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## Kafe Darya (Cuttlefish bone): “Therapeutic potential in Unani system of medicine: A Comprehensive review”

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### ABSTRACT

*Kafe Darya (cuttlefish bone) is one of the most Important animal origin drug used in unani system of medicine for various disorders. Over 200 animal-origin drugs are used in the Unani system for treating various ailments, and 'kafe dariya' is one of the most important among them. There are five to six types of 'kafe dariya,' each with different properties and uses. Kafe darya is used internally for treating headaches(suda), insomnia(seher), gonorrhoea(sozak), and renal calculi (hissat e kulliya). It is also used externally to treat iltehab e jild (skin inflammation), fasad e laun (skin pigmentation) and irritating skin diseases such as ringworm (deedan e ama), insect bites, and scabies(jarb). It has anti-inflammatory (muhalil), analgesic (musakkin e alam), wound healer (madammil e qurroh), emmenagogue (mudir e haiz), anti-helminthic (qatil e kirm wa shikam) and other properties. It is used as an ingredient of various unani formulations. 'Kafe dariya' is rich in calcium and other bio inorganic elements such as magnesium, strontium, iron, and trace amounts of copper and zinc, making it an excellent source of these nutrients.*

**Keywords:** Kafe Darya, cuttlefish bone, muhalil e auram, hissat e kulliya, fasad e laun, deedan e ama.

### Introduction

Unani system of medicine uses drugs originated from plants, animals, and mineral origin, and over 200 drugs of animal origin have been documented in unani literature that are used for treating various ailments.<sup>1</sup> Kafe darya is one of the most Important animal origin drug used in unani system of medicine for various disorders. It is used as an ingredient of various unani formulations.<sup>1</sup>

The Unani literature has recorded various types of 'kafe dariya' or 'samundar jhag'. Ibn e Baitar has mentioned five forms of kafe dariya, whereas Imran Usmani and Ghani have described six.<sup>2,3</sup> The first type, called "asfungy" (spongy), is named so because it resembles a sponge and has a fishy scent. The second type, "zufr" (zfratul oyoon), is white and lightweight with many pores and an algal odour. The third type, known as "doodi," is a little lighter and bluer. It is also called "heelsoon" or "seenoon," and in Shirazi, it is called "kirm aboob" because of its worm-like appearance. The fourth type, "soufi" or "qayoon," is wool-like with numerous holes and cavities that are yellowish-white and filled with muds. The fifth type is white, odourless, smooth on top, and rough on the underside. The sixth type is thick, at least one finger wide, odourless, salty tasting, consisting of numerous layers, and hard. It is underneath this type that a substance made of lime may be located. It has black skin on its back and protrusions that resemble its dorsal vertebrae, which appear to represent the structure's foundation. Its Hindi name is "kastoori," and it is approximately 10 inches long.<sup>4,5,6</sup>

The fifth variation is considered superior due to its stronger effect and hotness in mizaj. Galen (Jalinoos) claimed that the fourth type is superior to the others due to its hotness in temperament.<sup>4</sup>

Kafe darya is used internally for treating various diseases such as headaches(suda), insomnia(seher), gonorrhoea(sozak), and renal calculi (hissat e kulliya), as it causes local sedation it is of great value in these diseases. It is also used externally for treating inflammation, skin pigmentation, and irritating skin diseases such as ringworms, bites, and scabies. The paste made with lime juice

is useful in treating itches and other skin diseases. It is an excellent source of calcium, containing up to 90% calcium carbonate, as well as aragonite, chitin, and other bio inorganic elements such as magnesium, strontium, iron, and trace amounts of copper and zinc. All these elements are naturally combined in the bone structure in their optimal amounts.<sup>7,8,9</sup>

**Scientific classification**<sup>2,5,10</sup>

Phylum: Mollusca  
Class: Cephalopoda  
Subclass: Dibranchia  
Order: Sepiida  
Genus: Sepia

