

## **Ibn Al-Baitar: The Pioneer of Botanist and Pharmacist**

**By:**

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### **Abstract**

*Ahmad Ibn Al-Baitar was one of the greatest scientists of Muslim Spain and also a well-known botanist and pharmacist of a Middle Ages. By using all the knowledge he learnt from Abu Al-Ábbas, he start collecting plants in and around Andalusia before he left Spain for plants collecting expeditions and travel along the North African coast before he authored his valuable books at Egypt. Ibn Al-Baitar's major contribution, Kitab Al-Jame', described about the basic medicines and nutrients derived from plants, animals, and minerals which hold a high status among botanist up to 18<sup>th</sup> century. He did not write something without first having observation and he had full confidence in inferences and deductions. Besides that, Ibn Al-Baitar was the first who specifies the timing of medicines, which one to be taken during the night and which were to be taken during the day.*

*Keywords: Botanist, Pharmacist, Al-Jame', Islamic medicine, Muslim scientists*

## **INTRODUCTION**

### **1.1 Project Background**

Botany can be defined as the science of plant life and a branch of biology. It also can be called as plant sciences or plant biology. A person who studies plants will be known as a botanist or a plant scientist. Nowadays, botanists study approximately 400 000 species of living organisms of which some 260 000 species are vascular plants and about 248 000 are flowering plants (Addelson, Barbara December 2003). Herbs are group of plants that are used for medical purposes. Thus, botany and herbs is related to each other. Botany originated in prehistory as herbalism with the efforts of early humans to identify and later cultivate, edible, medicinal and poisonous plants, making it one of the oldest branches of science. (Acharya, Deepak; Anshu, Shrivastava 2008)

Among the Muslim botanists, Ibn Al-Baitar is known as the pioneer of botanists and pharmacist. Previously, when the Roman Empire disintegrated, its tributary economy disappeared, civilization collapsed and all development stagnated. This dismal prevailed until the establishment of Islam when the Muslim Agricultural Revolution transformed and the essentials of life and its environments. Ibn Al- Baitar like to create a phenomenal repertoire in the field of botany. The progress of Muslim scientific knowledge then continued uninterrupted for several centuries.

## 1.2 Problem Statement

People will take medicine based on doctor's advice when fall sick or feel pain and these medicine will relieved pain in a short time. However, the use of modern medicine will give several bad effects when it is consumed regularly. It happened because the modern medicine contains lots of chemical substance that unsuitable or dangerous to human's body. There are many citizens of several country in the world are having health problems due to effects of having modern medication. Therefore, this problems has bring interest for us to review and analyze the medication method used during the golden age of Islam. One of the famous Muslim scientist that has contributed lots of research in herbs and pharmacy was Ibn Al-Baitar. His findings that had been compiled in his books has become references for other scientist from all over the world.

## 1.3 Research Objective

To study the history and benefits of herbs that had been introduced by Ibn Al-Baitar.



Figure 1. Herbs

## 2.0 THE PIONEER OF BOTANIST AND PHARMACIST

### 2.1 Ibn Al-Baitar

Ahmad Ibn Al-Baitar was born in the Andalusian city of Malaga in the year 1197 CE. He received his education in Seville under the guidance of Abul Abbas Ahmad as a physician. He had a great interest in botany, which he learned from his teacher who was also a botanist. He first start collecting plant in and around Andalusia. In 1219 CE he left Spain on a plant collecting expedition and traveled along the northern coast of Africa and some part of Asia Minor. In the year 1224 CE he entered the service of Malik al-Kamil, the Egyptian ruler, and was appointed chief herbalist. Al-Kaml extended his kingdom to Damascus, and Ibn Al-Baitar accompanied him there, which provided him an opportunity to collect plants in Syria, Palestine, and a good part in Iraq.

Ibn Al-Baitar was the great botanist, pharmacist and physician of the middle ages. He is credited for introducing early scientific method in experiments. His major contribution, *Kitab al-Jami fi al-Adwiya al-Mufrada* (Book of Simple Drugs and Food) is one of the greatest treaties of botany dealing with medical plants. It enjoyed a high status among botanists up to the 18<sup>th</sup>

century. The treatise comprises some 1400 different items, largely medicinal plants and vegetables, of which about 300 plants were new, not known earlier. The book refers to the work of some 150 authors, mostly Arabs, and it also quotes some early Greek Scientists. Ibn Al-Baitar's second monumental work, *Kitab al-Mughni fi al-Adwiya Mufrada* (Comprehensive Book of Drug and Nutrition) is an encyclopedia of medicine.

