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"A Review Article on Yava (*Hordeum vulgare* L.) – Nitya Sevaniya Aahara Dravya (Wholesome Daily Food)"

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ABSTRACT -:

Swasthya Rakshan i.e. maintaining well-being of a person is the foremost aim of Ayurveda. It can be achieved by following Dincharya, Rituchrya mentioned in Ayurvedic samhitas. Nowadays risk of lifestyle diseases like Diabetes mellitus, Obesity, Heart disease, Hypertension, Cancer etc. is increasing day by day. This is a result of unhealthy diet and lack of physical activity. To control these; healthy changes in lifestyle and food habits is the need of time. Yava (*Hordeum vulgare* Linn.) is herbal drug belonging to Gramineae/ Poaceae family mentioned as Nitya Sevaniya Aahara Dravya in Samhitas. It is also used as a dietary supplement specifically in Vasant, Varsha and Sharad Ritu. Yava is in possession of Kashay, Madhur Rasa, Katu Vipaka, Sheet Veerya and Ruksha Guna. It is mentioned as Lekhaniya Dravya.

Right diet is the essence of disease prevention and the foundation of a healthy and happy life. A properly selected diet and diet plan plays a critical importance in the management of any disease. The usage of Yava or barley (*Hordeum vulgare* L.) both as Pathya (wholesome) and Aushadha (medicine) is established in ancient texts and modern research experiments. Yava is in practice since time immemorial due to its rich nutritional entities and various therapeutics benefits.

Yava is highly useful grain which should be consumed to promote health of individual and prevent disease conditions.

This review shows the role of Yava in daily food habits for healthy life. The present review details Rasapanchaka (five attributes of dravya) and utility of Yava as a Pathya depicted in Samhitas.

KEYWORDS: Ayurveda, Swasthya Rakshan, Lifestyle diseases, Yava, Dietary supplement, Ahara Kalpana, Barley, *Hordeum vulgare*, Yava.

INTRODUCTION -:

Aim of Ayurveda is to get rid of diseased condition i.e. to get rid of sickness of a person and to prevent diseases, to keep a healthy person in healthy condition. Health i.e. Swasthya is maintaining homeostatic condition of Dosha, Dhatu, Mala, Agni in the body according to Ayurveda. Swastha person can achieve a well balanced constitution, attractive appearance, good muscular strength, complete peace of mind and a disease free life.

As prevention is better than cure; prime importance is given to maintain health and to prevent diseases in Ayurveda. Measures like Dinacharya (daily regimen), Ritucharya (seasonal regimen), proper dietary habits and Sadvritta(code of conduct) have been described in Samhitas.

Three sub-pillars i.e. Trayopsthambha[1] are essential to maintain health. Diet i.e. Aahara is one of them which is playing the most important role for healthy lifestyle and thus to achieve longevity of a person. It is also addressed as Mahabheshaja by Aacharya Kashyapa[2] .

Due to changes in lifestyle; dietary pattern of masses is changing day by day. Improper eating habits, increased stress level, absence of physical exercise have lead society towards lifestyle diseases. Number of patients and individuals at risk of these diseases are increasing extremely. Their prevention has become a major global concern now. It can be achieved by having balanced diet.

Aacharya Charaka [3] and Vagbhata [4] have explained Nitya Sevaniya Dravyas which can be compared with balanced diet. Each one of them has different nutritive values. Yava (*Hordeum vulgare* Linn.) is included in those Nitya Sevaniya Dravyas. It is available and used worldwide in various forms.

Yava is advocated as Pathya in 117 different disease conditions, nine swastha conditions. A total of 108 Ahara Kalpana (food dietetics preparations) of Yava has been found.

It is found to be used in Swastha and 48 different disease conditions among them maximum formulations have been found in Prameha, Trushna, Jwara, Kasa, etc. Yava is contraindicated in persons suffering from Amlapita (dyspesia), Grahani (malabsorption syndrome) and during the administration of Gandhaka rasayana.

