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Kertas Asli/Original Articles

Jujube in Malay Medical Manuscript: A Comparison from Scientific and Islamic Perspectives

NAJIHAH MOHAMAD SABRI, NUR AZIRA TUKIRAN*, AND RAIHANAH ROSLAN

ABSTRACT

Jujube known as 'Bidara' in Malay customs is a beneficial plant to humans. Nowadays, it is being domestically produced into varieties of products to fulfill human needs. However, as time passed, Jujube was only seen as a source for business products while ignoring its real benefits. Thus, this paper aimed to illustrate its benefits as stated in the transliterated books of Malay medical manuscripts, with solid support from scientific and Islamic perspectives. As a common ingredient for remedies, jujube has been documented in old manuscripts such as Kitab Tib MSS 2151, Kitab Tib Muzium Terengganu, The Medical Book of Malayan Medicine, and Kitab Al-Rahmah Fi al-Tibb Wa Al-Hikmah. Past journals and articles were analyzed to describe the benefits of jujube from scientific and Islamic points of view which are derived from the Quran and Hadith. In the selected Malay medical manuscripts, jujube was prescribed as a remedy for dysentery, loss of appetite, sore throat, smallpox, and scorpion sting. Scientific findings have broadened the discoveries of its medicinal advantages with the presence of properties such as anti-diarrheal, antimicrobial, anti-inflammatory, antidiabetic, antioxidant, anticancer, and antiallergic. Islamic views which are derived from the Quran, Hadith, and scholars' books mainly circulate its benefits as a cleansing agent, black magic defense mechanism, and medicine for certain illnesses. To conclude, this paper will review the benefits of jujube from the ancient Malay medical manuscript, which is parallel with the Islamic perspective and supported by scientific findings.

Keywords: Jujube, Bidara, Malay medical manuscript, remedies, scientific, Islamic perspectives.

ABSTRAK

Pokok bidara terkenal dalam kalangan masyarakat Melayu sebagai tumbuhan yang mempunyai pelbagai manfaat. Pelbagai jenis produk yang dihasilkan daripada pokok bidara baik dari akarnya, buahnya, mahupun daunnya telah dipasarkan secara meluas sesuai. Meskipun demikian, pokok bidara hanyalah dianggap sebagai satu bahan semulajadi untuk dieksploitasi oleh pengeluar produk sebagai sumber ekonomi tanpa menitikberatkan nilai sebenar pokok bidara dari sudut kesihatan dan saintifik. Oleh yang demikian, kertas kajian ini bertujuan untuk menerangkan manfaat dan kelebihan pokok bidara seperti yang telah dipertengahkan di dalam tulisan-tulisan purba masyarakat Melayu seperti Kitab Tib MSS 2151, Kitab Tib Muzium Terengganu, "The Medical Book of Malayan Medicine", dan Kitab Al-Rahmah Fi al-Tibb Wa Al-Hikmah. Selain daripada itu, beberapa kertas kajian yang mengambil sumber daripada hadith dan Al-Quran telah diteliti untuk mengenal pasti pertalian kebaikan pokok bidara dari sudut pandangan Islam dan saintifik. Oleh itu, di dalam kitab-kitab yang telah diteliti tersebut, pokok bidara telah digunakan sebagai penawar untuk disenteri, kehilangan selera makan, sakit tekak, cacar air dan melegakan sengatan kala jengking. Kenyataan berikut telah dibuktikan dengan kajian saintifik berkaitan pokok bidara yang menunjukkan kewujudan ciri-ciri seperti anti-cirit-birit, anti-kuman, anti-radang, anti-diabetik, anti-oksidan, anti-barah, dan anti-alergi. Manakala, daripada sudut pandangan Islam yang diperoleh daripada sumber hadis, Al-Quran dan pendapat ulama, manfaat utama pokok bidara adalah sebagai alat pembersih, pendinding ilmu hitam, dan penawar untuk sesetengah penyakit. Kesimpulannya, kertas kajian ini bertujuan untuk mencari titik persamaan tentang kelebihan pokok bidara dengan meneliti kitab-kitab purba Melayu sekaligus membandingkan manfaatnya dari segi pandangan Islam dan disokong oleh kajian saintifik.

