

Project Title: AgriFutures Emerging Industries Capacity building Travel Grant

Project Number: PRO-016181

Final Report due date: 30 May 2023

**Study Tour of the Indian and selected Middle Eastern Date Palm Industries in
March 2023**



Photo 1, showing value added date gift boxes and speciality filled date products in a Dubai shop

Gary Doak

Winton Dates

Winton, central western Queensland, Australia

i) Project Title: AgriFutures Emerging Industries Capacity building Travel Grant

ii) Project Number: PRO-016181

iii) Reason for travel:

- To review, document and communicate best practice date growing operations as applied in well established date growing regions in India and the Middle East
- To identify best practice post-harvest treatment, storage and marketing of dates
- To Identify value added date products and the technology and marketing involved in the supply chain
- To Visit R&D organizations to understand research directions and results
- To establish stronger relations with date growing organizations and R&D personnel and to access sources of technical information, published and unpublished useful for Australian growers
- Developing communication plans (guided by the ADGA Strategic Plan) to share information and findings with Australian date industry participants.

iv) Person traveling:

Gary Doak, Vice Chair of the Australian Date Growers Association (ADGA) and owner of Winton Dates as a sole trader.

Introduction – Brief Overview of the Australian Date Palm Industry

The Australian date palm industry is small and geographically dispersed with palm plantations situated in all mainland Australian states and the Northern Territory. There is potential to consolidate and improve the productivity of the Australian industry.

The Australian Date Growers Association (ADGA) completed a Strategic Plan in 2022 which has identified major industry weaknesses and these include;

1. Current yields for some varieties are very much below those being achieved internationally driven primarily by poor fruit set results for some industry participants.
2. Lack of shared knowledge and skills across the industry in best practice growing systems, best practice post-harvest treatment and storage, and in best practice marketing.
3. Lack of consistent retail or wholesale market specifications.

To address these issues the Strategic Plan placed a high priority on completion of the following activities;

- Collaborate and develop relationships with international date palm scientists and producers to identify best industry practices and seek solutions to issues facing the Australian industry.
- Document Best Practice for post-harvest handling and marketing of fresh dates.
- Facilitate knowledge sharing events between Australian and overseas growers, researchers and extension providers. (Australian Date Growers Association, 2022).

In order to contribute to these goals, the author, Gary Doak of Winton Dates in Queensland, sought and was successful in obtaining funding from AgriFutures Emerging Industries Capacity Building Travel Grants Program. The broad objective of the tour was to examine date growing practices in India and selected Middle Eastern locations and to share any learnings with Australian date growers.

Itinerary

Kutch region of Gujarat state in India

The itinerary comprised visits to diversified date farms, a university date farm research station and a government date farm extension centre.

The visits were timed to occur during the pollination period, which is a key stage in successful date production.

