BOOK REVIEWS

Date Palm Publication Reviews

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Book Reviews


Future success in date palm fruit production rests on two pillars. The first and most familiar pillar is the production and marketing of high-value fresh fruit to provide domestic and international consumers with an appealing and nutritious food. A second pillar, of increasing importance, is represented by paste, preserves, condiments, deserts, juice, syrup, sugar, alcoholic beverages, vinegar and biofuel. These derived fruit products enter the market as individual items, as ingredients in prepared foods and have industrial applications. Robust development of these secondary products is critical to the valorization of damaged or spoiled fruits to provide producers and processors with an additional stream of income. At present, date syrup is the most common derived fruit product and is industrialized in Iraq and Libya.

This book provides a comprehensive analysis of date-syrup production on a semi- or full industrial scale. It represents an expansion of the first author’s master’s thesis completed at the University Kasdsi Mebrah, Ouargla, Algeria. The research focused on four of Algeria’s major cultivars: Degla Beida, Deglet Noor, Ghars and Mech Degla. These cultivars were selected because of their different fruit characteristics in terms of ripening time (early, mid-season and late) and consistency (dry, semidry, soft) at tamar stage. For each cultivar, fruits were divided into two portions; one for physical, chemical and biochemical analyses and the other to prepare syrup. Juice extracted from the fruits was concentrated under different temperatures and subsequently cooled. The most promising results were obtained from cv. Ghars fruit, an early ripening soft date; its syrup, concentrated at 80°-90°C and cooled at 4°C for 72 days, was comparable to high fructose corn syrup.

This book is a significant contribution to food science, especially in Algeria where no industrial production of date syrup exists. The identification of Ghars cv. as a candidate species represents an important step toward commercial date syrup development in the country.


The key factors in the sizable postharvest date fruit loss, especially in developing countries, are addressed in this important new study. In terms of food availability and security, it has been argued that the net gain in food supply resulting from an increase of crop yields could just as easily be realized by reducing postharvest losses, and at a considerably lower cost. This book provides direction for the date palm industry to enhance marketable production by attending to the reduction
of overall date fruit losses. The means to this end is adoption of improved modern postharvest practices as described in the 12 chapters of this book, each written by research specialists from around the world. A broad overview of world date production is presented in the two initial chapters. I want to point out that, despite the FAO statistics which are cited in the book, neither China nor Turkey has date production. For some reason, FAO includes Chinese jujube (*Zizyphus jujuba*) and Turkish (*Ficus carica*) productions in their date palm production tables.

The ten chapters representing the technical core of the book focus on five main subjects. The first is postharvest fruit physiology, which must be understood and underlie every action taken in the sequence from fruit harvest to consumption of the fruit or other derived product. Second is storage damage or loss from insects and fungi and their control, and the importance of tightly enclosed containment of stored fruits with controlled temperature and moisture conditions. The third subject deals with industrial-scale fruit processing up to and including computer-aided fruit sorting to meet international export standards and modern packaging practices to deliver to the consumer an appealing product in good condition. Fourth, fruit by-products such as paste, syrup and derived ingredients for the food industry are discussed. Capturing full economic value from fruits unsuited for marketing in a fresh state, in the form of by-products, is a critical component of profitable date production. The fifth subject concerns the nutritional and functional values of date eating. Promotion of the value of dates in human nutrition is vital to expanding consumption levels, especially in the developed countries, to help take up the steadily increasing global production of dates. This new book fills a gap in general knowledge of date palm fruit production and represents a solid reference work. I highly recommend this attractively-produced and carefully-edited publication.


This new book represents the latest contribution in Saudi Arabia to advance the state of knowledge about the cultivars which sustain the Kingdom’s position as the third largest date producer in the world. Two earlier studies of Saudi cultivars are (1) Ministry of Agriculture, 2006. The Famous Date Varieties in the Kingdom of Saudi Arabia. Ministry of Agriculture, Riyadh and (2) Sawaya, W.N. (ed.) 1986. Dates in Saudi Arabia. Ministry of Agriculture and Water, Riyadh; both focused upon fruit characters without the benefit of supporting genetic information.

As the title indicates, this book is about biotechnology, specifically tissue-culture propagation and DNA analysis to make definitive identification of date palm cultivars. The authors present a brief introductory chapter about date palms and their expanding role in the agricultural production, especially in the Arab countries. A second chapter outlines the three methods of date-palm propagation: by seed, offshoots and in vitro tissue culture. From the initial experimental successes in the 1970s, tissue culture has since become a proven technology to produce large numbers of elite true-to-type cultivars and this has made a significant contribution to the increase in plantings which have occurred in various countries. Also included are reviews of tissue culture techniques and date-palm cultivation practices.

A third chapter concerns molecular biology as related to cultivar identification, which, if based on vernacular names and the morphology of fruits and palms alone, is not trustworthy. The authors provide a concise account of the tools and technologies which have been developed to definitively identify cultivars and to allow an understanding of the relationships among them.

The core of the book presents information on key diagnostic features of fruit characters and Random Amplified Polymorphic DNA (RAPD) markers for the identification of 100 date cultivars grown in Saudi Arabia. These are nearly all native cultivars, although a few common introduced cultivars (e.g. Deglet Noor and Medjool) are included. Information on each cultivar is presented on a single page in a format giving the vernacular name in English and Arabic, RAPD marker profiles based on three OPERON primers, photographs of the fruits at beser (khalal) rutab and tamar stages, and a longitudinal section of the fruit to show the
proportion of seed and flesh. Supporting text gives details of fruit morphology.