Kata kunci: Bidara, Kitab Melayu Purba, Penawar, Kajian Saintifik, Pandangan Islam.

INTRODUCTION

Jujube or its scientific name *Ziziphus Mauritiana Lam* is a beneficial plant with various advantages for human uses. It belongs to the *Rhamnaceae* family, with another synonym scientific name which is *Ziziphus Jujuba Mill* and *Ziziphus Trinervia Roxb*. Jujube is commonly known as 'Bidara' among the Malay community (Tg Ainul Farha et al. 2020). It is also recognized as Chinese Apple, Indian Jujube, red date and Indian Plum among certain societies. Physically, Jujube trees can grow up to 15 meters high in shady plants with drooping branches. The trunk diameter can reach at least 40 cm or more. In terms of the fruit, it varies in shape and size. Ripen fruit is light green while the unripe one is dark green (Mohd Jailani et al. 2019). Malay societies categorized jujube into two types which are 'bidara kampung' and 'Apple Vietnam'. 'Bidara kampung' fruit is smaller as compared to 'Apple Vietnam'. The benefits can be slightly different wherein 'bidara kampung' leaves are well-known in Islamic treatment against black magic (Tg Ainul Farha et al. 2020). Nevertheless, both types serve advantages in terms of nourishment and remedies for humans. The leaves which possess many benefits are shiny green in color and hairless in the above part. The Malay community has been using the taproot of the jujube tree in the medicinal field as a medical instrument for certain illnesses (Ahmad et al. 2015).

The jujube tree can grow in humid and semitropical countries of the world and originated from Southern Asia and North Africa (Dhanik et al. 2017). The jujube tree then grow naturally in other regions of the world such as Afghanistan, Pakistan, North India, South China, Vietnam, Thailand, and Malaysia (Prakash et al. 2020). Some countries have been producing jujube commercially due to their advantages. Therefore, mankind has utilized the jujube tree potential to fulfill their needs. In Malaysia, the plantation of jujube trees in home gardens and orchards is quite common. The jujube fruit is quite popular in Malaysia as it is very adaptive to Malay norms. Most of the Malay community members consume the fruit raw as a pickle. Awang et al. (2020) reported that some elders in the *Besut* district still practice traditional medicine by utilizing jujube fruit as an anthelmintic and food appetizer. Additionally, it is also still being used in treating diabetes and hypertension. These situations prove that the older Malay community members nowadays do recognise the importance of jujube. Even though the utilization of the Malay community towards jujube is no longer fully practiced, we can conclude that the Malay community is still aware of some of its values and worth (Ahmad et al. 2015; Mat Lin et al. 2007).

Additionally, jujube fruit is produced domestically in the form of canned products, juices and powder (Shah et al. 2011). The jujube tree is also being commercialized into self-care products such as hair shampoo and shower gel extract from the jujube leaves (Ahmad 2012). Other than that, the most popular product from jujube is the therapeutic oil (Ahmad 2018). Majority of the Islamic medical practitioners highly recommend this product in the spiritual healing aspect. The product was promoted with many benefits such as getting rid of black magic, reducing stress and body aches, and treating skin problems (Ahmad 2012). Other than commercialized products, some people produce jujube leaf extract oil for their uses. The oil is called 'Minyak Tanak' among certain societies in Malaysia. Its benefits are more trustworthy as it excludes any additional chemical substance in its production. The real benefits of jujube must be reviewed scientifically to prove its potential more convincingly. In addition to that, Islamic perspective aspects of jujube benefits should not be ignored as it has been mentioned specifically in the Quran and Hadith several times. Coinciding with that, this paper will illustrate these two important points while reviewing the medical practice of jujube in Malay manuscripts.