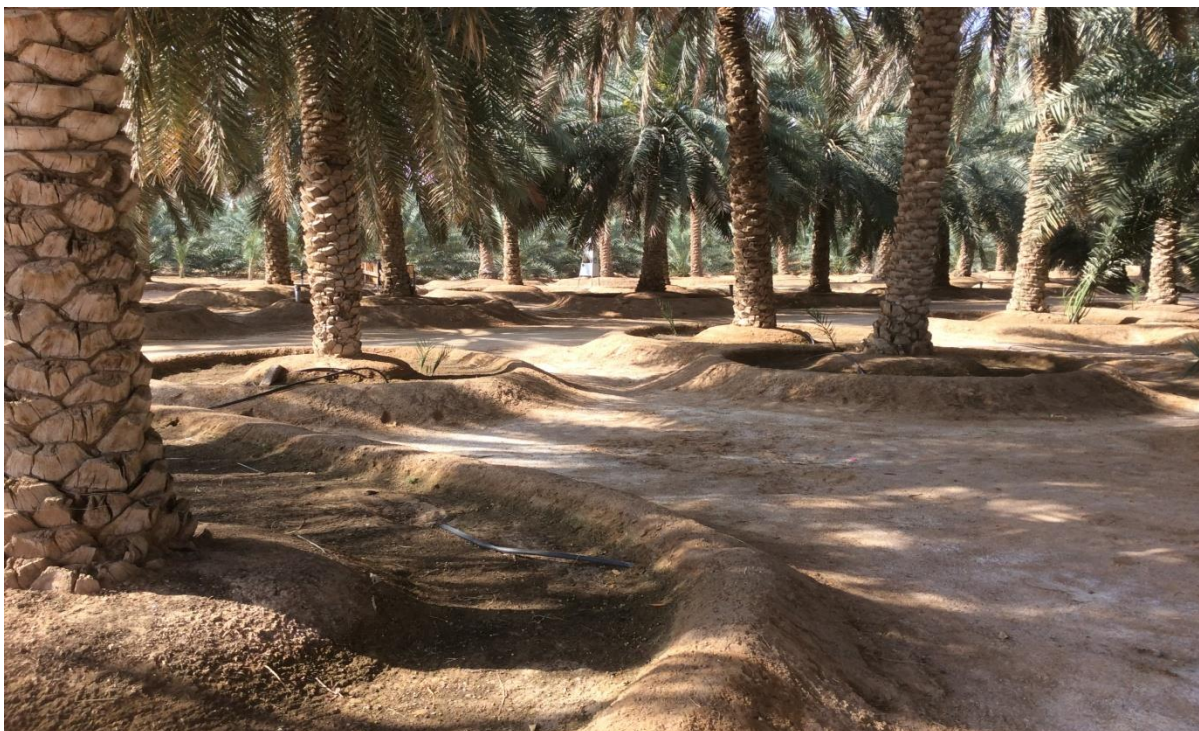


Photograph 2 – Diversified date farm in Bhuj region, Gujarat, India. Note the ladder to climb trees and adjacent pomegranate section on the left of photo.

The United Arab Emirates (UAE)

The itinerary comprised visits to a Tissue Culture Laboratory, farms in the Al Ain oasis and retail outlets selling value-added date products in high value Dubai market outlets.

The visits were also timed to occur during the pollination period, which is a key stage in successful date production.



Photograph 3 – Traditional date farm in Al Ain oasis in the UAE. Note the close spacing of trees, mounding around trees for water retention and the salt deposits on some soil surfaces.



Photograph 4 – Value added date syrup and date spread products in a Dubai shop

Jordan

The itinerary comprised visits to the headquarters of the Jordanian Date Association, a major Jordanian date grower s farms in the Jordan Valley and a visit to a large Jordanian date sorting, packing and storage facility.

The visits were also timed to occur during the pollination period, which is a key stage in successful date production.



Photograph 5 –Date farm in the Jordan Valley with freshly tilled soil to plough in green ground cover

Israel

The itinerary comprised visits to an Israeli R&D date research station, a certified organic date farm and a commercial date farm in southern Israel. It also included a meeting and discussion with a senior research scientist at the Israeli Vocani Research Centre in Tel Aviv.

The visits were timed to occur during the pollination period, which is a key stage in successful date production.



Photograph 6 –Research project on water mobility in palm root zones at the Southern Arava Research Station, Israel

Report on the travel

i) Primary purpose of the travel

A key purpose of the travel was to review, document and communicate best practice date growing operations as applied in well established date growing regions in India and the Middle East and to report significant findings back to Australian date growers.

Detailed technical information has been outlined in excel spreadsheets for each of the regions visited, to record all information gathered and for distribution to members of the ADGA.

Value added date products and marketing involved in the supply chain were examined and recorded.

Key R&D organizations were visited in both India and Israel to understand research directions and results

Stronger relations with date growing industry participants and R&D personnel were established. Access to sources of technical information, published and unpublished useful for Australian growers were identified to assist developing communication plans (guided by the ADGA Strategic Plan).



Photograph 7 – Mechanical access to pollinate high palms in a southern Israeli farm

ii) Major achievements / findings

- All regions visited reported about 10 to 15% of “off types” in tissue culture trees planted in the early 2000’s, with very low yields. These trees are usually identified and removed, often sold as ornamentals.
- Pollination to achieve good fruit set was not considered a problem in the regions visited which share reliably low rainfall and moderately warm temperatures during the pollination period.
- As the industry has become mature in these regions, most recent expansion has resulted from the planting of offshoots from proven trees. Tissue culture has focussed on the propagation of newer varieties with desirable attributes.
- All regions are concerned about future water availability and water quality issues.
- All regions were concerned about future higher production increasing market competition and driving down prices.
- In Gujarat in India, major date growers are diversified, as they grow additional crops of pomegranates, dragon fruit or mangoes to complement date production and offset poor date crops in some wetter years.

