

YAVA (BARLEY-HORDEUM VULGARE) - A FOOD AND PANACEA***¹Dr. Harshitha K. J. and ²Dr. Gurubasavaraj Yalagachin**

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Article Received on 02/07/2017

Article Revised on 23/08/2017

Article Accepted on 13/08/2017

ABSTRACT

A well planned diet and proper dietary practices plays a major role in promotion of health. *Yava* is in practice since ancient period due to its rich nutritional entities and various therapeutic benefits. This paper reviews the identity of *Yava*, its uses, nutritional elements, pharmacological actions, its therapeutic approach as a diet (Pathya), scientific evidences that can re-establish *Yava* as a food in both healthy and ill. Hence *Yava*(Barley) can be an Ahara Dravya used in protective, promotive and curative perspective of our health.

KEYWORDS: *Yava, Pathya, scientific evidences.***INTRODUCTION****“Sarvam Anya Parityajya Shariram Anupalayeth”^[1]**

The protection and promotion of Shareera (physical and mental body) has been a prime motto of Ayurveda. The means for the same are Ahara, vihara, Achara and Vichara. The Human body, said to be the Annamaya Shareera is the resultant of nurturing by Ahara.^[2] Hence, appropriate understanding and application of the concept of food as Pathya (therapeutic diet) plays a major role in the accomplishment of objective of Ayurveda. *Yava* is one such ancient cereal emphasized in various classical texts, as therapeutic food in both illness and wellness condition. Recent scientific studies conducted on *Yava* have proved its significance as Pathya (therapeutic diet) and have established its panacea features in various ailments.

YAVA (BARLEY- HORDEUM VULGARE)

Yava is a well known ancient cereal crop belonging to Poaceae family. It makes upto 12% of total cereal production and owns the fourth position after wheat, rice and maize.^[3] It is used in a wide range in Indian system of medicine (Ayurveda) and described under Shukadhanya Varga.^[4] The cereal description is available since times of Vedas and Puranas (Upanishads, Shatapata brahmana), Atharvaveda, Agnipurana. The usage of *Yava* both as Pathya & Oushadha is established in ancient texts and modern research experiments.

Pharmacodynamics of *Yava* as per Ayurveda^[5,6]

Rasa (Taste): Madhura(sweet), Tikta(bitter), Kashaya(astringent) **Rasa Guna** (attributes): Laghu(light), Ruksha(dry), Pichila(slimy), Mridu(soft), Sara(flows easily) **Virya**: (potency): Sheeta(cold) **Vipaka**: (end product): Katu(pungent) **Doshaghnata**(effect on Doshas): Kaphapittahara, Vatahara **Mala prabhava**: Bahupurishakara, Mutradoshahara **Karma**(effects on body): Lekhana(scraping effect), Medohara(eliminates excess fat accumulated in the body), Vrishya (acts as an aphrodisiac), Balya, Sthairyakaraka(improves strength), Varnya(increases complexion), Swarya(helps to gain good voice), Agni/Agnideepana(increases appetite and metabolism), Kasa-Shwasa Pinasahara(remedy for cough, breathlessness and rhinitis), Kantarogahara(eliminates throat infections), Trishnahara(indicated in dehydration), Twakrogahara(eliminates skin infections, diseases), Vrane Pathyam(a therapeutic diet wounds), Urustambahara(relieves stiffness over thigh regions), Pramehagna(Controls and prevents Diabetes Mellitus).^[6]

Composition of *Yava*

The composition and properties of barley vary with the cultivator and various environmental factors. Barley consists of starch, sugars, fats, proteins, vitamins and minerals and soluble dietary fibre as a major component. It also contains polyphenols, caffeic acid, p-coumeric acid, ferulic acid and flavonoides.^[7] Percentage of nutrients present in 100gm of raw *Yava* is illustrated below.^[6]

Carbohydrates	78%	Vitamins	Niacin and vit B ₆ as major component
Proteins	10%	Minerals	Manganese 63% Phosphorous 32%
Fats	1%	Energy	352kcal

