphapitta Shamaka, Shoshaka*
Shyamaka	Barnyard millet	*Echinochloa frumentaceae*	*Laghu, Ruksha*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphapitta Shamaka, Shoshaka*
Neevara	Wild rice	*Hygroryza aristata*	*Ruksha, Shita*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphapitta Shamaka,*
Gavedhuka	Job's tears	*Coix lacryma*	*Ruksha, Shita*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphapitta Shamaka,*
Kangu	Italian millet	*Setaria italica*	*Guru, Ruksha*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphanashaka, Brihmana, Bhagnasandhanaka*
Chinaka	Common millet	*Panicum miliaceum*	*Guru, Ruksha*	*Kashaya-Madhura*	*Shita*	*Vatavardhaka, Kaphanashaka, Brihmana,*
Jurna	Great millet	*Sorghum vulgare*	*Laghu, Ruksha*	*Kashaya-Madhura*	*Shita*	*Kaphapitta Nashaka, Shukranashana, Kledahara*
Madhulika	Finger millet	*Eleusine coracana*	*Laghu*	*Kashaya-Tikta-Madhura*	*Shita*	*Triptikaraka, Pittashamaka, Tridosha Shamaka*
Vajranna	Pearl millet	*Pennisetum typhoides*	*Ruksha, Ushna*	*Madhura*	*Shita*	*Kapha-Vatanashaka, Balya, Pumsatvahara*
Mahakaya	Maize	*Zea mays*	*Ruksha*	*Madhura*	*Shita*	*Vatavardhaka, Kaphapitta Shaman, Vishtambhi.*

All of the *Dravya* in *Kshudra Varga* belongs to the family Graminae, Most of the *Dhanyas* present in *Kshudra Dhanya* possesses *Guru, Laghu, Ruksha Guna, Kashya, Madhura Rasa, Shita Virya*, and does *Kaphapitta Shamana, Dravyas* such as *Kangu* does *Bhagnasandhanakarma, Vajranna* does *Pumsatvahara* and *Mahakaya* does *Vishtambhi* action.[3]

In *Bhavapraksha Nighantu* the explanation regarding *Kshudradhanya* has been mentioned in the *Dhanyavarga* chapter, where in the author explains about the *Kshudra Dhanya* as - *Kshudra Dhanya* is also called as *Kudhanya* or *Trinadhanya*, almost all the *Kshudra Dhanya* possesses *Gunas* such as *Ushna, Laghu, Ruksha, Madhura Rasa, Katu Vipaka, Lekhana* and *Kleda Shoshana* as its *Karma* and is *Vatakara*, with its excess consumption it might lead to *Baddha Vit,* and it can be used for *Kaphanashana* and in *Raktavikara.*[4]

Apart from *Kshudradhanya* present in Priyavath Sharma, we can find some of the additional *Kshudra Dhanyas* in *Bhavaprakasha* such as, *Charuka (Sharabeeja* & *Vamshayava (Kusumbha Beeja).*[5]

ISSN: 2456-3110 REVIEW ARTICLE June 2024

Name	*Guna*	*Rasa*	*Karma*
Charuka (Sharabeeja)	*Ruksha, Shita, Lagu*	*Kashaya, Madhura*	*Vatakara, Kaphahara, Raktapitta Nashaka*
Vamshayava	*Snigdha, Shita, Guru*	*Madhura, Kashaya*	*Vata-Kaphahara, Raktapitta Nashaka*

The author *Kaiyyadeva* also mentions about the *Trunadhanya*, they are - *Sitakanguka, Shyamaka, Kodrava, Uddala, Nartaka, Gavedhuka, Devadhanya, Vruka, Varittika, Udri, Naadi, Toyaparni, Mukunda* and *Shimbira.*[6] Although the information regarding all the above mentioned *Trinadhanya* is not available. The information provided in *Kaiyyadeva* is almost similar to that of *Bhavapraksha* except the author *Kaiyyadeva* has mentioned the synonyms also along with the *Guna-Karma*. The *Trinadhanya - Madhulika* mentioned in *Bhavaprakasha* is mentioned as *Nartaka* in *Kaiyyadeva Nighantu*.

