

Aquaculture practices to sustain Unani from marine based component Pearl

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Abstract:

Unani medical system is a holistic approach of science and human body. It is a natural and simple method of extracting from nature and based on the way body responses. Although several researches are working to find solutions for many diseases, this system still have not gained the popularity in the modern world for the developers in this field and beneficial for the patients. This paper explains the importance of sustaining the Unani system and drugs made from component (Pearl- Marwareed) obtained from 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 preparation. The data were collected from personal interview with several Hakeem across India and extensive literature. And recommendation to promote Unani medical tourism in India. Significant sustainable strategies are suggested for further improvement in Aquaculture industry. Policy makers and Researchers need to focus more on implementation of best techniques and technology to develop Indian Aquaculture products and they usage in traditional medicinal system 'Unani'.

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

1.Unani Medical System in India:

Originated in Greece, developed by Persian and Arab physicians who brought the system to India part of the various alternative medical systems of India which includes 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 well- organized 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)

Fig 1 demonstrates the beneficial and advantageous attributes of the Indian systems of Medicine which includes Ayurveda, Yoga, Unani, Siddah and Homeopathy commonly known as AYUSH.

Tender steps are been taken by the Government and great dedication and consideration is 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 ultra-modern planet. According to (Itrat, 2016) lack of research data and lack of adequate accepted research methodology for understanding and evaluating Unani medicine. Indeed it is fascinating and incredible work of these Unani practitioners and physicians to use these remarkable resources into their drugs to cure the illness since it has become a part of mainstream system of medicine in India, Bangladesh, Islamic republic of Iran, Pakistan (WHO, 2010).

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

1.1 Islamic perspective of Unani medicine:

Although, this formal medicine was developed by the Greek physician Hippocrates (Irfan, 2011) but 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 as 'The Prince of Physicians' who wrote and constituted the Proponents of Tibb al

Unani (Avicenna - Ibn Sina, n.d.). Eventually, this famous book became the Medical authority and influence the development of Medical science and its therapeutics. Tibb Unani is basically Greco-Islamic medicine (Leslie, Charles, & Young, 1992) and literature were 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). A best alternative for non-alcoholic and vegetarians' 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 Greek and propagated by Islamic polymaths including Ibn Sina, Al-Biruni and al Razi (Cochrane, 2019) whose influence is apparently present in the Asian countries referred to as Unani. Good Health and sickness are closely related in Islam as it teaches Muslim to be more understanding towards the concept of suffering and death which is considered as part of life. Muslim believes that everything is bestowed upon us is by the will of God and indeed it is a test for humanity. Thus, Prophet Muhammad (pbuh) has shared the importance of showing respect for the body and maintain 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). Therefore, 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. Physician 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, the reward of caring for a sick person is high and will be multiplied if done with proper treatment and intention in Islam.

2.Methodology:

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 utilized to generate results. Personal interview 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 usage of pearl as ingredient in Unani drugs, their effectiveness, proportion and safety contour of drugs were collected and compiled through published articles and personal interview. Information from various publication were used to analysis the current trend of Aquaculture practice in India and the significance of pearl usage in Unani.

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

Unani is one of the oldest medicinal system 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 penetrates between mantle and shell causing irritation in mollusk. Consequently, these foreign objects deposits and forms as an irregular or spherical shaped blister under the layer of the shell obtaining Pearl. Unani common name given to pearl is 'Marwareed' (Jamal, Siddiqui, Tajuddin, & Jafri, 2006) Very frequent usage of pearl powder is at the highest rank in pharmaceutical and cosmetic industry. Pearl is used in ash form for its potential as oral immunomodulator (Elahi, Singh, Ali, & Khan, 2014). Therefore, pearl used in ash, calcinated and powder form are used to treat various illness which includes heart weakness, myocardial degenerations, tuberculosis and habitual abortions (Elahi, Singh, Ali, & Khan, 2014). These gems have been adored and admired as a symbol of beauty and power. Studies says ancient Ayurvedic and Unani physicians have used powered 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 illness (Jadhav, 2009). Whereas this unique preparation of Herbo-mineral used for treating Tuberculosis, Diabetes, Asthma, cough (Wavare, Kadam, Sheth, & Sawant, 2014). Although several method of preparation of this gem is mentioned in Unani therapeutics (Wavare, Kadam, Sheth, & Sawant, 2014)

Numerous formulation are used in different dosage for cosmetic purpose the term usually referred as cosmeceutical. Some formulation contains single dose of herb (plant based), mineral/ metal or animal based origin like amla, almonds, neem, **pearl**, cucumber, aloevera, clay and few other to sough as a drug, and (Begum & Idris, 2016) claims scientifically validated to prove the claims of Unani medicine.

2.2 Aquaculture management in Pearl Oyster in India:

Aquaculture practice were worked out on an annual basis in India (SathiaDhas, Najmudeen, & Prathap, 2009). Although, Aquaculture industry has seen a tremendous growth in last few decades, India with the production of approx. 2.3 million tons per annum (SathiaDhas, Najmudeen, & Prathap, 2009) is considered as the second largest Aquaculture producer. Despite its contribution is only around 5% out of the entire global production. India practices a traditional method of coastal aquaculture. Indian version of pearl is named as Mukta. 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 were pearl objects where first

developed in fresh water mussel (Modayil & Kripa, 2001). These precious gems were used in old Traditional Chinese medicines.