Therapeutic benefits of Yava as illustrated in various Ayurveda texts

Yava as Pathya

1. In Swastha: (healthy individual)

* *Yava* should be taken with wheat and milk.^[11]

2. Jwara

* In Intermittent fever (Vishama Jwara) edible preparations of *Yava*, Ghrita and wine are advised.^[10]

* In Kaphaja Jwara *Dehusked Yava* should be fried and small pieces of it should be consumed.^[9]

3. Kapha predominant persons

* Yavagu prepared from *Yava* boiled with Mahatpanchamula Dravyas.^[9]

4. Vibandha (Constipation)

* *Yava* fried with ghee and processed with Pippali and Amalaki.^[9]

5. Raktapitta (bleeding disorders)

* Food prepared from *Yava* and Kola together with Kulatha Yusha or Mamsa Rasa(meat soup) or Yavagu prepared is added with Saindhava is administered with yava, Kulatha, Mamsa (Yusha /Rasa) devoid of Sneha or the same Rasa added with Anna(rice) is administered.^[12]

6. Prameha (type2 Diabetes Mellitus)

* *Yava* Mantha(flour mixed with water and churned),

* Kashaya form(decoctions),

* *Yava* Lehya(linctus),

* *Yava* Odana (cooked Yava-without adding any unctuous articles),

* Vaty (Yava porridge),

* *Yava* Saktu (roasted corn flour) and Apupa (pan cakes), all the above mixed with meat soup (animals of arid region) is indicated as Pathya Kaphaja Prameha:

* Yava mixed with honey,

* Yava soaked overnight in Triphala should be taken mixed with honey. This acts as refreshing diet (Tarpaka).^[13]

7. Shosha (Tuberculosis)

* Soup of meat of goat added with Yava, Kulatha, Ginger, Dadima, Amalaka and ghee is advised as diet.^[14]

* Arka and Guduchi bhasma is added with 4 times of water and mixed well, its boiled till its reduced to half. Yava is soaked in this water overnight and then the flour prepared out of this yava is used in various food preparations.^[15]

8. Kshatakshina (phthisis)

* Mantha prepared out of roasted *Yava* flour added with honey /ghee.^[16]

9. Arshas(piles)

* Food prepared from Shashtika Shali, *Yava*, Godhuma, added with Ghee consumed along with either milk, soup of Nimbi or Patola.^[17]

10. Kushta(skin diseases)

* Food prepared from old rice, Shastika, *Yava*, Godhuma with Mudga Yusha /Adhaki yusha or similar pulses, or along with Mandukaparnyadi Sidha Ghrita or with Sarshapa Taila.^[18]

11. Hikka- Shwasa- Kasa (respiratory ailments)

* Preparations from old barley (*Purana Yava*), taken along with meat soups of domesticated animals or along with Masha Yusha.^[19]

12. Shvayathu (edema)

* Old *Yava* boiled with decoction of Dashamoola added with very little salt and fats, taken in small quantities cures edema.^[9]

* Patients of Shotha should partake food prepared from *Yava* or Godhuma along with soup of Mudga, processed with Yavakshara, Pippali, Maricha, and Sringavera without salt and with little of Ghee or oil.^[20]

13. As a nutritional supplement: Vidarikanda, Godhuma, *Yava*(1 part each), Sita (2 parts), Pippali(1/20th part) mixture of these(Karshyahara Yoga) taken with Ksheera, Ghrita, Madhu and Sharkara acts as Brihmana and Deepana and improved the general health in malnourished children.^[21]

14. In Nature Cure: The supernatant portion of boiled barley water is used as diuretic and advised during fasting. (approximately 250 ml or 1 cup twice a day).

