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## Development and expansion of sustainable date palm production systems

Oct 22,2017



**An ICARDA-led research project funded by the [Gulf Cooperation Council \(GCC\)](http://www.gcc-sg.org/en-us/Pages/default.aspx) (<http://www.gcc-sg.org/en-us/Pages/default.aspx>) improves date palm crop management, creates and transfers best-practice technologies, conserves and further develops date palm germplasm, and reinforces the capacities of national researchers and farmers.**

A key commodity throughout the Arabian Peninsula, date palm is an important agricultural staple, a source of feed and fuel, and a building material. To increase its productivity in the Arabian Peninsula, ICARDA worked to improve production methods, including the following:

**Implementing and expanding liquid pollination.** By-hand pollination of date palms has traditionally been expensive, time-consuming, and labor intensive. Spraying palm trees with a pollen solution via hose, by contrast, is a cheaper and equally effective method compared to conventional pollination methods. In fact, because production costs decreased significantly, the value of production per ha increased by almost 50% in some cases.

**Introducing subsurface irrigation maximized date palm production.** In a well-implemented system, subsurface irrigation reduces water loss and run-off while providing weed control. The precise and uniform delivery of water also improves crop yield.

**Decreasing drying times** in polycarbonate chambers (by typically 4-5 days) reduced labor costs and the amount of dust in storage chambers, providing cleaner fruit.

**Promoting Integrated Pest Management (IPM)** as an alternative to chemical pesticides which cause damage to the local environment and its human, flora and fauna populations. ICARDA promoted the use of bio-pesticides and other more natural options. The organic pesticide, Coragen, gave promising results, as did three bio-pesticides employed in Saudi Arabia: matrin (.5% solution); paraffin oil; and abamectin with sulfur (1.8%). The use of trichogramma — a miniscule predatory wasp that can feed on over 200 insectisoids — is also being explored as an option.

As the project moves on to the next stage of development (2018-22), ICARDA and its partners hope to work on further management organization, water efficiency, and IPM options, particularly combating red palm weevil proliferation.

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