JUJUBE IN MALAY MEDICAL MANUSCRIPTS

Malay manuscripts play a big role in future references and one of the fields mentioned in the old Malay manuscripts is the field of medicine. The existence of Malay medical manuscripts serves as a guideline in the practice of Malay traditional medicine in today's world. Most of the Malay traditional medicine was recorded in manuscripts entitled 'Kitab Tib' which focused on medical, doctor, illnesses, and their treatments from flora and fauna. This manuscript became the most popular manuscript in Malay traditional medicine. Aside from 'Kitab Tib', there were other titles that describe traditional medicines such as 'Kitab mujarabat', and 'Hikayat', and even books from Muslim scholars such as 'Kitab Bustanus Salatin'. Nowadays, for future reference, there are more than 40 manuscripts on traditional medicine are being kept in Pusat Manuskrip Negara and can be accessed by the public (Mat Piah 2015).

Jujube became one of the herb plants mentioned in several Malay manuscripts, highlighting its importance in the traditional medical field. It is important to note that jujube tree was a synonym in Malay culture years back until now and can be proven through this revelation in Malay manuscripts (Tg Ainul Farha et al. 2020). The jujube tree is mentioned as remedies and herb for certain illnesses together with the treatment methodology (Mat Piah 2015).

While reviewing old Malay manuscripts, researchers concluded that all parts of the Jujube tree are useful for traditional treatment purposes. The Malay community has maximized its benefits by utilizing roots, bark, leaves, and fruits in treating illnesses. Thus, four (4) manuscripts were selected and jujube tree benefits as traditional medicine are studied and listed in Table 1.

Table 1 shows the benefits of the jujube tree as remedies for ailments. As shown, the jujube tree is quite popular to be used as dysentery medicine among the Malay community. Aside from that, jujube tree has been utilized customarily to treat a wide array of illnesses such as sore throat, lost appetite, joint pain, dropsy, smallpox, and scorpion sting as the jujube plant parts retain a wound healing mechanism in which it encourages natural repair activity of the cells (Sumanth and Bhargavi 2014). The healing activity mechanisms of the jujube will be further explained and described by the scientific findings.

On the other hand, Table 2 shows the treatment methodologies of each disease. The different methodologies of treatment using jujube plants in treating certain illnesses indicated that the Malay community utilized jujube plants externally and internally. Additionally, the use of the jujube leaves as ointment is due to the similar pH of the leaves and the human skin pH (Mohd Jailani et al. 2019).

Table 1. Illnesses treated by different parts of jujube in Malay medical manuscripts.

No.	Malay Manuscripts	Illnesses	Parts of Jujube Plants	References
1	Kitab Tib MSS 2151	Dysentery Loss of Appetite	Barks	(Mat Piah and Baba 2014)
2	Kitab Tib Muzium Terengganu	Dysentery Loss of Appetite	Barks	(Mat Piah 2017)
3	The Medical book of Malayan Medicine	Dysentery Smallpox Sore Throat	Barks, Leaves Leaves Roots, Barks	(Gimlette and Burkill 1930)
4	Al-Rahmah Fi al-Tibb Wa Al-Hikmah	Scorpion Sting	Leaves	(Mohd Shafri and Muhammad Yahya 2017)

Table 2.Treatments Methodology.

No.	Illnesses	Treatment Methods	References
1	Dysentery	Mash jujube bark, mace, Indian wild pepper leaves, nutmeg, ginger, garlic, and peppers. Boil the mashed ingredients and drink.	(Mat Piah and Baba 2014) (Mat Piah 2017)
2	Lost of appetite	Sharpen jujube bark and Chinese cinnamon and drink the water. Another method is by putting the residue on the neck.	(Mat Piah and Baba 2014)
		Sharpen jujube bark and Chinese cinnamon and drink the water. Another method is by putting the residue on the tongue.	(Mat Piah 2017)
		Fresh jujube leaves are mashed with water and consumed.	(Awang et al. 2020)
3	Sore throat	Pound jujube bark and mix the juice with honey. Boil and drink three times a day. Another method is by rubbing the jujube root and Chinese cinnamon root on a stone and drink the water. Apply some of it on the neck.	(Gimlette and Burkill 1930)
4	Smallpox	Pound jujube leaves with other herb leaves in a mortar. Squeeze with your hands and take the juices.	(Gimlette and Burkill 1930)
5	Scorpion sting	Mash jujube leaves mix with vinegar and apply on the scorpion bites.	(Mohd Shafri and Muhammad Yahya 2017)