Supplementary material consists of a glossary of technical terms to describe fruits and seeds as well as four useful appendixes. These latter provide cultivar names and locations, RAPD profiles, photographs of cultivar fruit shapes and a summary of the OPERON primers used for each cultivar. This book represents an initial instalment in a series eventually to cover all of the 450 named indigenous cultivars in the Kingdom. I commend the authors for providing a comprehensive reference source on date culture and research. The publication is available on-line as a PDF at:


The guide to date palm growing is intended for use in Morocco. It is organized into 16 chapters which cover the standard topics relevant to plantation fruit tree crops, including botany and ecology, modern date plantation establishment, propagation, crop care, pests and diseases, harvest and post-harvest operations, marketing, as well as an annual calendar of operations. The discussion of bayoud disease is comprehensive. Two chapters in particular enhance the value of this book. One is a very useful diagnostic table of date palm symptoms and anomalies with their probably causes. The second notable chapter deals with date palm cultivation within mixed oasis agricultural systems.


This book addresses modern industrial date fruit processing; it begins with a detailed description of the fruit at its different stages of development along with the physical, chemical and nutritional properties of the major commercial and noncommercial Moroccan cultivars. Also included is the use of date fruits in traditional medicine. A major chapter is devoted to the technology of fruit processing and to preparing an assortment of fruit-derived products for baking and confectionary, as well as flour, syrup, jam, preserves, sugar, vinegar and alcohol. Food use of date seeds is also reviewed. Harvest, pest control, storage, packing and marketing are subjects of another lengthy chapter. Together, the two chapters demonstrate the full potential food industry uses of date fruits. Recognition of the long tradition of producing and consuming dates in Morocco is reflected in a chapter on valorization of date fruits and their traditional methods of preparation using an Exclusive Designation of Origin and Quality (Trademark Geographical Indicator, Trademark Origin Name, and Agricultural Label). The need for Moroccan fruit classification standards is identified as a key factor to facilitate marketing. A final chapter looks at various means to transfer modern technology into date development projects.


The Atlas provides a baseline analysis of major native Moroccan date cultivars and their zones of cultivation. It notes that 453 native cultivars have been cataloged. However, the date cultivars are estimated to account for less than one-half Morocco’s date palms; the rest, some 55 percent, are represented by seedling dates. An introductory chapter gives a general overview of
date fruit production along with a set of descriptors to characterize cultivars, including one related to bayoud disease resistance. The core section of the atlas is comprised of descriptions and excellent photographic sets (tree, fruit bunch and fruits) of the major cultivars, broken down into four categories: superior, as selected by INRA (11), primary (18), secondary (14) and rare (9). An additional 16 cultivars are described but without photographs. A final section of the atlas contains a brief summary about plantation establishment and management. The landscape format of the book, 24 x 32 cm, lends itself to the presentation of the material and to the dual language text.

Morocco may only rank 11th in world date fruit production, but it is clearly a leader in date palm research at the national level, as reflected in the three above reviews. To a large extent, concentrated date palm research, led by INRA, has been necessitated by the urgent need to deal with the devastating effects of bayoud disease, a soil-borne fungus (*Fusarium oxysporum* f.sp. *albedinis*) which was first reported in Morocco in 1870, and has spread eastward in North Africa. These publications together provide detailed information of essential aspects of the Moroccan date fruit industry with each book being complementary to the other two.

I highly recommend this trio of studies, which are handsomely printed on high-quality paper and richly illustrated with figures and photographs. INRA and the authors can take pride in these excellent books, which can serve as models for national date palm development efforts. I want to thank Dr. Harrak for assistance in acquiring the books for this review.

**Journal Reviews**

**Basrah Journal For Date Palm Research. ISSN  1816-0379. Format 20.5 x 29.5 cm. Open access journal. Printed and electronic editions. Volume 4, Issue 1, 2005 forward available at:**

http://www.iasj.net/iasj?func=issues&jId=54&uiLanguage=en

The Date Palm Research Center, Bashrah University, Iraq, launched this journal in 2002. It was initially an annual publication, 2002–2006; twice annual thereafter. Information about the first three volumes is unavailable, having been destroyed in the Iraq War. Articles are in Arabic or English, with an abstract in the other language; nearly all articles thus far are in Arabic.

Consideration of the articles published between 2005 and 2013 reveals an emphasis on pests and diseases and their control; fruit and seed composition; tissue culture; cultivation practices including pollen; Iraqi cultivars and derived fruit products. With only a few exceptions, the studies focus on research done in the Basrah area by scientists at the Date Palm Research Center.

The Basrah journal currently represents the only scientific periodical devoted exclusively to the date palm. It carries forward the tradition of The Date Palm Journal published by FAO in Baghdad, 1981–1988.


This new journal began publication in 2012 with each number devoted to a specific theme. This fourth issue contains ten articles addressing the prehistory, history, archaeology and iconography of the date palm, and its domestication and cultivation as a key species of oasis agricultural development over time, particularly in the Arabian Peninsula and Egypt. The longest article is on the agrobiodiversity of the Siwa Oasis in Egypt, commendably documenting the antecedents of the contemporary date palm oasis. This fine book-length collection of date palm studies is a major contribution to the state of knowledge of this ancient and modern tree crop.