In *Ashtanga Hridaya* also we can similar explanation in the chapter of *Annaswarupavijnaniya Adhyaya*. Wherein the author mentions about 4 varieties of *Trna Dhanya.*[7]

Name	English name	Botanical name
Kanguka	Indian millet/Foxtail millet	*Seratia italic*
Kodrava	Kodo millet	*Paspalum scrobiculatum*
Neevara	Bengal wild rice	*Hygroryza aristata*
Shyamaka	Little millet	*Panicum sumatrense*

Sushrutha in 46th chapter - *Annapaanavidhi Adhyaya* has mentioned about *Kshudra Dhanya*as *Kudhanya*. Sushrutha has mentioned about 16 varieties of *Kshudra Dhanya - Koradushaka (Kodrava), Shyamaka, Nivaara, Shantanu, Varaka, Uddlaka, Priyangu, Madhulika, Nandimukhi, Kuruvinda, Gavedhuka, Sara, Varuka, Todaparni, Mukundaka, Venuyava.* Among all these varieties the author has explained the *Guna Karmas* of *Priyangu, Madhuli, Varuka* and *Venuyava.*[8]

Acharya Charaka in the 26th chapter *Sutrasthana, Annaswarupa Adhyaya* has mentioned about *Kshudradhanya* by mentioning about *Koradusha* and *Shyamaka* and also mentioned some varieties such as - *Hastishyamaka, Neevara, Toyaparni, Gavedhuka, Prashantika, Ambhashyamaka, Lauhitya, Anu, Priyangu, Mukjunda, Jhinti, Garmuti, Varuka, Varaka, Shimbira, Utkata* and *Jurna.* And the author mentions that all these varieties has similar properties as *Shyamaka.*[9]

Mode of action of different *Kshudradhanya* in different diseases

Diabetes mellitus

Diabetes mellitus is a chronic disorder with hyperglycemia being the characteristic feature. The efficiency of insulin and glucose receptors in the body is increased by the significant levels of magnesium content present in millets and help in preventing diabetes.

Sorghum contains slow digestible starch in a good amount which in turn helps in increasing the time period of the digestion and absorption of carbohydrates in the intestine. Also, sorghum is rich in fiber content and it has a low glycemic index which in turn helps in reducing the blood sugar level. Even pearl millet and finger millet shows a similar activity that it has lower glycemic index and helps in digesting the food slowly and in turn release the glucose in t the blood stream in a steady pace. And also in a study it was found that the polyphenols in the finger millet were the major factor contributing for the anti-diabetic and anti-oxidant property.[10]

Gastro-intestinal disorders

Millets can also help in preventing some of the gastrointestinal disorders like gastric ulcers, bloating, caelic diseases, constipation etc. with the presence of rich fiber content in it millets can have a very positive effect on these above mentioned disorders.[11]

ISSN: 2456-3110 REVIEW ARTICLE June 2024

Cancer

Presence of the fiber content in the millets is the contributory factor for the prevention of deadliest diseases like cancer especially colon and breast cancer. It is also documented that fibre content present in sorghum can prevent oesophageal cancer than in those individuals who consume maize or wheat. Recent researches has also shed the light about the importance of fiber content in the prevention of breast cancer.[12]

Anti-oxidant property

Apart from these Millets also has their effect on neutralizing the free radicals that is the anti-oxidant properties. It was found that there is presence of nearly 40-50 phenolic compounds such as phenolic acid, flavonols etc. are present and hence it can act as a natural antioxidant.[13]

CONCLUSION

With many of the Indian population is suffering from non-communicable diseases like diabetes mellitus and hypertension, it is high time that we concentrate more on what we eat, our food habits etc. And now with the recent research about the millets it is the apt time for the people to switch their dieting habits to save themselves from against these non-communicable diseases such as diabetes mellitus, hypertension, cancer and other metabolic disorders.

Almost all the authors in the field of *Ayurveda* has mentioned a similar set of *Gunas* to describe *Kshudra Dhanyas* in general that is they are - *Laghu, Ruksa, Ushna Guna, Kashya-Madhura Rasa, Shita Virya* in nature and helps to alleviate the *Kapha Vata Dosha*. With this we can come to the understanding that it can be used in disorders where in there is involvement of *Kapha* and *Vata Dosha*.[14]

The Food and Agricultural Organization (FAO) of the United Nations organized an official Opening Ceremony for the International Year of Millets - 2023 at Rome, Italy.[15]

The main reason for this initiative is due to 2 reasons one is the economical reason and the other is based purely based on its nutritional benefits.

It is easier to grow millets because it can be cultivated even in marginal lands in dry areas, since it is photo-insensitive in nature and can be cultivated in tropical, subtropical and temperate regions, and also it will not take a lot to invest in the cultivation of the millets. They are less expensive and also more superior to the traditionally consumed foods such as rice and wheat which rather contains high carbohydrate levels, in the contrary millets contain high concentration of protein, fibre, vitamins, and minerals.[16]

Mainly the millets are a rich source of calcium, and magnesium. With this a country as a whole can prevent many metabolic diseases especially among women and children.[17]

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ISSN: 2456-3110 **REVIEW ARTICLE** June 2024

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