

Forest of Ilm: A Tawhidic Reflection on Nature and Pharmaceutical Knowledge and Research

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Editorial

Nature has long served as one of the most fundamental sources of knowledge and guidance for human civilisation, particularly in the field of medicine and pharmacy. Modern pharmacology continues to benefit from natural sources in the discovery and development of therapy. However, contemporary scientific practice often approaches nature through a predominantly utilitarian and reductionist lens, viewing it largely as a reservoir of extractable compounds for new therapy discovery. This article revisits a more holistic framework rooted in Islamic Worldview where nature is understood not only as a material resource, but also as a trust (*Amanah*) and a source of spiritual and metaphysical knowledge. The article also highlights how principle of Tawhid and moral accountability has shaped earlier scientific inquiry by earlier generation of muslim scientists, particularly in pharmacology and natural product research. Using Forest of Ilm at International Islamic University Malaysia (IIUM) Kuantan as a contemporary case example, the article argues for an integrated approach to scientific research that harmonises empirical investigation with ethical responsibility and spiritual reflection.

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Introduction

Nature has consistently served as one of humanity's most fundamental source of knowledge and guidance, shaping the development of science, medicine and civilisation across diverse cultures and historical periods. Within the Islamic intellectual tradition, the interaction with nature is framed through the complementary analysis of two interconnected sources: 1) the revealed book, the Quran and 2) the book of cosmos (*Kitab al Kawn*). Together, these sources provide an integrated epistemological foundation in which the natural world is studied as a meaningful manifestation of divine order and wisdom. Re-engaging with this holistic framework necessitates deeper reflection on the ethical, metaphysical, and moral dimensions of scientific inquiry, ensuring that interaction with nature remains guided by responsibility, purpose, and reverence for the natural order.

Translating the above integrated worldview into contemporary academic practice requires more than conceptual acknowledgment, it depends on institutional leadership in shaping the research culture and scholarly direction. In this regard, the visit of the Honourable Rector of IIUM, Prof. Dato' Dr. Osman Bakar to Kulliyyah of Pharmacy IIUM on 11 June 2025 marked a significant moment of intellectual and spiritual alignment for the academic institution. In his address, he drew attention to the preserved Forest of Ilm where he highlighted its link to a legacy of previous scholars and its role as source of knowledge and inspiration. He urged fellow academicians and researchers to think beyond routine scientific experiments and to revisit the deeper foundation of scientific Inquiry (Bakar 2025). His message reinforced the relevance of Quranic-cosmological framework in guiding research that is both scientifically rigorous and ethically grounded, thereby providing an important context for re-examining how nature is approached within pharmaceutical research at IIUM.

Central to the message above is the recognition of the natural environment as a vital source of knowledge rather than a mere recreational space. This perspective is exemplified by the Forest of Ilm,

located adjacent to Kulliyyah of Pharmacy IIUM. Conceived as a conservation and educational project, the Forest of Ilm is a designated forest area within the IIUM Kuantan campus that functions as a living laboratory for teaching, learning, and research. It is preserved to support scholarly activities related to therapeutic discovery from natural sources and embodies a practical expression of the above integrated worldview, where scientific exploration of nature is conducted with ethical awareness, ecological sensitivity, and humility (IIUM 2024).

Nature as a Trust from Allah

Modern pharmacology has long benefitted from nature as a source of therapeutic agents (Newman and Cragg 2016). Unfortunately, current scientific practice often views nature through a relatively narrow and utilitarian framework where the nature is regarded as a source of extractable compounds for commercial factor. In contrast, the Islamic scientific tradition pioneered by earlier Muslim scholars like Ibnu Sina, Al Razi, and Al Zahrawi, offers a more ethical framework in dealing with nature and its resources (Açikgenç, A. (2014; Ashimi 2018; Saad & Said 2011; Saad 2014). Guided with principles of Tawhid, nature is firstly regarded as a trust entrusted to human being and not a lifeless object to be exploited. Humans are entrusted with the care of the earth and not granted unrestricted ownership. These scholars generally viewed the natural world as an extension of the spiritual self hence in extracting the botanical resources, they would advocate for 'gentle medicine' to minimise ecological impact to the surrounding. The 'gentle medicine' framework by Al Razi and Ibnu Sina suggested a stepwise approach to treatment where physicians should first manage through diet, followed by simple medicines and only use complex drugs when necessary (Saad 2014; Saad 2015; Tibi 2006)). By applying the balance and trust through this concept, they developed a much-needed therapeutic guideline that prevents the overextraction of natural compounds, hence aligns with nature preservation. This principle has direct implications to modern pharmaceutical research, particularly in areas like natural product discovery

and herbal medicine, that often view plants as simply 'raw materials' for compound isolation while Islamic framework views them as a divine trust. This is the worldview shaped and influenced the work of early Muslim scholars who have made significant contributions to the scientific discovery, including pharmacology and therapeutics through observation of natural resources such as plants. This responsible approach by earlier Muslim scholars may serve as blueprint for better treatment prescription that reduces 'chemical load' on patients and the environment.

Nature as a Source of Knowledge and Scientific Exploration

Nature, including forest of rich biodiversity, serves as a rich source of various forms of knowledge, encompassing the physical and metaphysical, the scientific and spiritual, the quantitative and qualitative, as well as the practical and the aesthetic aspects. Each of these forms of knowledge emerges from the aspects of nature that have been chosen for investigation. Modern science, however, has largely restricted its focus to selected material dimensions, which include compound identification and extraction from plants and herbs for therapeutic purposes. The reductionist and materialistic worldview in modern science have marginalised or denied the metaphysical and spiritual dimensions of nature (Bakar 2008).

