



Therapeutic Potential and Traditional Applications of *Triticum aestivum* L. (Nishasta-e-Gandum) In Unani Medicine: A Review

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Abstract: *Triticum aestivum* (Nishasta-e-Gandum) have been widely utilized in Unani medicine due to their rich nutritional profile and therapeutic potential. The Nishasta-e-Gandum is considered a valuable source of carbohydrates, proteins, essential fatty acids, vitamins, and minerals, contributing to their diverse medicinal applications. In Unani medicine, Nishasta-e-Gandum is traditionally used for their demulcent, nutritive, and tonic properties, playing a crucial role in maintaining general health and treating ailments such as gastrointestinal disorders, debility, and metabolic imbalances. The mucilaginous properties of wheat seeds aid in soothing the digestive tract, while their high fiber content supports bowel regulation and detoxification. Additionally, Nishasta-e-Gandum -based formulations are prescribed for improving energy levels, enhancing skin health, and managing conditions like diabetes and cardiovascular disorders. Recent scientific studies have corroborated these traditional uses, highlighting the seeds' antioxidant, anti-inflammatory, and cardio-protective effects. This literature review provides a comprehensive overview of the therapeutic potential and traditional applications of *Triticum aestivum* seeds in Unani medicine, emphasizing their role in disease prevention and health promotion. Furthermore, it underscores the necessity for extensive clinical research to validate and integrate Unani wisdom with contemporary medical practices.

Keywords: *Triticum aestivum*, Unani medicine, Nishasta-e-Gandum, Gastrointestinal health

INTRODUCTION

The drug *Nishasta-e-Gandum* consists of starch powder obtained from seeds of *Triticum aestivum* Linn. (Fam. Poaceae). An annual cereal, herbaceous in nature. It is cultivated all over the world for its grains. Wheat as the most important food grain is frequently mentioned by *Hippocrates* and mentions three kinds. Pliny also describes several kinds of *Triticum*. Sanskrit medical writers also mentions three kinds of wheat namely, *Mahagodhuma* or large grained, *Madhuli* or small grained, and *Nihisuki* or beardless. Indians wheats may be divided roughly into two classes, soft and hard, the former being mostly used for bread making, and the latter for making vermicelli. The fecula occurs in powder or masses of a white colour. The taste is mucilaginous. Wheat is an excellent energy source as it contains carbohydrates and significant amounts of other crucial nutrients such as proteins, dietary fiber, and smaller amounts of lipids, terpenoids, vitamins, minerals, and phytochemicals (Dymock *et al.*, 1890; Anonymous, 2009; R.N. Khory, 2008; Kaur *et al.*, 2022).

Taxonomical classification

Kingdom	:	Plantae
Divison	:	Tracheophyta
Class	:	Magnoliopsida
Order	:	poales
Family	:	Poaceae
Genus	:	<i>Triticum</i>
Species	:	<i>aestivum</i> L.

Vernacular names

Arabic	:	Hinath, Hantha, Nisha, Lababul Qiwan, Hintah
Bengali	:	Gam, Giun, Gom, Ghaun
English	:	Wheat, Wheat starch, Starch
Gujrati	:	Ghavum, Gawn, Govum

Hindi	:	Gehun, Giun, Kanak, Gandham, Gehub
Marathi	:	Pivla-Potia, Gahum
Persian	:	Aabguwan, Nishasta, Gauduma, Gandum
Punjab	:	Do, Dro, Gehun, Kanak
Sanskrit	:	Yava, Godhuma
Tamil	:	Godumula, Godumai
Urdu	:	Gandum, Gehun

(Nadkarni, 2001; Dymock *et al*, 1890; Anonymous, 1998; Anonymous, 2009; Khan, 2018; Chopra *et al*, 2006; R.N. Khory, 2008; Kirtikar and Basu, 2012; Kabeeruddin, 2000; Nabi, 1958; M. G Nabi, 2007; Rafiquddin, 1985; Allah R. Qureshi, 1957)



Fig. Nishasta-e-Gandum (*Triticum aestivum* Linn.)

Geographical distribution

It is widely distributed in Sinds with suitable climate. In India *T. aestivum* is the most widely grown wheat species. Though it is found throughout the greater part of the country, it is cultivated mainly in temperate climate like in Punjab, Haryana, Uttar Pradesh, Bihar, Mumbai, northern Rajasthan and Euphrates region. In the Himalayas, its cultivation extends up to an altitude of c. 4000 m. Wheat is grown on variety of soils but it prefers a loamy texture and a moderate water holding capacity (Nadkarni, 2001; Dymock *et al*, 1890; Anonymous, 1998; Chopra *et al*, 2006; Greenish, 1999; Kirtikar and Basu, 2012; Bentley, 1983).