Therapeutic benefits on various systems of human body^[8]

* It prevents gallstones	* Prevents urinary tract infections
* Controls type 2 DM	* Protects against cancer
* Improves immunity	* Prevents asthma and other respiratory disorders
* Lowers cholesterol	* Beneficial in anaemia patients
* Aids in weight loss(anti obese)	* Prevents bone disorders
* Aids in digestion	* Works as toxin cleanser
* Indicated in calculi	

The Following researches on Yava establish the scientific evidences of the properties and actions of Yava

Immunity (Bala):^[22] The study conducted on barley soluble dietary fibre influenced the host immune system and increased the resistance against invading pathogens

Cholesterol lowering activity(Lekhana karma)^[24] A clinical study conducted on 21 hypercholesterolemic men (aged 30-59 yrs) showed significant fall in both plasma total cholesterol and in low density lipoprotein cholesterol, concluding that the barley dietary fibre is more effective than wheat dietary fibre in lowering the blood cholesterol.^[25]

Aids in weight loss; anti – Obese (Medohara, In Sthoulya):^[26] An In vitro and In vivo study showed that the oral administration of aqueous extract of hulled barley prevented weight gain in ovariectomised female rats, The Biochemical marker compounds- coumaric acid and ferulic acid confirmed the anti-adipogenic actions and the Inhibition of adipogenesis.^[27]

Aids in digestion and metabolism (Agnideepana): Barley administration increased the gut hormones and improved appetite control in a clinical study carried out on 20 healthy individuals and regulation of metabolism was also noted.^[28]

In type 2 Diabetes Mellitus (Prameha):^[6] Barley and wheat were investigated as the natural alpha glucosidase inhibitors and having potent inhibitory activity using an animal study against alpha glucosidase, maltase enzymes. The rat α -glucosidase, maltase, and sucrase inhibitory activities of barley were increased with an increase in the added tea catechin.^[29]

Antibacterial activity (Krimihara):^[30] An experimental study on antibacterial activity of barley showed the inhibition activity on 5 of the pathogenic bacteria (e.coli, s.typhi, s.aureus, serratia spp., klebsiella pneumonia). The presence of 4 phytochemical compounds of barley were responsible for the inhibitory effect.^[31]

On Cardiovascular System (Hridroga): The biological activities of specialty barley extracts like antioxidative capacity, xanthin oxidase inhibition activity, angiotensin converting enzyme inhibition activity were established in an experimental study.^[32]

Anti oxidant property of barley (Amahara):^[33] An experimental study on the effect of traditional cooking, roasting and germination on the antioxidant capacity of Maxican barley showed that cooking and roasting barley extracts increase the total phenolic content. Germinated seeds subjected to roasting, cooking and unprocessed barley grains showed higher anti oxidant activity.^[34]

In jaundice (Kamala): Barley was used as a phytotherapy and a randomized control trial on (70 term)

infants with jaundice was conducted showed significant decrease in indirect bilirubin and effective in preventing severe complications due to bilirubinemia. Hence barley as a complementary therapy to treat jaundice was proven.^[35]

Anti inflammatory action (Shothahara)^[36] An experimental study designed to explore the scientific mechanism of barley showed the likely mechanisms responsible for anti inflammatory and cardiovascular effects of *Hordeum vulgare*. *Hordeum vulgare* exhibited activities against human platelet agonists, inhibited both COX and LOX pathways.^[37]

DISCUSSION

In various research studies, spectrum of therapeutic and nutritional properties of Yava have been established. In leading life style disorders like obesity, Diabetes Mellitus, hyperthyroidism, Yava can be the cereal of choice. Usage and cultivation of Yava is slowly getting reduced in current era. There is a need to propagate the knowledge of Yava among cultivators and common public. Idea of age old, traditional methods of preparations using Yava are to be publicized among common people.

CONCLUSION

The scientific evidences reestablish that Yava being an ancient cereal can be used on daily basis as regular food and helps in both Prevention of diseases and promotion of health. It is therapeutically beneficial in various clinical conditions and in apparently healthy individuals, Prakriti based Yava preparations can be advised. When compared to genetically modified wheat and other food crops, Yava acts as an ideal food and panacea.

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