He critically studied medicinal plants and relevant literature from Greece, Spain, North Africa and Turkey, as a result of which he prepared more than 150 manuscripts. He has enumerated the properties more than thousand items like plants, minerals, and animals. The drugs are listed in accordance with their therapeutic value. The different chapters deal with the plants bearing significance to disease of different parts of the body. On surgical issues he has frequently quoted the famous Andalusian surgeon, Abul Qasim Zahrawi. Beside Arabic, he has given Greek, Latin, Spanish, and Berber names of plants, thus facilitating transfer of knowledge to Europeans and the reader.

Ibn Al-Baitar took great care in selecting the plants to be used as medicine or as food. He even indicated the timing of the medicines, which one to be taken during the night and which one were to be taken during the day. He had full confidence in observations, inferences, and deductions and did not write something without first having observed it. He precise only those items which he considered suitable as medicine or as food. Wherever he collected the sample he always tried to ask relevant information from the local experts. Essential oils and Hindiba are two examples of Ibn Al-Baitar's findings. (Al Khattabi, 1988)



Figure 2. Ibn Al-Baitar's Kitab

## 2.2 Contribution : Essential Oils

Ibn Al-Baitar in his *Kitāb Al-jāmi' fi-mufradāt al-adwiya wa alaghdhya* or pharmaceutical encyclopedia had identified not only how essential oils were made but what certain essential oils could be used for, both the development of costly but effective medicines

and for perfume. Specific to his first book, he paid detailed attention to orange water and rosewater, which were essential oils from the namesake plants. His second work, *Kitāb al-mughnī fī al-adwiya al-mufrada*, was an encyclopedia of Islamic medicine. In this book, he went into great detail discussing the use of plants for treating a variety of ailments. Essential oils are a major part of these treatments.

Ibn Al-Baitar contributed much to the world of essential oils, especially as used in therapies and treatments, before his death in 1248, in Damascus. Essential oils, as Ibn Al-Baitar taught, are generally created through the process of distilling- using steam to extract the oil from the plant. The result is a concentrated hydrophobic liquid. Within the liquid are aroma compounds characteristic to the plant from which they were extracted. It is these compounds that make essential oils what they are, potential remedies for various ailments and powerful aromatic agents. This is why the use of essential oils for treatment of medical conditions is called aroma therapy.

Essential oils can do everything from curing what distresses people to freshening spaces. They can be used in diffusers, added to pot pourri or burned as incense, applied--in a diluted form--directly to skin, or used to make cosmetics, soap or candles. With so many different types of essential oils, the possible mixtures and uses are seemingly endless. Some of the greatest advantages to essential oils are the mental and emotional effects they can have. Many have a very relaxing effect, and can be used to relieve stress. Because of this they are often added to massage oils or hot baths. On the other hand, some oils are very invigorating and can be used to wake up and energize. (A. Whipple)



Figure 3: Essential oils

### 2.3 Contribution : Hindiba

Herbal drugs have been used since ancient times as medicines for the treatment of a range of diseases. Medicinal plants have played a key role in world health. In spite of the great advances observed in modern medicine in recent decades, plants still make an important contribution to health care. Medicinal plants are distributed worldwide, but they are most abundant in tropical countries. Herbal medicinal preparations are normally very popular in developing countries with a long tradition in the use of medicinal plants and also in some

developed countries such as Germany, France, Italy and the United States where appropriate guidelines for registration of such medicines exist. (Prof. Nil Sari, 2007)

One of Ibn Al-Baitars' most remarkable achievements was the discovery of the anti-cancer effects of the plant named "Hindiba," which Ibn Al-Baitar later identified as having "anti-cancer" properties and which can be used to treat tumors and neoplastic disorders. After its usefulness in the treatment of neoplastic disorders was recognized, Hindiba was patented in 1997 by Nil Sari, Hanzade Dogan, and John K. Snyder.



Figure 4: Hindiba

### 3.0 CONCLUSION

Ibn Al-Baitar had proven to the world that herbs is beneficial to be used especially as medicine based on his research during the golden age of Islam. Essential oils as aromatherapy and hindiba as cancer and tumor treatment are the examples of his great findings that people use until now. Therefore, it would be pleasure if the world may look back to the traditional ways of preparing medications that use herbs instead of using chemicals that give bad effects to the patients.

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