

THERAPEUTIC USES AND BENEFITS OF BARLEY WATER (MA-UL-SHA'EER) IN UNANI AND MODERN PERSPECTIVE

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ABSTRACT

Barley water (*Ma-ul-Shaeer*) is a drink made from barley grains with water after cooking. Two types of barley grains are available in the market i.e. hulled barley and pearled barley. Both of them are obtained from *Hordium vulgare* Linn, which belongs to Poaceae family. Barley water is a very significant herbal preparation in Unani system of medicine. Most of the unani physicians agreed that Ma-ul-Shaeer (Barley water) is the best *Ghizae Dawaaee*. Following ten specified pharmacological actions are recommended by great Hippocrates: i.e it is *Barid* in *Mizaj*, produces *Nuzj* in *Akhlat*, eliminates *Akhlate Muharriqa*, and also eliminates morbid material, highly permeable and digestive, *Lazeez* (delicious), provides nutrition in moderate way, quenches thirst, doesn't produce agitation in *Akhlat-e-Fasida*, doesn't produce flatulence. Therapeutic uses of Ma-ul-Shaeer (Barley water) mentioned in Unani system of medicine are: Zibetetus, Sudaa'e har, Sil

wa Diq, Zo'f-e-Meda, Nafkh-e-Shikam, Qulanj, Humma, Hiddate Dam. Barley water is also used in asthma, fever, Pleurisy, Pulmonary ulcer, Dry cough, Chronic cough, anaemia, urocystitis, urethritis, DM type 2. This article keen view on its all detail, specially chemical constituents, pharmacological actions, benefits and therapeutic uses of Barley water (*Ma-ul-Shaeer*) based on the available literature.

KEYWORDS: Barley water, *Ma-ul-Shaeer*, *Hordium vulgare* Linn.

INTRODUCTION

Barley water is a traditional drink consumed in various parts of the world. It is made by boiling barley grains in water, then straining to remove the grains. *Ma-ul-Shaeer* (Jau ka Paani); 'Ma' means water, 'Shaeer' means; Jau. In the Old English word for barley was *bere*, which traces back to Proto-Indo-European and is cognate to the Latin word *farina* "flour". The direct ancestor of modern English *barley* in Old English was the derived adjective *bærlic*, meaning "of barley".^[1] The first citation of the form *bærlic* in the *Oxford English Dictionary* dates to around 966 CE, in the compound word *bærlic-croft*.^[2] The underived word *bære* survives in the north of Scotland as *bere*, and refers to a specific strain of six-row barley grown there. The Latin word *hordeum*, used as barley's scientific genus name, is derived from an Indo-European root meaning "bristly" after the long prickly awns of the ear of grain.^[3]

Ma-ul-Shaeer (barley Water) (*Hordeum vulgare* L.) is the world's fourth most important cereal crop after wheat, rice and maize. It is readily available with reasonable cost, and has the highest amount of dietary fiber among the cereals which may be beneficial for metabolic syndrome. Ma-ul-Shaeer (Barley water) is one of the oldest cultivated cereal grains and currently ranks fourth^[4] or fifth^[5] in acre age and crop production worldwide. In the USA the current use of Barley as food ranks a distant third (1.5%) behind use as animal feed (65%) and in malt and alcohol production (30%). In 1991 Barley used as food in the European union was even lower (0.3%) than in the USA. In contrast, during the same time period food was the largest use for Barley in Morocco (61%), China (62%), India (73%) and Ethiopia (79%).^[5]

Scientific Name: *Hordium vulgare* Linn.^[6,7,8]

Family: Poaceae^[9,10]

Vernacular Name:

English:	Barley ^[7,9]
Urdu :	Jao, jao muqashar nim kofta, jav ^[11]
Persian:	Jao ^[11,12]
Arabic :	Shae'er, shair ^[12,13]
Hindi :	Jau, Jav ^[6,12]
Sanskrit:	Aksata, divya, hayapriya, Yava ^[6]
Parts used:	Grain (Seeds) ^[6,7]

Mizaj (Temperament)

Barley: Cold 1⁰ & Dry 2⁰^[11,13,14]

Barley Water: Cold 2^o & Wet 2^o^[15,16]

Miqdar-e-Khurak (Therapeutic Dosage)

Barley: 5-10 gm (Masha)

Barley Water: 200 ml (20 Tola)

Muzir Asraat (Adverse effects)

- For kidney^[12,13]

Musleh (Corrective)

- Anisoon & Gul Qand^[12,13]

Badal (Substitute)

- Jawar^[12,13]

Murakkabat (Formulations)

- Tiryaqe Arba'a, Tiryaqe Samaniya^[12]



Fig. 1: Barley seeds with and without the outer husk.

Chemical Constituents

- B-glucans^[7,9]
- Amylose, lipid, protein, carbohydrate, iron, ash, calcium, and phosphorus-containing compounds of barley starches.^[6,7] The amylose content is a major factor affecting starch quality. Waxy, normal, and high amylose barley genotypes have been reported. Waxy and high amylose genotypes were developed by genetic means.^[17]
- Barley has high amount of dietary fiber such as β -glucan that may decrease the risk of coronary heart disease.^[18] Barley leaves are useful in prevention of metabolic syndrome due to its high antioxidant activity. This type of property is mainly attributed to saponarin, a flavonoid with potent antioxidant activity found in young green barley leaves.^[19] Barley is a rich source of magnesium, a mineral that acts as a co-factor for more than 300 enzymes, including those involved in glucose metabolism and insulin secretion.