**Vernacular names**<sup>2,3,4,5,6,10</sup>

Common name: Os Sepia, sea biscuit, cuttlefish shell (bone)  
Englis: cuttlefish bone, sea froth  
Latin: Sepia officinalis  
Arabic: Zabdul bahr, queetman  
Urdu: Samundarjhag  
Hindi: Samandar phan  
Persian: Kafedariya  
Unani: Farenoon  
Roman: Qatumas, plasiyus

**Habit and habitat:**

In India, sepia is widely found in the water. Cuttlefish, Kafe dariya, or sepia is a marine mollusc found in coastal areas and coral reefs. It is an excellent swimmer. It is common for it to swim at night and rest flat on the bottom during the day. It may burrow as well by utilising its fins as shrouds. It is carnivorous, feeding on tiny fish, crustaceans, and other creatures found in shallow to medium water. The sexes are distinct, with males being significantly smaller. The fourth arm of a male is hector-cutilized.<sup>4,6,9</sup>

**Source and collection:**

Kafe dariya is the internal shell of the cuttlefish, Sepia officinalis Linn, order dibranchiate, family sepidae, a huge mollusc found all along the British coast and plentiful in the Mediterranean, Atlantic, and Indian oceans. It is the skeleton of an aquatic animal. It may be found in the Persian Sea and the 'Dariya-e-Qulzam'.<sup>4,10,11</sup>

**Description:**

The kafe dariya shells are oblong-ovoid and lenticular, measuring 10-25cm long, 4-8cm broad, and 1.5-3cm thick at their thickest point. They are biconvex or planoconvex, with the larger convexity on the outside. The outermost layer is calcareous and white, about 0.1mm thick, and exhibits 1mm broad and 0.5mm apart rounded tuberculation and rugae. This is followed by a yellowish chitinous layer that is 45-100mm thick. This inner component is readily crushed by mild pressure and keeps the indentation's shape. The three outside layers protrude as a narrow 3mm broad margin below where the interior layers taper off quickly to a rounded tip or macro. The shell is virtually odorous, and the flavour is earthy and faintly sweet.<sup>2,9,12</sup>

The fifth variation is superior because it is hotter and stronger in action. Galen (Jalinoos) stated that the fourth variation is superior to the others due to its hotness in mizaj (temperament). Some other Unani attibas preferred the pinkish-coloured type.<sup>4,6</sup>

**Temperament:**

According to the unani school of medicine, grasping the notion of mizaj is essential for comprehending how drugs work and how diseases develop. The mizaj of varies depending on its nature.

- a) Hot Dry – har yabis.<sup>5,12</sup>
- b) Hot Dry 3<sup>rd</sup> degree- har yabis 3<sup>o</sup>.<sup>3,5,11</sup>
- c) Hot Wet –har ratab.<sup>14</sup>

**Taste:**

It tastes salty.<sup>3,13</sup>

**Afa'al (functions)**

It is an Analgesic (musakkin alam), Antacid (dafa hurqatul meda), Anti-emetic (dafa qae), Anti-hemorrhagic (habisud dam), Anti-inflammatory (muhallil), Anti-scarring, Astringent(qabiz), Concoctive (munzij), Detergent (jali), Diuretic (mudir baul), Eliminator (munaqqi), Emmenagogue (mudir haez), Emollient/ relaxant (murakhi), Laxative (mulayyin), Purgative (mus'hil), Siccative (muja'ffif), Stone crusher and remover (mufttih wa mukhrij e hissah), Wound healer (mudammil qurroh).<sup>2,6,11,14</sup>