BENEFITS OF JUJUBE IN ISLAMIC PERSPECTIVES

The Jujube tree has a strong influence on the Islamic perspective aspects. It has been mentioned specifically in the two main sources of Islamic legislation, Al-Quran and Hadith. This shows that jujube is a tree with a special degree in Islam as Allah has paid specific attention to the beneficial properties of foodstuffs in the Quran (Sajid et al. 2019). In the holy Quran, jujube tree is known as 'sidrah' while the Arabic term for jujube can be translated into two terms, 'nabaq' and 'sidar' (Marwat et al. 2009a). The word 'sidrah' is mentioned four times in the Quran in three different surahs. This word was then used two times in its singular form (sidrah) and two times in plural forms (sidar). Further observation found that three of the words refer to plants in heaven and one of them refers to plants in the world (Ramli 2015). Allah SWT said in the Quran, "At the Lote Tree of the Utmost Boundary. Near it is Garden of Refuge. When there covered the Lote Tree that which covered it." (An-Najm: 14-16). The plant described in these verses referred to plants in heaven as interpreted by Muslim scholars. The other verse that referred to 'sidrah' in heaven is from surah Al-Waqiah verse 28. Thus, it can be understood that jujube plants have their specialty due to the mention of their nature in paradise (Sheikh and Dixit, 2015; Tamizi, 2015).

In Hadith or words from the Prophet Muhammad SAW, jujube plants are mentioned several times with the description of some of its benefits. A study conducted on the description of jujube plants in Hadith shows that there are 12 Hadiths mentioned in the most important Hadith collections or *Kutub al-Sittah.* Of the 12 Hadiths, five of them are related to the benefits of jujube plants. These five hadiths are divided into three main topics which are: the use of jujube leaves as a corpse bath material, the uses of jujube leaves as a bath material for women after menstrual and to wash menstrual blood on clothes, and the uses of jujube leaves as a bath material for the person who just embraced Islam. The Islamic ruling for these three usages of jujube leaves is permissible in Islam, wherein jujube leaves are effective as a cleansing agent (Ahmad and Mohd Yusoff 2018). "Narrated Ibn `Abbas: While a man was riding (his Mount) in `Arafat, he fell down from it (his Mount) and broke his neck (and died). The Prophet (ﷺ) said, "Wash him with water and Sidr and shroud him in two pieces of cloth, and neither perfume him, nor cover his head, for he will be resurrected on the Day of Resurrection saying, 'Labbaik,' (i.e., like a pilgrim)." (Sahih Al-Bukhari). This hadith is at the level of sahih or authentic and it describes the action of Nabi Muhammad SAW towards the dead body. A field study on the usage of jujube leaves in dead body baths in Malay customs found that some people believed that jujube leaves are beneficial in softening the dead body hence easing the process of bath and shroud. Other than that, it was also believed that jujube leaves can strengthen the corpse's skin and delay the smells (Yusof@Salleh et al. 2017).

As Islam values health aspects, some Islamic scholars discovered the field of medicine and wrote some books about it related to Arabic practices. Al-Ghassaniy (2000) stated that jujube fruit is used for intestinal health, cognitive functions, reduction of heat in the body, and appetite stimulants. Ibn-Qayyim Al-Jawziyyah revealed that jujube fruit can remove phlegm, improve stomach abdominal strength, and be good for pregnant mothers in providing nutrients. Ibn Al-Wardiy explained that jujube leaves are effective for vision health while jujube fruit is used to stop bleeding (Ramli 2015).

In Islamic treatment, jujube leaves are well-known as materials in treating against black magic (sihr). Ruqyah or protection verses are recited into seven leaves of jujube which are then mashed with stone and squeezed with water. The water then should be consumed for three days (Ismail n.d). Studies on black magic treatment in Malaysia revealed that some patients are required to bathe using water recited with Ruqyah and mixed with jujube leaves (Khadher Ahmad 2018). The uses of jujube leaves as black magic treatment ingredients are common in Malaysia as practiced by *Perubatan dan Rawatan Islam Fiqrullah* and others (Mokhtar 2018). The utilization of jujube leaves is based on the interpretation of Ibnu Kathir for Quranic verse in Surah Al-Baqarah verse 102 (As-Sabuni 1981; Ahmad 2018).

