

## Nature's Sustainable Aqua Gift — Pearl in Unani medicine

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**Abstract:** The Unani medical system is a holistic approach of science and the human body. It is a natural and simple method of extracting from nature and based on the way body responses. Contrary to the prevalent credence, good health is always associated with nutritious food and active lifestyle, but historical facts have laid a sturdy substructure that a natural gem-like Pearl has higher impact rate on the human body. Reports indicate that India is one of the top countries welcoming more medical tourists and the industry is expected to grow to \$8 billion this year. This paper explains the importance of sustaining the Unani system and drugs made from a component (Pearl-Marwareed) obtained from a marine animal, providing insight on good aquaculture practice in India. Hence, exploring the Islamic perspective of Unani medicine, the safety contour of the drugs and the usage of pearl in its composition. The data were collected from personal interviews with Hakeem (physicians with wisdom) across India and extensive literature. This paper recommends to promote Unani medical tourism in India. Thus, generating positive statistics and providing significant sustainable strategies for further improvement in the Aquaculture industry. Policymakers and researchers need to focus more on implementation of best techniques and technology to develop Indian traditional products and their usage in traditional medicinal system 'Unani'.

**Keywords:** Unani system of medicine; Pearl-Marwareed; Aquaculture practice; safety contour; sustainable strategies.

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## Unani Medical System in India

It originated in Greece, was developed by Persian and Arab physicians who brought the system to India part of the various alternative medical systems of India which include Ayurveda, Naturopathy, Siddah and Homeopathy. The Indian subcontinent has been a permanent home for the growth in Unani science and medicines. Currently, India is the global leader

of Unani medicine and has its wide network of a well-organised and functional network of educational, healthcare, research and Pharmaceutical institutions (Ur-Rahman, 2013). This system is popular among masses with Unani Hakeem (physicians & practitioner) scattered across the nation. The vital role is to form an integral part of national health care delivery structure (AYUSH, 2019)

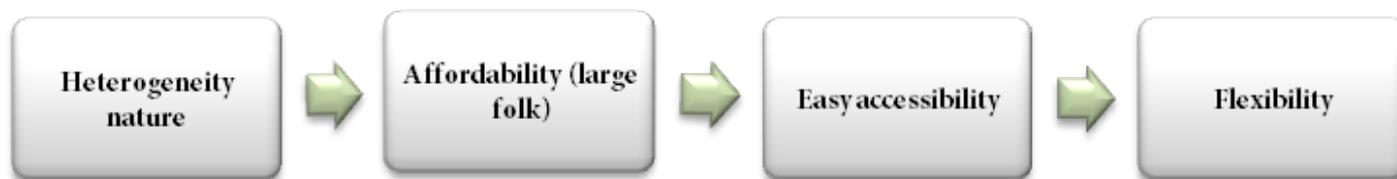


Figure 1. Advantageous attributes of Indian System of Medicine (AYUSH) (Author's source)

Figure 1 demonstrates the beneficial and advantageous attributes of the Indian systems of Medicine which include Ayurveda, Yoga, Unani, Siddah and Homeopathy commonly known as AYUSH. Tender steps are being taken by the Government and great dedication and consideration are provided to the multi-facet advancement of Unani medical system to use its potential strength in Indian healthcare services. Despite several measures taken Unani has not gained much recognition in the ultra-modern planet. According to Itrat (2016), this is due to the lack of research data and lack of adequate accepted research methodology for understanding and evaluating Unani medicine. Indeed, it is fascinating and incredible the work of these Unani practitioners and physicians in using these remarkable resources

into their drugs to cure the illness since it has become a part of the mainstream system of medicine in India, Bangladesh, the Islamic Republic of Iran, Pakistan (WHO, 2010). Although several researchers are working to find solutions for many diseases, this system still has not gained popularity in the modern world among the developers in this field, despite the beneficial fact for the patients.

Ideally, India would blend both its traditional and conventional medicinal systems to provide the best care to its medical patients in the best feature that matches each system and grants allowance to compensate each other's' weakness in the field of treatment and research.