Yava which is also known as Barley is rich with essential nutrients like protein, dietary fiber and other micronutrients. It is having low amount of fat which is beneficial to decrease chances of lifestyle diseases. Use of Yava in daily diet would be beneficial to maintain good health. It is cost effective and easily available worldwide.

AIMS AND OBJECTIVES:

Aim: To study role of Yava (*Hordeun vulgare* Linn.) as a Nitya Sevaniya Aahara Dravya.

Objectives: -

- To study Ayurvedic aspect of Yava.
- To study botanical and Nutritional aspects of Yava.
- To study role of Yava as Nitya Sevaniya Aahara Dravya with its Raspanchaka and Phytochemicals.

MATERIALS AND METHODS:

References have been collected and relevant matter is compiled from Ayuervedic literature. Available commentaries of samhitas are also reviewed. All Compiled matter is critically analysed for the discussion and attempt has been made to draw some fruitful conclusion.

YAVA - An Ayurvedic Perspective:

Yava (*Hordeum vulgare* Linn.) belongs to Poaceae (grasses) family. It is considered to have Kashaya rasa, Madhura rasa, Katu vipaka, Sheeta veerya, pacifies kapha and pitta. It is in possession of Mrudu, Guru, Ruksh, Picchila guna. Yava has properties like- Lekhana, useful for wounds like Tila (Sesamum), Medhya, Agnivardhak, Swarya, Balakar, Bahuvata-Malakar, Varnyasthairyakar [5]. It is also known to decrease Meda, Trishna and does raktaprasadan [6]. Yava is having dominance of Prithvi, Vayu and Jala Mahabhuta.

In samhitas; Yava has been classified in following Vargas:

Sr.No.	Samhita	Adhyaya	Varga
1.	Charak samhita[7]	Annapan vidhi	Shookdhanya
2.	Sushruta samhita[6]	Annapan vidhi	Kudhanya
3.	Ashtang Hruday[8]	Anna Swarup Vidnyaniya	Shookdhanya
4.	Bhavprakash Nighantu[5]	Dhanyavarga	Shookdhanya

Yava is also mentioned specifically in following context:

1. As **Nitya Sevaniya Aahara Dravya**- Aacharya Charaka [3] and Vagbhata [4] have mentioned Yava as a Nitya sevaniya dravya. These dravyas maintain health of a person and restricts the diseases from originating.

2. In **Agrya sangraha** [9] - Yava is mentioned as agrya/pradhan among Purishajanak dravyas in Charak Samhita.

3. As **Lekhan Dravya** [10] - Aacharya Sharangdhara considered Yava as a Lekhana Dravya along with honey, hot water and Vacha (*Acorus calamus* Linn.).

4. In **Ritucharya** [11] - Yava sevan is useful in Sharad Ritu. Puran Yava sevan should be done in Vasanta and Varsha Ritu as mentioned in Charak samhita.

Botanical Illustration of Yava (*Hordeum vulgare* Linn.)

- **Morphology** [12] - *Hordeum vulgare* Linn. is annual plant with 50-100 cm. height. Leaves are flaccid, linear, acuminate. Spike(with awns) are 20-30 cm. long, 8-10mm. broad, flattened,2-ranked,with brittle axis; lateral spikelets stipitate, staminate, muticous; perfect in the middle, sessile, aristate; glume lanceolate subulate at the base, ciliate-plumose, the longer awns once and half as long as the sterile flowers, empty glumes of the lateral spikelets muticous; awn of the fertile glume scabrous, 15cm.long.

➢ **Taxonomy** [13]

Kingdom	**Plantae**
Subkingdom	Tracheobionata
Superdivision	Spermatophyta
Division	Magnoliophyta
Class	Liliopsida
Order	Cyperales
Family	Poaceae
Genus	Hordeum
Species	Hordeum vulgare Linn.

Yava (*Hordeum vulgare* Linn.) i.e. Barley is one of the top most cultivated crops globally (12% of total cereal cultivated), ranking fourth among cereal grains after wheat, rice, and maize [14]. Barley outperforms other cereals under various environmental stresses due to its winter-hardy, drought- resistant, and early maturing nature and is thus generally more economical to cultivate [15]. The major production states of Barley in India are Rajasthan, Uttar Pradesh, Madhya Pradesh, Haryana, Punjab, West Bengal, Jammu and Kashmir, some regions in Bihar, Uttaranchal and Himachal Pradesh.