BENEFITS OF JUJUBE IN SCIENTIFIC FINDINGS

World Health Organization (2007) reported that dried jujube fruit is effective in physical strength aspects such as promoting weight gain, developing muscular strength, and increasing physical stamina. Besides, dried jujube fruit is also used to treat insomnia problems. Shahrajabian et al. (2019) compiled the pharmacological elements of jujube and concluded that jujube possesses anti-diabetic effects, hypnotic-sedative and anxiolytic effect, neuroprotective activity, sweetness inhibitor, anti-cancer activity, anti-ulcer activity, anti-inflammatory effect, anti-spastic effect, anti-allergic activity, permeability enhancement activity, cognitive activities, anti-fertility, hypertensive and anti-nephritic effect, cardiovascular activity, immunostimulant effects, anti-oxidant effects and wound healing activity.

Nutrient contents in 100 g jujube fruit are reported to contain 81.6 g moisture, 74 kcal energy, 0.8 g protein, 0.3 g fat, 17 g carbohydrate, 0.3 g ash, 21 mg carotene, 76 mg

vitamin C, 0.5 mg Iron, and 4 mg Calcium (Ahmad et al. 2018). The fruit has a rich source of vitamin C and sugar as it contains galactose, fructose, citric acid, malonic acid, and malic acid (Marwat et al. 2009b). It is also rich in thiamine, and riboflavin and has a relatively high total phenolic content (Li et al. 2007). Phenolic compounds and saponin as the active ingredients in jujube fruit act as antihyperglycemic, antidiarrhoeal, hepatoprotective, and anticancer (Khoo et al. 2016). Jujube leaves are rich in protein and minerals and capable of becoming a good source of nutrients for humans. At the same time, jujube seeds are found to be high in carbohydrates, securing the source of energy needed by human bodies (Mohd Jailani et al. 2019). Generally, jujube plants or *Ziziphus Mauritiana Lam* contain alkaloids, phenols, flavonoids, quercetin, routine, and terpenoids (Nurul Qamariah 2019; Utamiwati 2018). Terpenoids are found in jujube fruit while the leaves and fruit are rich in flavonoids (Prakash et al. 2020).

1. Anti-diarrheal

   An experiment conducted by Rahman (2012) found that jujube bark extract delayed the onset of diarrhea. This result indicated that the jujube bark has the potential for anti-diarrheal activity wherein the extract might contain certain components that relieve diarrhea. This is supported by a study conducted by (Hamiduzzaman et al. 2014) who found that the extract of jujube leaves contains secondary metabolites that can inhibit the mechanisms causing diarrhea in mice. On the other hand, the powder form of jujube fruit is also consumed to treat diarrhea (Shah et al. 2011).

2. Antimicrobial activity

   Antimicrobial activity in 29 types of plants used in respiratory ailments was studied and the result showed that six of these plants including the jujube tree have a good antimicrobial activity which is effective as a treatment for sore throat. Flavonoids contained in *Ziziphus Jujuba* displayed antimicrobial activity (Mehreen et al. 2016). Furthermore, the jujube leaves extract is also found to display an antimicrobial action against gram-positive bacteria, gram-negative bacteria and fungi (Hamiduzzaman et al. 2014).

3. Anti-inflammatory

   An experiment conducted to examine the anti-inflammatory activity of the jujube tree shows its effectiveness as an anti-inflammatory. Chemical analysis of jujube fruit found that it contains betulinic acid which is believed to have effective anti-inflammatory action (Bhatia and Mishra 2009). Additionally, quercetin contents in the jujube tree are capable of controlling the inflammatory response of in vitro bone marrow-derived macrophages (Mesaik et al. 2018). Moreover, jujube seeds essential oils are found to have an efficient inhibitory action towards skin inflammation in mice which is induced with 12-O-tetradecanoylphorbol-13-acetate (TPA) (Al-Reza et al. 2010).