Botanical description

An annual grass, commonly 60-150 cm. in height, but may be as short as 30 cm. when grown under very dry conditions, or considerably over 150 cm. in height under conditions exceptionally favourable for vegetative growth. Stems tufted, erect or semi-erect to prostrate, generally hollow with thin walls, but in some varieties partially or completely filled with pith: nodes generally 5-7, wholly or partially covered by leaf sheaths; leaves long and narrow, with prominent parallel veins, and having ligule and the auricles, glabrous or hairy on one or both surfaces; inflorescence a spike of spikelets, commonly called 'ear', with a tough rachis, awnless, glabrous or hairy; spikelets 2-ranked, compressed parallel to the rachis, closely or loosely imbricate about as long as broad, 5-9-flowered, ripening 4-5 grains towards the centre, usually fewer at the base and apex: glumes loose and broad; lemmas thin, pale and rounded on back; fruit or the grain threshes free from the glumes and lemmas, highly variable, oblong with blunt ends, 5-10 mm. long, usually plump and swollen, with a shallow groove on one face (Anonymous, 1998; Kirtikar and Basu, 2012; Bentley, 1983; Kaur *et al*, 2022).

Macroscopic

Nishasta Gandum is White fine powder and no characteristic odour or taste (Anonymous, 2009).

Microscopic

Simple starch grains of two sizes; smaller circular, oval up to 15 μ and large oval or sub-reniform up to 50 μ , central hilum with concentric striations (Anonymous, 2009).

Unani description

Mahiyat (Morphological features)

Nishasta is obtained from wheat, maize, and rice. However, in the medical literature, when absolute starch' is mentioned, it specifically refers to wheat. The best *Nishasta* (starch) is that which is prepared from wheat during the summer; it should be white, finely grained, fresh, and soft, ensuring that it does not develop mold or fungus (Ghani, 2011; Khan, 2018; Lubhaya, 1984; Kabeeruddin, 2000; Nabi, 1958; M. G Nabi, 2007; Ashraf, 1993; Rafiquddin, 1985; Allah R. Qureshi, 1957; Hakim, 1922).

Hasas mustamila (Parts used)

The grains and Fecula (R.N Khory, 2008)

Mizaj (Temperament)

Cold 1° and Dry 1° (Ghani, 2011; Khan, 2018; Lubhaya, 1984; Kabeeruddin, 2000; Ashraf, 1993; Rafiquddin, 1985; Hakim, 1922)

Cold and Dry (Anonymous, 2009; Nabi, 1958; M. G Nabi, 2007; Allah. R Qureshi, 1957)

Hot 1° and moderate in moistness and dryness (Ibne Sina, 1998)

Miqdar-e-khurak (Therapeutic dose)

3-5 gm	(Rafiquddin, 1985)
5-7 gm	(Anonymous, 2009)
7 gm	(Ghani, 2011; Khan, 2018)
6gm-10 gm	(Lubhaya, 1984; Kabeeruddin, 2000)
10-50 gm	(Hakim, 1922)

Mzarrat (Adverse effect)

Produce black bile, cause obstruction, polyuria, oligospermea and difficult in digestion. (Ghani, 2011; Khan, 2018)
Produce obstruction and causes oligospermea
(Nabi, 1958; M. G Nabi, 2007; Ashraf, 1993; Rafiquddin, 1985; Allah. R Qureshi, 1957)

Musleh (Corrective)

Garam masala, Ajmlood and Laung (*Syzygium aromaticum*), Honey and sugar
(Ghani, 2011)
Honey and Sugar (Khan, 2018; Ashraf, 1993; Allah. R Qureshi, 1957)
Laung (*Syzygium aromaticum*) (Nabi, 1958; M. G Nabi, 2007; Ashraf, 1993; Hakim, 1922)
Zanjabeel (*Zingiber officinale*) and Honey (Rafiquddin, 1985)

Badal (Substitute)

Rice (*Oryza sativa*) Ghani, 2011; Ashraf, 1993; Rafiquddin, 1985; Allah. R Qureshi, 1957; Hakim, 1922)
Brinj Maghsool (Khan, 2018; Nabi, 1958; M. G Nabi, 2007)

Afal (Pharmacological actions)

Actions	References
<i>Qabiz</i> (Astringent)	Ghani, 2011; Khan, 2018; Lubhaya, 1984; Kabeeruddin, 2000; Nabi, 1958; M. G Nabi, 2007; Allah. R Qureshi, 1957
<i>Habis i dam</i> (Haemostatic)	Ghani, 2011; M. G Nabi, 2007; Ashraf, 1993; Rafiquddin, 1985; Hakim, 1922
<i>Mundij</i> (Concoctive)	Ghani, 2011; Rafiquddin, 1985
<i>Muqawwi-e-Bah</i> (Aphrodisiac)	Anonymous, 2009; R.N. Khory, 2008; Kirtikar and Basu, 2012; Allah R. Qureshi, 1957
<i>Mulaiyin</i> (Laxative)	Anonymous, 2009; Khan, 2018; Kirtikar and Basu, 2012; Rafiquddin, 1985
<i>Mughazzi</i> (Nutritive)	Anonymous, 2009; Chopra <i>et al</i> , 2006; R.N. Khory, 2008; Kirtikar and Basu, 2012
<i>Mugharri</i>	Khan, 2018
<i>Radai</i> (Repellent)	Khan, 2018
<i>Mudammil</i> (Healing agent)	Khan, 2018; M. G Nabi, 2007; Allah R. Qureshi, 1957
<i>Mubarrid</i> (Cooling)	Kirtikar and Basu, 2012
<i>Mujafif</i> (Desiccant)	Lubhaya, 1984; Kabeeruddin, 2000; Nabi, 1958; M. G Nabi, 2007; Ashraf, 1993; Hakim, 1922
<i>Musakkin</i> (Sedative)	Lubhaya, 1984; Rafiquddin, 1985; Hakim, 1922