Food values/100 gm^[20]

Protein:	11.5 gm
Fat:	1.3 gm
Carbohydrates:	69.6 gm
Calories:	336 kcal
Thiamine:	0.47 mg
Riboflavin:	0.20 mg
Selenium:	18.20 gm
Niacin:	5.4 gm
Calcium:	26 mg
Iron:	1.67 mg
Magnesium:	21 mg
Phosphorus:	215 mg
Fiber	3.9 gm

Barley Water by Unani Physicians

Ma-ul-shaeer (Barley Water) has been mentioned in *Ilaj-bil- giza* segment of many classical unani books.^[21,22,23,24]

Method of Preparation of Barley Water (*Ma-ul-Shae'er*)

Best method of preparation of *Ma-ul shaeer* (Barley Water) is to take water and barley 24:1 and then it is boiled on light flame (Halki aanch) till the ratio becomes 8:1, during this process of boiling froth is removed till the complete disappearance. After that the light reddish water was filtered and collected into plastic bottle. Various Unani physicians prescribed the water and barley ratio as 20:1, 10:1, 24:1.^[21,22,23,25]



Fig. 2: Barley Water.

Pharmacological Actions

Most of the unani physicians agreed that *Ma-ul-Shaeer* (Barley water) is the best *Ghizae Dawaee*. Following ten specified pharmacological actions are recommended by great Hippocrates.^[21,22]

1. It is *Barid* in *Mizaj*
2. It produces *Nuzj in Akhlat*
3. It eliminates *Akhlate Muharriqa*
4. It eliminates morbid material
5. It is highly permeable and digestive
6. It is *Lazeez* (delicious)
7. It provides nutrition in moderate way
8. It quenches thirst
9. It doesn't produce agitation in *Akhlat-e-Fasida*
10. It doesn't produce flatulence

- ◆ Jali^[13]
- ◆ Musakkin^[13]
- ◆ Musakkine Atash^[15]
- ◆ Mudirr-e- Baul (Diuretic)^[7,9]
- ◆ Mohallil-e-Waram (Anti-inflammatory)^[9,26]
- ◆ Astringent^[9,13]
- ◆ Appetizer^[9,26]
- ◆ Mujaffif^[13]
- ◆ Antibacterial Activity^[7,9]
- ◆ Antidiarrhoeal Activity^[9]
- ◆ Antidiabetic Activity^[9]
- ◆ Anticarcinogenic and mutagenic Activity^[9]
- ◆ Antioxidant Activity^[9]
- ◆ Analgesic Activity^[11]
- ◆ Hepatoprotective Activity^[9]
- ◆ Antihyperlipidemic Activity^[9]
- ◆ Antihyperglycemic Activity^[9]

Therapeutic uses of Barley Water (*Ma-ul-Shaeer*)

It is mostly used in following conditions^[15,23,26,27,28]

- Ziabetes
- Sudaa'e har
- Sil wa Diq
- Pleurisy
- Pulmonary ulcer
- Dry cough
- Chronic cough
- Zof-e-Meda
- Nafakh-e-Shikam
- Qulanj
- Hiddat Dam
- Hiddat of Tez and Har drugs.
- It is also used in asthma, strangury, fever, anaemia, urocystitis, urethritis, DM type 2.^[21,27]

- Ma-ul-shaeer is also useful in acute conditions, cool and moist in nature, moderate, cleanses the system and produces good chyme.^[28,29]

Scientific Reports

- Three proteins i.e 26-kDa chitinase, a 30-kDa ribosome –inactivating protein and a 32-kDa- β -glucanase. It has properties of antibacterial, antiviral, antifungal. Chitinases acts as antifungal and hydrolyze the insoluble β -1, 4-linked polymers of N-acetyl glucosamine of fungi.^[30]
- Barley water also contains lignanin which is an important nutrient acts as antioxidant and help to fight and prevent from cancer.
- According to Health Canada and the US Food and Drug Administration, consuming at least 3 grams per day of barley beta-glucan or 0.75 grams per serving of soluble fiber can lower levels of blood cholesterol, a risk factor for cardiovascular diseases.^[31,32]
- Barley is a good source of selenium, phosphorus, copper and magnesium. Selenium is essential component for different metabolic pathways, including thyroid hormone metabolism, antioxidation and immunity.^[33]
- Barley Water (Ma-ul-Sha'eer) is effective when your kidneys need rest from excessive stress. One who is suffering from kidney and bladder ailments can take barley water for therapeutic uses.^[34]
- Recent study from Lund University in Sweden shows that barley can rapidly improve health by reducing blood sugar levels and the risk for diabetes. The secret lies in the special mixture of dietary fibers of barley, which can also help reduce appetite and risk for cardiovascular disease.^[35]
- It is also a very good source of fibers and selenium and a good source of phosphorus and copper. It was found that constant consumption of whole grains decreased the risk of type II diabetes by 31%, pointing out that whole grains extend special benefits in motivating healthy blood sugar control.^[36]
- According to Nilsson and coworkers, eating whole grain Barley can regulate blood sugar for up to 10 hour after consumption.^[37]
- The effectiveness of Barley is due to its soluble fiber content.^[38]

CONCLUSION

Barley water (*ma-ul-sha'eer*) is very beneficial for human being due to its pharmacological actions in various diseases. Barley water is widely acceptable due to its antibacterial activity,

antispasmodic activity, astringent, antidiarrhoeal, antidiabetic activity, anticarcinogenic and mutagenic activity, antioxidant activity, analgesic activity, antifungal activity, hepato protective activity, immunomodulatory activity, nephroprotective activity. This preparation is used in traditional medicine since long time and reference goes to Hippocrates and Avicenna. But it is proved that it can be used in a number of diseases because research is going on. So, this paper may be helpful to know the pharmacological actions and uses of barley water (*Ma-ul-sha'eer*) mentioned in Unani system of medicine.

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