## Islamic perspective of Unani medicine

Although this formal medicine was developed by the Greek physician Hippocrates (Irfan, 2011), the latter portion was established by the Persian, Arab physicians. One such great scholar who wrote many books but one such book caught fame chiefly was '*al-Qanun*', the classical medical book in which the great Muslim physician and Polymath Ibn Sina popularly referred to as 'The Prince of Physicians' wrote and constituted the Proponents of Tibb al-Unani (Avicenna-Ibn Sina, n.d.). Eventually, this famous book became the Medical authority and influenced the development of Medical science and its therapeutics. Tibb Unani is basically Greco-Islamic medicine (Leslie *et al.*, 1992) and the literature was originally translated from Greek to Persian, then secondarily into Arabic text, by the Muslims who were non-Arabic.

Unani medicine is considered as the Halal version of Indian pharmaceuticals and drug industry (Islam & Chandrasekaran, 2013). It is the best alternative for non-alcoholic and vegetarian consumers for its Halal conscious aspect and its composition. A new term with core holistic principle has evolved in recent studies called Halalopathy (Cochrane, 2019). According to Jawad Alzeer, this Halalopathy is not new, but the approach was advanced by the Greeks and propagated by Islamic polymaths including Ibn Sina, al-Biruni and al-Razi (Cochrane, 2019) whose influence is apparently present in the Asian countries and referred to as Unani. Good health and sickness are closely related in Islam as it teaches Muslims to be more understanding of the concept of suffering and death which is considered as part of life. Muslims believe everything that is bestowed upon us is by the will of God and indeed it is a test for humanity. Thus, Prophet Muhammad Peace be Upon Him (PBUH) has shared the importance of showing respect for the body and maintaining it with good health. One such Hadith says: '*Your body has a right over you*' (Unity, 2017) and the Prophet PBUH also stated that '*Verily there is no disease that Allah has created, except that He also created its cure*' (Bukhari) (Rassool, 2014). In addition, health in Islam is based on the regime of hygiene/cleanliness which is a part of faith. Therefore, creating a better and healthy community to fight against illness. Physicians must possess the quality of mercy and without the permission of Allah it is impossible to deal with mutual respect between both parties: The physician and the patient. Consequently, in Islam, the reward of caring for a sick person is high and will be multiplied if done with proper treatment and intention.

## Methodology and Data Analysis

The research was carried out based on the interest of Aquaculture in relation to its component usage in the age-old Unani system of medicine. Both primary and secondary sources were utilised to generate results. Personal interviews with several well acquainted Hakeem (Unani physician) (Usmani, 2018) were conducted to collect the data on resources used during the preparation of drugs and to compile a percentage figure based on the data received. Data on the usage of pearl as an ingredient in Unani drugs, its effectiveness, proportion and safety contour of drugs were collected and compiled through published articles and personal interviews. Information from various publications was used to analyse the current trend of Aquaculture practice in India and the significance of pearl usage in Unani.

**Table 1.** Medical Stakeholder roles in Traditional Healthcare system

Role in Medical system	No. of Interviewees
Government Unani Administrators	3
Private Sector Unani Hakeem	3
Public Sector Unani Hakeem	2

Interviews (n=6) were conducted both in English and Urdu. Digital recorders were used during interviews and each interview was later transcribed by the author. After successive transcription, all data were surveillance closely for potential criteria of this study.

## Usage of Aqua-animal based component (Pearl) in preparation of Unani Medicine

Unani is one of the oldest medicinal systems based on its validity of principles in addition to its method of treatment. Pearls are calcareous concretions (Dubey, Dubey, Mehta, Saluja, & Jain, 2009) which are formed as protection against the minute particles or parasites which penetrate between the mantle and shell causing irritation in the mollusc. Consequently, these foreign objects deposit and form as an irregular or spherical shaped blister under the layer of the shell obtaining Pearl. The Unani common name given to pearl is 'Marwareed' (Jamal *et al.*, 2006). Very frequent usage of pearl powder is at the highest rank in the pharmaceutical and cosmetic industry. Pearl is used in ash form for its potential as an oral immunomodulator (Elahiet *et al.*, 2014). Therefore, pearl used in ash, calcinated and powder form is used to treat various illnesses which include heart weakness, myocardial degenerations, tuberculosis and habitual abortions (Elahiet *et al.*, 2014). These gems have been adored and admired as a symbol of beauty and power. Studies reported ancient Ayurvedic and Unani physicians have used powdered pearls in their medicines (Modayil & Kripa, 2001). However, they stated the whitening effect of the toothpaste was most probably due to the chemical effect. The market for halal food and products is growing robustly, both domestically and internationally (Zakaria & Buang, 2004).