Istemaal (Therapeutic uses)

Uses	References
<i>Khushuna al-Halaq</i> (Sore throat)	Ghani, 2011; Khan, 2018; Kabeeruddin, 2000; Nabi, 1958; Ashraf, 1993 ; Allah. R Qureshi, 1957; Hakim, 1922
<i>Su'aal</i> (Cough)	Ghani, 2011; Khan, 2018; Kabeeruddin, 2000; Nabi, 1958; M. G Nabi, 2007; Ashraf, 1993; Rafiquddin, 1985; Allah. R Qureshi, 1957; Hakim, 1922
<i>Sill</i> (Tuberculosis)	Ghani, 2011; Khan, 2018; M. G Nabi, 2007; Allah. R Qureshi, 1957
<i>Jarab</i> (Scabies)	Ghani, 2011
<i>Ashob-e- Chashm</i> (Conjunctivitis)	Ghani, 2011
<i>Bawaseer-i-Khoon</i> (Bleeding Piles)	Ghani, 2011; Khan, 2018
<i>Zof-e-Ishteha</i> (Loss of appetite)	Anonymous, 2009;
<i>Ghalba-e-Safra</i> (Biliousness)	Anonymous, 2009;
<i>Nazf al-Dam</i> (Bleeding)	Khan, 2018; Kabeeruddin, 2000; Nabi, 1958; Hakim, 1922
<i>Nazla-o-Zukam</i> (Coryza and Catarrh)	Khan, 2018
<i>Ishal Muzmin</i> (Chronic Diarrhoea)	Khan, 2018
<i>Safrawi isaha' al</i> (Bilious diarrhea)	Khan, 2018
<i>Quruh al- Am 'a'</i> (Intestinal ulcer)	Khan, 2018; Kabeeruddin, 2000
<i>Qarha Qatat</i> (Decubitus ulcer)	Lubhaya, 1984
<i>Mudammil Quruh</i> (Wound healer)	Nabi, 1958; Ashraf, 1993; Allah. R Qureshi, 1957

Murkkabat (Compound formulations)

Halwa-e-Gajar, Looq-e-Badam, Looq-e-Shamoon, Majoon-e-Sohag, Majoon-e-Muqawwi-e-Rahem and Majoon-e-Suparipak, Shayaf-e-Abyaz, Shayaf-e-Ahmar, Safoof-e-Sandal Ziyabeetus wala, Safoof jiryana e khas, Hab-e-surfa (Anonymous, 2009; Lubhaya, 1984).

Phytochemical constituent

Water makes up 12.5%, albuminoids 13.5%, proteins 12.4%, starch 67.9%, fat 1.9%, fibers 2.5%, ash 1.8%, and cellulose 1.92%. Wheat contains a high proportion of nitrogenous substances. The mineral content found in Indian wheat (mg/100g) includes: 41 mg of calcium (Ca), 138 mg of magnesium (Mg), 306 mg of phosphorus (P), 4.9 mg of iron (Fe), 17.1 mg of sodium (Na), 284 mg of potassium (K), 0.49 mg of copper (Cu), 128 mg of sulfur (S), and 47 mg of chlorine (Cl). The vitamins present in a 100g sample of wheat include: 64 µg of carotene, 0.45 mg of thiamine, 0.17 mg of riboflavin, 5.5 mg of nicotinic acid, and 206.0 mg of choline. Whole wheat is a good source of thiamine and nicotinic acid, though it is relatively low in riboflavin. Other B-complex vitamins found in wheat include pantothenic acid, p-amino benzoic acid, biotin, choline, folic acid, and inositol. Wheat is also an excellent source of tocopherols, which are potent in vitamin E. Starch is the main carbohydrate in wheat, with small amounts of glucose and fructose. Sucrose is the primary soluble carbohydrate in wheat germ. The amino acid profile (as a percentage of protein) includes: alanine 2.2%, arginine 4.7%, aspartic acid 3.7%, cystine + cysteine 1.9%, glutamic acid 35.5%, glycine 3.5%, histidine 2.3%, isoleucine 4.6%, leucine 7.6%, lysine 1.8%, methionine 1.9%, phenylalanine 5.4%, proline 12.7%, serine 4.7%, threonine 2.6%, tryptophan 1.1%, tyrosine 3.1%, and valine 4.7%.

(Nadkarni, K. M., (2000); Dymock *et al*,1890; Anonymous, 1998; Anonymous, 2009; Chopra *et al*, 2006; Rastogi and Mehrotra, 1970-1979)

Pharmacological studies

Cara *et al*, 1990, 1991, 1992 and Mathe *et al*, 1977 reported that *Triticum aestivum* exhibit hypolipidemic and hypocholestraemic activity on Human and rat model.

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