

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/281069191>

Balanites aegyptiaca: First Record for the Flora in Qatar

Article in Global Advanced Research Journal of Agricultural Science · August 2015

CITATIONS

0

READS

1,216

7 authors, including:



Elsayed MOHAMED Elazazi

Desert Research Center

47 PUBLICATIONS 89 CITATIONS

[SEE PROFILE](#)



Reda M. Rizk

Agricultural Research Center

26 PUBLICATIONS 161 CITATIONS

[SEE PROFILE](#)



Essam Saifelnasr

Biotechnology Center, Qatar

31 PUBLICATIONS 162 CITATIONS

[SEE PROFILE](#)



Full Length Research Paper

***Balanites aegyptiaca*: First Record for the Flora in Qatar**

Elsayed M. Elazazi^{1,2}, Reda M. Rizk^{3,4}, Salwa D. Al-Kuwari¹, Subah S. Al-Marri¹, Baina Sh. Al-Marri¹, Essam O. H. saifelnasr^{1,4} and Naema A. Eltanger²

1 Department of Agricultural Research, Ministry of Environment, Qatar.

2 Egyptian Deserts Gene Bank, Desert Research Center, Egypt.

3 Arab Organization for Agricultural Development, Sudan.

4 National Gene Bank, Agriculture Research Center, Egypt.

Accepted 29 July, 2015

We report the discovery of the *Balanites aegyptiaca* (L.) Delile var. *aegyptiaca* in Qatar for the first time. According to the national biodiversity reports and national and international literatures, there are no record for the species in Qatar. Also, its presence has not been detected either by locals or experts in Qatar before, although the species present in the Arabian Peninsula, Iran, and much of South Asia. We had discovered this species in Ar-Rayyan municipality at a location near Salwa road, 25 km from Doha, 90 km to Qatar-KSA borders (25°11'38.9"N 51°22'32.3"E). However, our findings highlights the need of a comprehensive survey around all Qatar, in order to document the presence of other plant species, and also to complete the catalogue of flora in Qatar.

Keywords: first record, desert dates, *Balanites aegyptiaca*, flora, Qatar.

INTRODUCTION

Balanites aegyptiaca (date seeds, Helgig) is an evergreen, woody, true xerophytic tree of tremendous medicinal importance (Yadav and Panghal, 2010). It belongs to the family Balanitaceae (Shamso *et. al.*, 2013). The genus *Balanites* is composed of nine species and 11 intra-specific taxa (Sands, 2001). *Balanites aegyptiaca* grows up to 10 m height. The leaves are alternate, two foliate, petioles are 3-6 mm long, leaflets are elliptic and have broadly pointed petioles up to 5 mm long. The spines of the plant are simple, straight, stout, rigid, green, alternate, supraaxillary, up to 5 cm long. Inflorescence is supraaxillary clusters or rarely supracemose. The flowers are small, bisexual, greenish white, fragrant, in axillary clusters, few or many in

number, cymes or fascicles. The sepals are five in number (free), ovate and 3 mm long. The petals are five in number (two free), oblong-obovate, longer than the sepals. The stamens are ten in number, filaments glabrous, and anthers are dorsifixated. The ovary is ovoid, silvery, five-celled and ovules are solitary in each cell, the style is short and conical. Fruit is an ovoid drupe, 2-5.6 cm long, found on a short thick stalk, and is faintly five grooved. The ripe fruit is brown or pale brown with a brittle coat enclosing a brown or brown-green sticky pulp and a hard stone seed. Seeds are found exaluminous and embryo is with thick plano-convex, or two-lobed cotyledons and a superior (Yadav and Panghal, 2010, Chothani and Vaghasiya, 2011).

Balanites aegyptiaca is one of the most drought resistant tree species widely distributed in Africa, Arabian Peninsula and other Asian countries (Arbonnier, 2004 and Orwa *et al.*, 2009). *Balanites aegyptiaca* was not recorded before in

*Corresponding Author's E-mail: elazazi_genebank@yahoo.com;
Tel: 0097470392701.



Figure 1. *Balanites aegyptiaca* in Qatar.



Figure 2. *Balanites aegyptiaca* found near the side of Salwa road, in ArRayyan, 25 km from Doha, 90 km to Qatar – KSA borders.

the list of flora in Qatar published by Batanouny (1981), AOAD (1983), Norton *et. al.*(2009) and Abdel-Bary (2012).

MATERIAL AND METHODS

Through years 2013 and 2014,during collecting, surveying and inventory activities for flora in Qatar applied the Genetic Resources Department, Department of Agricultural Research, Ministry of Environment, Qatarwe discovered the speciesin Ar Rayyan municipality along Salwa road, 25 km from Doha, 90 km to Abu-Samara (Qatar – KSA borders). The location coordinates



Figure 3. Two plant groups of *Balanites aegyptiaca* found in the site location.

were recorded; the trees were described morphologically at the location site. Photos for the trees and location had taken. Voucher specimens were collected for depositing in the herbarium, Also, samples of leaves and flowers were collected for further studies and measurements at laboratories.

RESULTS AND DISCUSSIONS

Here we report the discoverof the *Balanites aegyptiaca* for the first time in the South of Qatar at Ar Rayyan municipality along Salwa road, 25 km from Doha, 90 km to Qatar – KSA borders



Figure 4. Old branch showing spine and fissured cork (*B. aegyptiaca*).



Figure 5. Flower (*B.aegyptiaca*).



Figure 6. Flowering branch (*B.aegyptiaca*).