Usage of pearl powder in Unani and Ayurvedic medicines is believed to generate cosmic energy and cure several illnesses (Jadhav, 2009). Whereas the unique preparation of Herbo-mineral (botanical herbs and mineral pearl) used for treating Tuberculosis, Diabetes, Asthma, cough (Wavareet *et al.*, 2014). Several preparational method this gem is mentioned in Unani therapeutics (Wavareet *et al.*, 2014).

Numerous formulations are used in different dosage for the cosmetic purpose in which the term is usually referred to as cosmeceutical. Some formulation contains a single dose of herb (plant-based), mineral/metal or animal-based origins like amla, almonds, neem, pearl, cucumber, aloe vera, clay and a few others to sought as a drug, thus (Begum & Idris, 2016) claiming to be scientifically validated to prove the accuracy of Unani medicine.

## Aquaculture management in Pearl Oyster in India

Aquaculture practice is worked out on an annual basis in India (Sathia Dhaset *et al.*, 2009). The Aquaculture industry has seen tremendous growth in the last few decades, India with the production of approx. 2.3 million tons per annum (Sathia Dhaset *et al.*, 2009) is considered as the second largest Aquaculture producer. Despite its contribution is only around 5% out of the entire global production. India practises a traditional method

of coastal aquaculture. The Indian version of pearl is named as Mukta. The Aquaculture industry has seen a remarkable expansion in recent years with major development in states like Andhra Pradesh, Odisha, West Bengal, Karnataka, Tamil Nadu and Punjab (Mishra, 2017). In general, pearl production is a challenging task 'for the suite of numerous factors and processes that need to be understood and mastered' (Charpy & Lo, 2012). The technique of pearl culturing was initially started by the Chinese where pearl objects were first developed in freshwater mussel (Modayil & Kripa, 2001). These precious gems were used in old Traditional Chinese medicines.

Realising the utmost importance of pearl culturing, the Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, India, initiated research in 1987 and evolved base technology for growing pearl freshwater environment (Ram, 1997). The process to culture pearl involves various implantation procedures. The culture of implanted mussels requires both biological and physiochemical conditions (Ram, 1997).

The opportunity to cultivate approximately 73 different marine organisms are highly potent for the pharmaceutical/ drug industry due to its importance which includes finfishes, crustaceans, MOLLUSCS, seaweeds and sea cucumber (Devaraj & Appukkuttan, 2000) along the shallow coastal region. The natural resource of pearl oysters is found in the Gulf of Mannar and Gulf of Kutch (SathiaDhas et al., 2009), it requires a long-term investment for a successful process due to the high demand of pearls which are classified into categories based on their quality, size and shape and uniformity of coating. Indian pearl market has been preparing to enter the world's largest pearl merchandising business. This could not be possible without extensive planned research and developmental strategies constructed to grow and produce 'two types of pearls — golden and black pearl (Modayil & Kripa, 2001) in order to enter the international market for marine pearl industry.

### Safety Contour of Unani medicine

The profile of Unani medicine is < 92% of medicinal plants and herbs used. Basically, these drugs are from herbal sources, therefore making them a herbal product or therapy for easy consumption. While the rest > 5% is from minerals, metallic and animal origin. The speciality is these drugs are collected and processed by the Unani physicians themselves based on the essential proportion.

Figure 2 illustrates the percentage of various resources used in the preparation of Unani drugs. These data regarding the resources used during the preparation were obtained from several Unani practitioners and physicians (Usmani, 2018) across India and from primary sources.

Despite the search for new research techniques and preparation of Unani medicine, valid data are yet to be confirmed based on its physicochemical parameters and activities (Wavare et al., 2014). Nationwide seminars are conducted in favour of Unani profound scholars, academicians to highlight treatments for various non-communicable diseases such as hypertension, mental illness, diabetes, obesity and many more through Unani system. "Clinical and pharmacological studies are being carried out at different Unani research institutions and hospitals of India showing good results" (INDIA, 2018).