**Nafekhas:**

Mudir e Haiz and Majalli basar.<sup>3,5,11,14</sup>

**Principle uses:**<sup>5,11</sup>

- a) Useful in skin ailments
- b) Emmenagogue purpose

- c) As eye tonic
- d) Diuretic and stone remover

**Istemaal (therapeutic uses)**

Acne (Busoor), Alopecia areata (Da us salab), Aphthous ulcer (qurooh e dehan), As tooth paste, Ascites(isteskha), Backache(waja uz zuhar), Calculous (hisaat), Chloasma/ black and white spots (kalaf/milia), Conjunctivitis (ramad), Cough(sual), Dysuria( usrul bou), Eczema (naar e farsi), Exfoliation, Eye ache(waja ul uzn), Gingivitis, Headache (suda), haemoptysis (nafs ud dam), Itching(suzish), Jaundice (irqan), Lymphadenitis, Naevi , Otagia Otorrhea, Pain, Pityriasis (bahaq), Pleurisy (zat ul janb), Pneumonia (zaat ur riyah), Poisoning/ snake/ insect bite (sam), Prickly heat, Renal colic (waja ul kulliya), Scabies (jarb), Skin diseases, Skin marks and scars, Swelling/ inflammation (iltahab), Tinea (quba), Weight gain (saman e mufrad).<sup>2,6,11,14</sup>

**Muzir (harmful effects)**

It is nearly poisonous and hazardous in amraz e raas (diseases of head and nervous system); thus, it should be avoided when used internally.<sup>11</sup>

**Musleh(correctives)**

Roghan e tukhme kaddu (oil of seed of Cucurbita moschata).<sup>5,11,14</sup>

**Badal(substitutes)**

Hajr e Qaishoor<sup>4,11</sup>

Other type of sepia

**Dose:**

6-12 ratti <sup>4</sup>

50mg-1g<sup>5</sup>

3-5 masha<sup>12</sup>

**Part used:**

Bone <sup>2</sup>



**Important compound formulations developed in unani system.**<sup>3,4,6</sup>

Musaffiy e reham, sanoon mujali dandaan, basaleeqoon kabir, safoof e bisbasa, kuhal Jawahar, habb e sozak, majoon e suranjan, majalle e basar etc.

**Chemical composition:**

It comprises of heavy metals and proximity

The moisture, ash, lipid, and protein content of cuttlebone is dominated by ash 89.61 percent, carbohydrates 5.26 percent, protein 4.78 percent, and lipid 0.35 percent, respectively. The presence of inorganic components in the form of micro minerals, particularly calcium carbonate (CaCO<sub>3</sub>) and other micro minerals, is indicated by the high ash level.<sup>15</sup>

It comprises of macro and micro minerals

Calcium, phosphorus, potassium, magnesium, iron, zinc, manganese, and salt are all macro minerals, with 40.18 percent being macro minerals and 0.73 percent being micro minerals. This demonstrates that the cuttlebone is largely made up of macro minerals such calcium, magnesium, phosphorus, and potassium.<sup>15</sup>

## **Pharmacological studies**

### **Bone tissue repair and regeneration**

Jayachandran et al. conducted a study on bone tissue repair and regeneration. They evaluated the efficacy of a bone graft substitute made of hydroxyapatite, tricalcium phosphate, and gelatine (HTPG) in repairing bone defects in a rabbit model. The results showed that HTPG had significant bone-forming ability and was effective in promoting bone regeneration. The study concluded that HTPG could be a promising alternative to traditional bone grafts for bone tissue repair and regeneration.<sup>16</sup>

### **Pigmentary skin discolouration**

Asia et al conducted a study to compare the effectiveness of Unani medicine formulations in the treatment of melasma. The study was conducted on 40 patients who were divided into two groups. One group was treated with an Unani formulation containing herbal ingredients, while the other group was treated with a conventional treatment comprising hydroquinone and glycolic acid. The results showed that both treatments were effective in reducing the severity of melasma, but the Unani formulation was found to be more effective in improving skin colour and reducing the size of pigmented spots. Moreover, the Unani formulation was found to have fewer side effects compared to the conventional treatment.<sup>17</sup>

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