- Israel has a high cost structure, similar to Australia and has adopted a high technology, capital intensive, approach to date growing and post harvest practices. This is only commercially viable with larger scale plantations in Israel.
- Some regions, especially Israel, India and the UAE have significant government support to assist their date industries.
- The data collected will allow detailed documented information to be provided to Australian Industry participants on the range of cultivation practices adopted in the four regions visited.
- Good contacts were made with key date R&D organisations and industry participants in the four regions. This will aid future communication with international experts with Australian growers.

iii) Benefits / significance – Grantee

- The Bhuj region in Gujarat in India is very similar to the climatic conditions prevailing in the central western areas and northern inland areas of Queensland. The diversified date farms provide a model for reducing risks associated with stand alone date farming in this region of Queensland with a summer dominant rainfall.
- The grantee will be exploring the potential to add adjacent crops such as pomegranates.
- The grantee will be exploring the potential to add other khalal varieties to offset the risk of rain damage to rutab and tamar varieties of dates, as is practiced in Gujarat.
- The importance of value added products was reinforced and these options will be further developed for market sales
- Good personal contacts were made with key players in the regions visited and this will aid future shared communication

iv) Benefits / significance – Industry

Benefits to the Australian Date Industry include;

- The international contacts gave their information freely and importantly were keen to continue the dialogue and information exchange with the Australian industry.
- Detailed technical information has been outlined in excel spreadsheets for each of the four regions visited, to record all information gathered and for distribution to members of the ADGA. The topics include Abiotic, Biotic, R & D Resources, Cultural management, Post harvest, Date products & added value, Marketing and retail and Key contacts for each location.
- Value added date products and marketing involved in the supply chain were examined and recorded for information for ADGA members.

- Key R&D directions in Israel may be of significant value to the Australian date industry (such as the application of pollination by drones) as Israel shares similar high labour cost structures.

v) Recommendations to Agrifutures / Australia and Industry

- A key issue for Australian growers is matching the right varieties for the right locations in the various regions of Australia. However, this has also to be balanced within the economic context of supporting infrastructure, water availability, labour, cost structures, distance to markets etc.
- The risks associated with suitable temperatures, rainfall and humidity impacts to achieve high yields and high quality fruit need to be more clearly documented and mitigated by matching varieties with locations.
- Seeking the availability and planting of the best khalal (crunchy) varieties from India and the Middle East to reduce the risk of rain and humidity damage to rutab and tamar ripened fruit, as almost all regions in Australia are exposed to some rain risk.
- Sustainable practices are critical going forward and water efficiency, coupled with improving soil health and maximising on-farm nutrient recycling offer many benefits.
- Exploring value added date products fruit in such items as date syrup, chutneys and condiments to use lower grade fruit and achieve economic returns.
- Once more significant volumes are achieved, the targeted marketing of Australian grown varieties (fresh and local) will need more significant attention.
- Biosecurity procedures to prevent the entry of the red palm weevil into Australia are critical as this pest is a major problem in the four regions visited.
- Standards for grading fruit should be developed but kept simple and limited to no more than 3 grades. In both Israel and Jordan, standards have become complex and are seen as an unnecessary burden on the industry.



Photograph 8 –Significant on-farm composting production to improve soil health and date tree nutrition in the Bhuj region of India

Acknowledgements

Special thanks to AgriFutures Australia for sponsoring the tour and to all farmers and institutions freely sharing their considerable date growing knowledge and experiences. The AgriFutures funding contribution has leveraged further private funding from the author to enable additional countries and regions to be included on the itinerary thus delivering additional outcomes. Moreover, the ADGA saw benefit in sponsoring Dr Girija Page to accompany the author to provide a scientific perspective thus further leveraging AgriFutures investment. The professional support of Dr Girija Page and Mr Shaun O’Connor was significantly important for the study tour.

Disclaimer

The information presented here is a true representation of the author’s experiences and recollections during the study tour. However, the information is not considered advice and Australian date farmers must consider their own particular circumstances and adopt any practices at their own risk.

References

Australian Date Growers Association (ADGA), (2022), Australian Date Palm Strategic Research, Development and Extension Plan – (2023 to 2028).

Muralidharan, C. M., Baidiyavadra, D. A., and Sharma K. A. (2019). Variability in date groves of Kachchh and conservation through field gene bank. Technical Bulletin No. 05/2019. Date Palm Research Station. SDA University, Mundra – Kachchh. Gujarat, India.

Jordanian Dates Association, Information brochure, (2022). JODA, Sweifieh-Paris Street – Zaytuna Complex –Second Floor Office No. 204