### Implementation of Significant Sustainable Strategies in utilisation of Pearl in Unani

1. The subsequent measures will contribute to the sustainability of pearl production and its usage in Unani. In collaboration with government policies, extensive positive factors can have a huge impact on the industry.
2. Creating awareness and promoting good farm management practice in the Indian aquaculture industry.
3. Development of human resource administration.
4. Environment awareness program.
5. Monitoring and constant recording of Ecosystem health.
6. Investigating the potential utilisation of pearl in Unani drugs as Aqua medicine.
7. Setting a proper design research chart to support Aquaculture farmers in India.
8. Promotion of positive and effective socio-economic environment for the local pearl communities.
9. Need for future Government policies to set sustainable schemes to encourage pearl farming in collaboration with Unani Drug Labs.
10. Require great technology with government intervention.
11. Largely organised and coordinative efforts to promote the Unani system of medicine in Southeast countries due to its Muslim friendly nature.

### Challenges faced

There is a vast difference in the methodical and technical teachings of medical systems such as Ayurveda, Unani and Siddha (AUS) in India. This is especially with the domestic market contributing more to the demand and supply of freshwater aquaculture products, lack of proper infrastructure processing facilities (Jong, 2017) impairs the access to quality products. The pattern differs among areas. "Poor exposure to clinical skills, poorly equipped colleges and reliance on rote learning are major deterrents to quality AUS physicians" (Patwardhan, 2019). Promoting traditional herbal medicines comes with more challenges (Sen & Chakraborty, 2016) such as; 1. Quality and administration issues, 2. Infrastructure and technology issues, 3. Irrational Clinical issues, and 4. Lack of adequate R&D.

### Conclusion

Based on the pharmacological effect of the (pearl-marwareed) dose; prepared in accurate proportion by Hakeem (Unani physician) the effect could change with a different dose

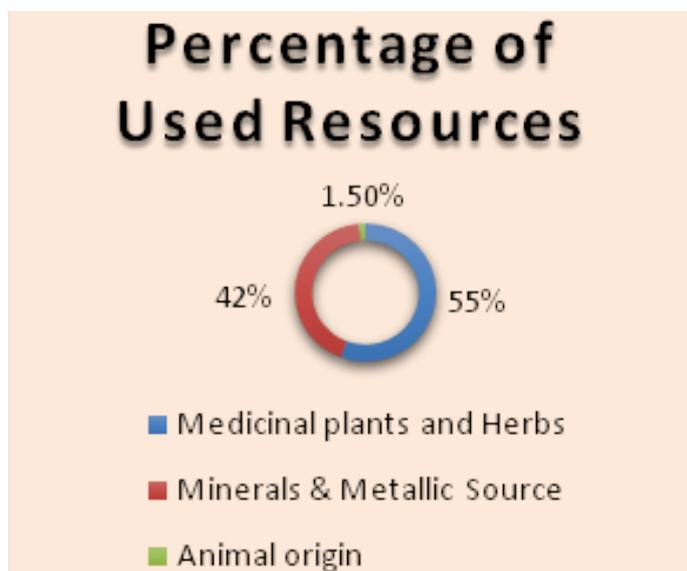


Figure 2. Percentage of resources used in preparation of Unani Drugs (Author's source)

of the same drug. Mainstreaming quality of Health and usage of herbal traditional medicine will provide the functionality of these gems in Unani medicine which is consumable, ensuring the Halal factor and the quality of the medicine and cultured pearl used. Since it attracts more Muslim medical patients who are also domestic and international medical tourists. The country must support qualified physicians and practitioners of this traditional medicine by establishing strong systems for accreditation and licensing the Unani dispensaries or clinics with Halal certification from well-organised and focused Halal certification bodies namely Halal India and others. Considering the requirements and safety of medical patients, the practitioners must upgrade their knowledge and skills of having better communication between traditional physicians and conventional providers.

The higher potentiality the better the progress and prospects of the Traditional System. If both Ministry of AYUSH and Ministry of Tourism join together, the possibility of a winning situation will be elevated for AYUSH and promotion of Traditional Medical Tourism in India. Proper investment opportunities for pearl farmers can generate high quality of pearl production with improvement in aquaculture practice across farming regions. Therefore, providing a better business venture for pearl farmers inclusive of good lifestyle through Unani.

## Conflict of Interest

The authors declare that there is no conflict of interest in this work.

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