From an Islamic perspective, nature is not merely a physical or material aspect but also a source of spiritual and metaphysical knowledge. Islam affirms the interconnection between the natural and spiritual realms, whereby the world that we humans observe serves as a medium for divine message (Bakar 2008; Nasr 1996). In the Quran, the nature and its phenomenon are consistently presented as signs of God, prompting reflection beyond their empirical features. This worldview is clearly indicated in the following verse: *"We will show them Our signs in the universe and within themselves until it becomes manifest to them that this (the Quran) is the truth...."* (41:53).

The Forest of Ilm serves as a reminder that nature is not merely a collection of raw materials but sign of

divine balance from Allah the Almighty. Studying nature requires humility, patience, and respect for their ecological roles and limits. In this regard, ethical and sustainable research practices are not just scientifically necessary but also ethically obligatory. Scientifically, the forest also reminds us that the most sophisticated chemical synthesis is continuously occurring in the roots, leaves, and fruits of the flora around us. It is a microcosm of the planet's biodiversity, offering treasures that remain hidden to those who fail to approach nature through holistic view.

The scientific knowledge and technologies which include the therapeutic discovery from the study of nature, are undoubtedly necessary for the human life. The Muslim physicians and scientists of the golden age of Islamic civilisation are well known for their significant contribution in discovering new therapy (Hassan 2018). The likes of Al Razi, Ibnu Sina, Al Zahrawi, and Ibnu Baytar are among those who revolutionised pharmaceutical practice by transitioning medicine to a rigorous and evidence-based discipline. Ibnu Sina authored the monumental Canon of Medicine where he codified and described approximately 800 tested natural drugs and established the fundamental rules for clinical drug trials (Nasr 2001; Saad and Said 2011). He is also credited in pioneering steam distillation, which is a method to extract the essence of plants for therapy (Saad and Said 2011). On the other hand, Ibnu Baytar emerged as the greatest botanist of his time, documenting over 1400 medicinal items, including hundreds of new plant species used in nature-based therapies (Nasr 2001; Saad and Said 2011).

Those great achievements were not a secular pursuit but deeply rooted in a worldview where nature was viewed as a 'book' to be read alongside the Quran, to discover the Signs of the Creator (Hassan 2018). For these believing scientists, there was no separation between faith and knowledge, and to them, studying the intricate properties of medicinal plants was also an act of contemplation and a means of worshipping God through novel discovery (Hassan 2018). This worldview should remain as basis for contemporary forms of natural product and herbal research that are consistent with

Tawhidic epistemology, adopting a holistic, ethical and purpose-driven approach (Hassan 2018; Bakar 2025). Within this framework, research encompasses Prophetic medicine (*Tibb al-Nabawi*) (El Seedi et al 2019; Dumiadi and Razlini 2024), halal nutraceutical development (Herdiana et al 2024; Dumiadi and Razlini 2024), ethical ethnobotanical research grounded within role as *khalifah* (Alshaqhaa et al 2025; Ramya et al 2024), holistic pharmacology emphasising balance (*mizan*) and eco-pharmacological studies that examine plants within their ecological symbiosis (Takubessi et al 2025). Collectively, these approaches reflect a harmony of scientific excellence rooted in faith, ethics and responsibility.

Nature as Signs of God and Guidance

From cosmological worldview of the Quran, Muslim scholars and scientists derived a solid and coherent foundation in understanding the relationship between God, nature, and humanity. Fundamental to this worldview is the recognition that: 1) the cosmos, encompassing the universe, the natural environment, human beings, and all natural endowments, ultimately belong to Allah the Most Gracious (Hassan 2018; Nasr 1996), 2) all elements of creation are described as being in a state of submission to the divine will, continuously glorifying and praising Allah in modes that transcend beyond human perception (Hassan 2018; Qutb 2003)), and 3) the whole of creation, including aspects of human nature as manifestations of divine signs, which appear in diverse forms and contexts, collectively point to the existence, oneness, omnipresence, omnipotence, wisdom, goodness, compassion, and other attributes of God the Almighty (Bakar 2008; Hassan 2018).

Within this theological framework, the forest and its botanical resources are not to be regarded as merely as reservoirs of bioactive compounds for pharmaceutical research. Rather, these plants themselves constitute *āyāt* (signs) of Allah, embodying divine wisdom through their intricate biochemical structures, therapeutic properties, ecological balance, and sustained provisions for human beings (Bakar 2008; Hassan 2018; Nasr 1996;

Saad and Said 2011). The study of medicinal plants thus extends beyond empirical analysis to become an act of *tafakkur* (contemplative reflection), through appreciation and recognition of the unity of creation under the principle of Tawhid. In this way, pharmaceutical research grounded in forest biodiversity is situated within a broader spiritual and ethical horizon, where identifying therapeutic benefits from nature simultaneously entails recognising the signs of the Creator, as well as fulfilling *khilafah*'s role in safeguarding the nature and environment.

Conclusion

In conclusion, this article argues for re-orientation of pharmaceutical research toward an integrated framework that harmonises scientific excellence with ethical responsibility and spiritual awareness. The Forest of *Ilm* stands as a tangible reminder that nature is not merely a resource to be exploited, but a trust to be studied, preserved, and respected. Re-engaging with nature through a Tawhidic framework would allow pharmaceutical research to shift beyond dominant reductionist and utilitarian lens toward a more holistic and sustainable ethos.

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