Realizing 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 physico – chemical conditions (Ram, 1997).

The opportunity to cultivate approx. 73 different marine organisms which are highly potential for pharmaceutical / drug importance including finfishes, crustaceans, MOLLUSCS, seaweeds and sea cucumber (Devaraj & Appukkuttan, 2000) along the shallow coastal region. The natural resource of pearl oyster is found in the Gulf of Mannar and Gulf of Kutch (SathiaDhas, Najmudeen, & Prathap, 2009), it requires a long term investment for 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 merchandizing 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 in international market for marine pearl industry.

3.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 it a herbal product or therapy for easy consumption. While the rest > 5% is from minerals, metallic and animal origin. The specialty is these drugs are collected and processed by the Unani physicians themselves based on the essential proportion.

Hence the **Fig 2**, illustrates the percentage of various resources which is used in the preparation of Unani drugs. This data regarding the resources used during the preparation was obtain 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 is yet to be confirmed based on its physico-chemical parameters and activities (Wavare, Kadam, Sheth, & Sawant, 2014). Nation wide seminars are conducted in favor 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).

4. Implementation of Significant Sustainable Strategies in utilization of Pearl in Unani:

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 huge impact in the industry.

1. Creating awareness and promoting good farm management practice in Indian aquaculture industry.
2. Development of Human resource administration.
3. Environment awareness program.
3. Monitoring and constant recording of Ecosystem health.
4. Investigating the potential utilization of pearl in Unani drugs as Aqua medicine.
5. Setting a proper design research chart to support Aquaculture farmers in India.
6. Promotion of positive and effective socio -economic environment for the local pearl communities.

7. Need for future Government policies to set sustainable schemes to encourage pearl farming in collaboration with Unani Drug Labs.
8. Require great technology with government intervention.
9. Largely organized and coordinative efforts to promote Unani system of medicine in Southeast countries due to its Muslim friendly nature.

4.1 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. Especially with the domestic market which contributes 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)

5. Conclusion:

Based on the pharmacological effect of the (pearl-marwareed) dose prepared in accurate proportion by Hakeem (Unani physician). Therefore, the effect could change with different dose of the same drug. Recently study showed that addition of these tiny precious gem are not only used in medicine but are commonly used in products which are utilized in our daily life like the commercial whitening toothpaste were using abrasive agent like sodium carbonate and pearl powder (Mahanani, Arief, & Samuel, 2009)

Currently, efforts need to be taken on good aquaculture practices on pearl culture and the functionality of these gems in Unani medicine which are consumable, ensuring the Halal factor and the quality of the medicine and culture 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-organized and focused Halal certification bodies namely Halal India and others. Considering the requirements and safety of the medical patients, the practitioners must upgrade their knowledge and skills of having better communication between traditional physicians and conventional providers.

Recent studies show that biomedical sciences are struggling to find solid solutions for NCD (Non-communicable diseases) but “AYUSH systems have immense potential to tackle them” (Patwardhan, 2019). The higher potentiality the better the progress and prospects of the Traditional System. If both Ministry of AYUSH and Ministry of tourism join together that the possibility of winning situation will be elevated for AYUSH and promotion of Traditional Medical Tourism in India. Standardizing proper investment opportunities for pearl farmers can generate high quality of pearl production with improvement in aquaculture practice across farming regions. Therefore, providing better business venture for pearl farmers inclusive of good lifestyle through Unani.

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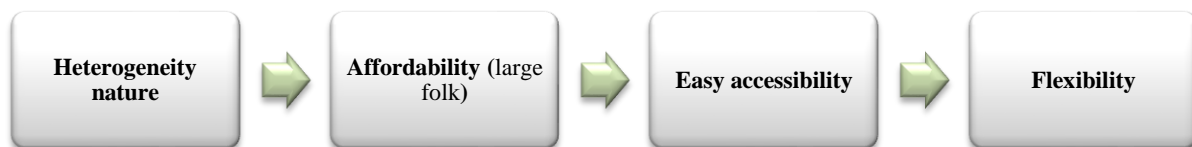


Figure 1: Advantageous attributes of Indian System of Medicine (AYUSH) – Author’s source

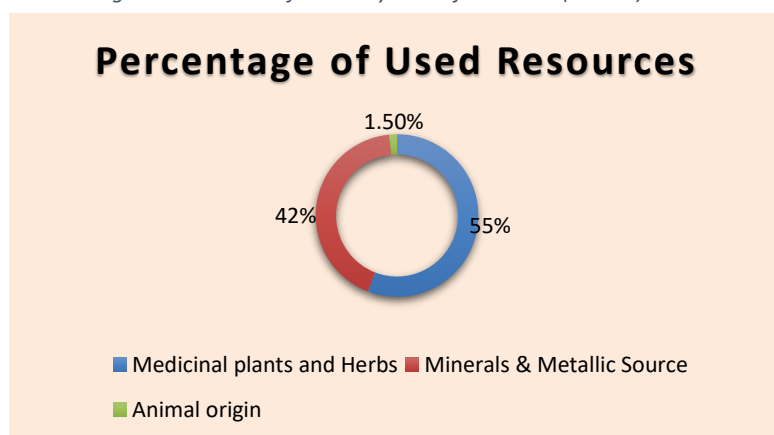


Figure 2: Percentage of Resources used in preparation of Unani Drugs (Author's source)