➢ **Nutritional Facts:**

Yava i.e. Barley is a versatile cereal grain which is rich in macro and micronutrients. It fulfills major requirements of human body. Following nutrients are present in Yava-

1. Nutrients:

Dietary fibre	62%
Carbohydrate	26%
Protein	20%
Calories	18%

2. Vitamins:

Niacin	23%
Vitamin B6	13%
Thiamin	13%
Riboflavin	7%

3. Minerals:

Manganese	66%
Selenium	54%
Phosphorus	22%
Copper	21%

4. Phytochemicals:

Phenolic acid	Tocols
Flavonoids	Phytosterols
Lignans	Folate

DISCUSSION:

Role of Yava/Barley as Nitya Sevaniya Aahara Dravya as per Ayurveda:

1. Rasa- Yava is in combination of Kashay- Madhur rasa [5]. Kashaya rasa decreases Pitta-kapha, purifies blood, absorbs the kleda-meda and performs as Lekhan dravya. It also controls speed of cell life towards its destruction i.e. increases life span of cell [18]. Madhura rasa increases Dhatubala.

2. Veerya- Sheeta veerya [5] of Yava does Jeevaniya karya.

3. Vipaka- Katu vipaka [5] absorbs excess sneha, meda, kleda present in body.

4. Guna [5] - Guru guna increases quantity of mala. Mrudu guna helps in softening of mala. Picchila guna softens the route of mala and helps in excretion. Ruksha guna absorbs excess Kapha, Meda and kleda.

5. Mahabhutadhikya- Yava is in possession of Prithvi, Vayu and Jala mahabhuta. Prithvi mahabhuta gives sthirata and guruta to Yava. Vayu provides it rukshata by which absorption of excess kleda-meda is done. While Jala mahabhuta binds the Purisha together by its sandhan karma.

6. Karma [5] - Following karmas of Yava are seen by corresponding attributes -

S.No.	Karma	Karan-Mimansa	Mentioned as
1.	Purishajanana	Guru guna, Prithvi mahabhuta increases quantity of Purisha. Mrudu guna softens it and Picchila guna helps it by softening its route of	Agrya in Purishajanak dravya

		excretion.	
2.	Lekhana	Kashaya rasa, Ruksha guna absorbs kleda,meda and ultimately does lekhan i.e. reduces thickened coating inside strotasa which causes obstruction of flow.	Lekhaniya dravya
3.	Agnivardhak	Kashaya rasa absorbs Kleda in Aamashaya resulting into Agnivardhana.	
4.	Medhavardhak	Madhra rasa does Medhya karya	Nitya sevaniya dravya
5.	Swarya	Madhura rasa does Swarya karya	
6.	Sthairya-Balakar	Mahura rasa,Guru guna, Pruthvi mahabhuta increases dhatubala. Sthairya is obtained due to dominance of Prithvi mahabhuta.	
7.	Varnasthairyakar	Madhura rasa does varnya karya. Rakta-Pitta Shodhana is done by kashaya rasa and prasadan karya of sheeta veerya help to maintain varna.	
8.	Vrushya	Madhur rasa and Sheeta veerya promotes Vrushya karya.	
9.	Bahuvata	Kashaya rasa, Sheeta veerya and Ruksha guna increases vata.	

➢ Role of Phytochemicals in Yava/ Barley:

Yava/ Barley contain beta-glucan which is largely credited for these health benefits. It also contains phytochemicals including phenolic acids, flavonoids, lignans, tocols, phytosterols, and folate. These phytochemicals exhibit strong antioxidant, anti proliferative and cholesterol lowering abilities, which are potentially useful in lowering the risk of certain diseases. Therefore, the high concentration of phytochemicals in barley may be largely responsible for its health benefits.[17] Following are the phytochemicals present in Yava/barley have important role in prevention of various diseases.