Figure 7. Site location of *B.aegyptiaca* at the map of Qatar.

("25.194146 N, 51.375652 E", Figure 1 , 3 and 7), on the 12th of January 2013 we observed three groups of 5, 10 and 15 plants of the species. Which found at the side of Salwa road (about 50 m of the road side, Figure 2).

Plant Description

The description of the two groups of plants found at the site location showed that; the height of the trees was up to 8 m, spiny perennial; branches pendulous; bark hard green sometimes grey, rough, corky and deeply fissured (Figure 1). Spines were greyish green, 2–4.2 cm long, straight, apex sharp and brown (Figure 4). Leaves were 2-foliate, sub-sessile or petiolate 0.3-1.1 cm long; stipules 0.5-1 mm long, triangular, caudate, finely pubescent; leaflet 3.2-5.1x 1.4-3.5 cm, elliptic-obovate, entire, coriaceous, apex bluntly acute to obtuse, base cuneate or blant, densely and minutely puberulous. Inflorescence were of 4-15 flowers, arranged in cymose fascicles at spineless nodes, very rarely at spineferous, puberulous; peduncle, if present, 2-7 cm long; bracts to 1 mm long, rounded or broadly triangular; pedicels 0.4-0.9 cm long, puberulous (Figure 6). Flowers were 5-merous, buds apiculate; sepals 2.5 x 1.5 mm, ovate, acute, puberulous on the outside, becoming spreading to reflexed; petals 4.5 - 5.5 x 2mm, lanceolate to obovate-oblong, acute to obtuse, glabrous within, spreading, green to pale yellow; stamens 10, spreading; filaments 2 - 3mm long, filiform, anthers oblong-ovoid; disc enclosing the lower part of the ovary and persisting as a cup; ovary hemispherical, puberulous; style subulate with a small, often slightly swollen stigma (Figure 5).

Associated species

The associated plant species of *Balanites* at the site location in Qatar were as follows: *Acacia nilotica*, *Ziziphus spina-christi*, *Ziziphus nmummaria*, *Phragmites australis*, *Rumex vegicarius*,

Zygophyllum qatarense, *Fagonia indica*, *Leucaena leucocephala*, *Ficus nitida*, and *Solanum eleagnifolium*.

Intense surveys in the field are needed to discover new species and describe the existing biodiversity in Qatar. The lack of a country-level floristic checklist is seriously hampered the estimation of levels of diversity and endemism, and other conservation-driven initiatives in Qatar. Comprehensive inventories to complete the flora catalogue and other components of biodiversity all around Qatar remains fundamental. Indeed essential asresearch tool for conservation planners, policy makers and other users of biodiversity information. In order to achieve that goal a thorough field survey is recommended in order to document the possible presence of other plant species, and also to complete the catalogue of other biodiversity components in Qatar. On the other hand, Qatar could benefit from *Balanites aegyptiaca* by many ways as: The species is multi-use potential food, medicinal, a groforestry, landscape, fire wood and more other uses, The species can grow in many kinds of habitat, tolerating a wide variety of soil types, from sand to heavy clay, and climatic moisture levels, from arid to sub humid. It is relatively tolerant to flooding, livestock activity, and wild fire. Thus it is strongly recommended to include the species in the national propagation and distribution plant program to the farmers in Qatar.

ACKNOWLEDGEMENTS

We thank the ministry of Environment for facilities; We would like to thank Dr. Muhammad Ajmal Khan, Qatar Shell Professorial Chair of Sustainable Development and Co-ordinator of Food Security Program, Qatar University for his helpful

suggestions. Our thanks goes to Dr. shahina Ghazanfar, head of Temperate Regional Team at Royal Botanic Gardens, Kew or provided some of online Taxa books.

REFERENCES

- Abdel-Bary EM (2012). The flora of Qatar. Vol. 1; Doha 700p.
- AOAD (Arab Organization for Agricultural Development) (comp. El Amin, H.M.) (1983). Wild plants of Qatar. Published by AOAD, Khartoum (printed Richmond, UK).
- Arbonnier M (2004). Trees , Shrubs and Lianas of West African Dry Zones. CIRAD, MARGRAF Publishers GMBH.
- Batanouny KH (1981). Ecology and Flora of Qatar. Alden Press, Oxford.
- Choithani DL, Vaghisia HU (2011). A review on *Balanites aegyptiaca* Del. (desert date): phytochemical constituents, traditional uses and pharmacological activity. *Pharmacognosy Review*, 5(9): 55-62.
- Norton JA, Abdul Majid S, Allan DR, Al Safran M, Böer B, Richer R (2009). An Illustrated Checklist of the Flora of Qatar. UNESCO OFFICE IN DOHA.
- Orwa C, Mutua A, Kindt R, Jamnadass R, Anthony S (2009). Agroforestry Database: a tree reference and selection guide version 4.0. World Agroforestry Centre, Kenya
- Sands MJ (2001). The desert date and its relatives: A revision of the genus *Balanites*. *Kew Bull.*, 56: 1-128.
- Shamso E, Rabei S, Hamdy R (2013). Identification keys and numerical studies of zygophyllaceae (s. Str.) And allied families in Egypt. *Assiut Univ. J. of Botany*, 42(2): 79-106.
- Yadav JP, Panghal M (2010). *Balanites aegyptiaca* (L.) Del. (Hingot): A review of its traditional uses, phytochemistry and pharmacological properties. *International Journal of Green Pharmacy*, 4: 140-6.