4. Antidiabetic activity

   A study conducted by Bhatia and Mishra (2009) on the hypoglycemic action of jujube aqueous ethanol seed extract found that the extract treatment administered to the mice resulted in a reduction in the blood glucose level, thus reducing the mortality or no mortality in the progression of diabetes. This is further supported by Valavi et al. (2016) those who found that the antioxidant properties and hypoglycemic actions of jujube fruit extract induced regeneration of pancreatic islets and thus boosted insulin secretion in induced diabetic Winstar mice.

5. Antioxidant activity

   Recent researches show that the seed and fruit of jujube tree are active in antioxidant activity (Mishra et al. 2011a; Mishra et al 2011b; Prakash et al. 2020). Research conducted by Koley et al. (2016) shows that the total phenolics and flavonoid content in jujube fruit is high. Phenolics act as singlet oxygen quenchers and scavenge free radicals, thus indicating a significant source of antioxidant activity in the fruit. Ascorbic acid, an important element of antioxidative defense mechanism is also found to be high in jujube fruit. Moreover, natural pigments such as phytochemicals and vitamin C build a synergistic effect with the phenolic compound thus exhibiting a high antioxidant activity in the jujube fruit (Li et al. 2007). Furthermore, a study by Dahiru and Obidoa (2008) found that when jujube leaves extract when injected into an oxidative liver damaged mice for 6 weeks consecutively managed to lower the liver damage as the extract contains antioxidant enzymes which can reduce the effect of the oxidative oxygen species induced by the alcohol consumption.

6. Anticancer activity

Tripertanic acids and polysaccharides present in jujube have anticancer effects on various cancer cells (Tahergorabi et al. 2015). In the study conducted by Siriamornpun et al. (2015), ripe jujube fruit showed cytotoxicity effects against leukemic T cells. On the other hand, Beg et al. (2016) found that jujube fruit extract exhibited a cytotoxicity effect against cancerous HeLa cells in which the cells' morphology is altered in the presence of flavonoids. Jujube fruit also contains betullinic acids that exhibit particular toxicity to cancerous cells which is unlike any other chemotherapy agent (Mishra et al. 2011). Furthermore, the antiproliferative mechanisms of jujube fruit extract on estrogen receptor alpha (ER) positive MCF-7 and ER-negative SKBR3 on human breast cancer cells have been identified and the cancer cells growth is found to be stunted in which apoptosis is induced due to the bioactive compounds present (Plastina et al. 2012).

7. Antiallergic activity

A study by Jiang et al. (2019) on the anti-allergic effect of jujube revealed that cyclic adenosine monophosphate (cAMP), a functional compound of jujube extract suppressed the cytokine production which enhanced the production of allergy and inflammation thus resulted in the prevention of allergic symptoms. Additionally, full red matured jujube fruit when consumed contains the highest cAMP content at 153.1 $\mu g\ g^{-1}FW$ therefore it is recommended to harvest the jujube fruits when they are fully riped (Zhang et al. 2020).

CONCLUSION

The Malay community has long practiced the usage of jujube tree inclusive of all its parts as evident in the Malay Medical Manuscript. The effectiveness of jujube as remedies has also been proved with the explanation of the scientific findings. Therefore, all parts of the jujube tree are functional and beneficial. Thus, full exploitation of the jujube tree with broad knowledge of its benefits should be taken advantage of as the jujube tree can be used in various areas including cleansing againts black magic and materials for hygienic purposes in which have been discussed in this paper.

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Najihah Mohamad Sabri
Department of Fiqh and Usul Fiqh, Abdul Hamid Abu Sulayman Kulliyyah of Islamic Revealed Knowledge and Human Sciences (AHAS KIRKHS), International Islamic University Malaysia (IIUM), Jalan Gombak, 53100, Selangor, Malaysia.

Nur Azira Tukiran
International Institute for Halal Research and Training (INHART), Level 3, KICT Building, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100, Selangor, Malaysia.

Raihanah Roslan
Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM), 71800, Nilai, Negeri Sembilan, Malaysia.

Corresponding author:
Nur Azira Tukiran
Email address: aziratukiran@iium.edu.my