1.Phenolic acid:

These are present in barley in abundant quantity. Phenolic acids have been linked to chronic diseases prevention partly due to the presence of unsaturated carboxylic group[19]. The abundant content of phenolic acids in barley present in the hulled variety, indicates that it may also serve as an excellent dietary source of natural antioxidants with antiradical and antiproliferative potentials. [20]

2.Flavonoids:

Barley is a rich source of flavonoids. Clinical studies indicate that flavonoids may be the bioactive substances present in cereal grains responsible for the moderation of many diseases including cancer and coronary heart diseases.[21]

3.Lignans:

Lignans are natural polyphenols widely distributed in the plant kingdom as natural defence substances. The structural and functional similarity of lignans to 17b-estradiol make them bioactive as phytoestrogens. Lignans have been suggested to induce a wide range of biological effects, such as antioxidant, antitumor, antiviral, antibacterial, insecticidal, fungistatic, estrogenic, and antiestrogenic activities, and protect against coronary heart disease.[22]-[24]

4.Tocols:

Barley has some unique phytochemical properties, such as the presence of all eight tocol vitamers, which are usually not complete in some cereal [25]. Tocopherols and tocotrienols collectively known as Tocols; are a class of lipid-soluble phytochemicals found in barley. Tocols are recognized for their antioxidant properties, especially their ability to inhibit lipid peroxidation in biological membranes [26]-[29]. In addition to their antioxidant properties, Tocols found in cereals proffer anticancer and cancer suppression effects [30]-[31], induce the immune system [32], moderate the risk factors of cardiovascular diseases (CVD) [33]-[34], and promote apoptosis induction [35]. One of the most striking discoveries about tocols is their ability to clear atherosclerotic blockages (stenosis) in the carotid artery, potentially reducing the risk of stroke [36].

5.Phytosterols:

Barley is considered a good source of phytosterol. Phytosterols or plant sterol is an important structural component of plant membrane similar in structure to cholesterol, but different in configuration. Recent studies have shown that natural intake of dietary plant sterols can have a positive effect in decreasing serum cholesterol levels, protect against CVD, and prevent colon cancer.[37]-[42]

6.Folates:

Folate is a group of phytochemicals that represents an essential nutrition component (vitamin B). It has been associated with cardiovascular health. Barley grains are enriched with folate. Including barley in daily diet will help in preventing and reducing the risk of cardiovascular ailments [17].

7.Beta-glucan:

Barley and its products have bioactive compounds with antioxidative and immunomodulatory activities that are associated with cancer moderation. Most studies regarding the chemoprevention of carcinogenesis by barley have been in vitro and have mainly involved the effect of barley fiber, specially b-glucan, and the moderation of this disease [43].

Phytochemicals present in Barley have high antioxidative activity which makes it a useful natural means for the prevention of diabetes and obesity development and progression. Furthermore, systemic, low-grade inflammation, especially in adipose tissue, is a trademark of obesity and diabetes. In addition to barley phytochemicals' antioxidant properties, barley phytochemical compounds have potent anti- inflammatory actions and could thereby moderate diabetes and obesity risk by this mechanism [44]-[46].

CONCLUSION:

Ayurveda states that diseases originate from unhealthy diet and can be cured by the healthy one. Ayurvedic pharmacodynamics is indicative to prevent and cure many diseases. It is a time to reintroduce the Barley (Yava) again in the main diet, based upon its Ayurvedic pharmacodynamics, to prevent and cure many diseases. Regular intake of Nitya Sevaniya aahara dravyas will help to decrease chances of lifestyle diseases and to maintain a healthy life. Yava is highly useful grain which should be consumed daily to promote health of individual and prevent disease condition. Use of Yava in diet as mentioned in Samhitas will be helpful to keep away the threat of diseases. Modern researchers have also proved that phytochemicals present in Yava are beneficial to control lifestyle diseases. This cereal play an important role as Pathya in many diseases. Present findings may be helpful for its daily use to promote health of healthy persons and prevent disease conditions in pateints.

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