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DATES VALUE CHAIN ANALYSIS AND OPPORTUNITIES FOR IRAQ



Inma
AGRIBUSINESS PROGRAM

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EXECUTIVE SUMMARY

This study examines key elements of the international date market in terms of imports and exports, production and processing, the date value chain, quality and price. The analysis includes the US, the EU27 (Northern and Southern EU27 countries), the Middle East Region (UAE, Syria, Turkey) and India, in three market subcategories: *premium table dates*, *industrial dates*, and *animal feed*. The purpose of the study is to assess Iraqi date marketing potential, to examine potential improvements in the date value chain built around harvest/post-harvest handling and processing, and to offer recommendations for value-added activities in this sector.

World production of dates shows a rising trend at a rate greater than world demand for dates. Major consumer demand already is satisfied either by domestic production (for example, the US imports only 8,000MT/yr) or by competitive imports (e.g., EU27), mainly from Tunisia, Algeria and Israel.

The strong position of existing major date exporters to the EU27 lies in the existence of GSP (zero import tariffs), existing processing infrastructure, established commercial linkages, high integration between key distributors and growers, consumer preference for date varieties under-represented in Iraq (*Deglet Noor* and *Madjool*), and less costly transport routes, among other factors. In addition to attempting to enter a highly competitive global date marketplace, Iraqi exporters must conform to the complexities of compliance with international food regulations. To enter the market for industrial dates for the baking industry, large investments in high-volume processing facilities would be required, increasing Iraqi costs beyond competitiveness.

Inma identifies selected components of the Iraqi date value chain with potential for significant development of value-added: improved storage (packers and producers), processing targeted to domestic and export niche markets (e.g., date syrup), and targeted export of the *Zahidi* variety of industrial dates. Improved economic conditions for the Iraqi dates industry largely depends on identifying unmet sources of demand and on the ability to competitively add value to current supply. *Inma* concludes that the key components for revitalization of the date industry in Iraq are the following:

IMPROVED STORAGE Date packers are important participants in dates marketing in Iraq: they act as brokers who buy the produce at harvest, pack it (in 20kg plastic bags), store it (although under less than satisfactory conditions) and sell both domestically, and occasionally for export. Modernization of packaging and expansion/updating of date presses would reduce date wastage after harvest, especially since cold storage facilities do not exist.

DATES SYRUP FOR DOMESTIC MARKET Dates syrup is a high added value derivative and a widely consumed product: it is currently sold at wholesale in Iraq at \$3/kg, uses low grade dates as raw materials (costing approximately \$300/MT). *Inma* proposes to examine the feasibility of revitalizing the industry by adding significant value (syrup), targeted initially to the domestic market, through:

- Establishment of medium-size highly-efficient and cost-effective processing facilities with capacity to process 200kg of dates per hour, using vacuum and double extraction technology.
- Improved packaging of the product with increased quality, appearance and taste (improved organoleptic characteristics).
- New packaging functions, e.g., single portion packs for consumption away from home.
- New formulations and improved packaging of date syrup (new flavors, new added ingredients), targeting young consumers (core target: children 3-12 years old).
- Promotion of a new image for date syrup, via advertising and packaging, associated with sports and healthy energy.

Although the syrup industry does not require quality date input, a more efficient syrup industry could represent an alternative to animal feeding, a partial solution to wasted dates, and the possibility for farmers to bypass intermediaries selling directly to processors (forward contracting).

EXPORT OF ZAHIDI INDUSTRIAL DATES India is currently the main outlet for Iraqi dates of the low priced *Zahidi* variety, which reach the sub-continent via UAE importers/re-exporters. Iraq dates currently occupy the “good value for money” segment being the cheapest available in the market. India’s fast-growing middle class and rising purchasing power is generating rapidly growing demand for quality processed dates, presently at 300,000MT of imports annually. There appears to be short term potential (2008-09 season) for Iraq to export an additional 20-30,000MT/yr to India with significant added value, if direct links with Indian or UAE importers/re-exporters can be re-established.

Turkey and Syria may represent regional opportunities in the longer run, due to Iraq’s geographical position and consequent lower placement costs.

A detailed analysis of market trends and demand patterns is presented in this study. For more information on the Iraqi date value chains and market opportunities, please contact Franco Scotti, the *Inma* Competitiveness Manager, at fscotti@Inma-iraq.com.

1. BACKGROUND

Worldwide date production has increased exponentially over the last three decades. Starting in 1965 at about 1.85 millions metric tons (MT), it reached 2.7 million MT in 1985 and 7 million tons in 2005. In the last forty years worldwide supply expanded at a pace of 7.5% per year, consistently outstripping demand with +4.8% growth rate per year.

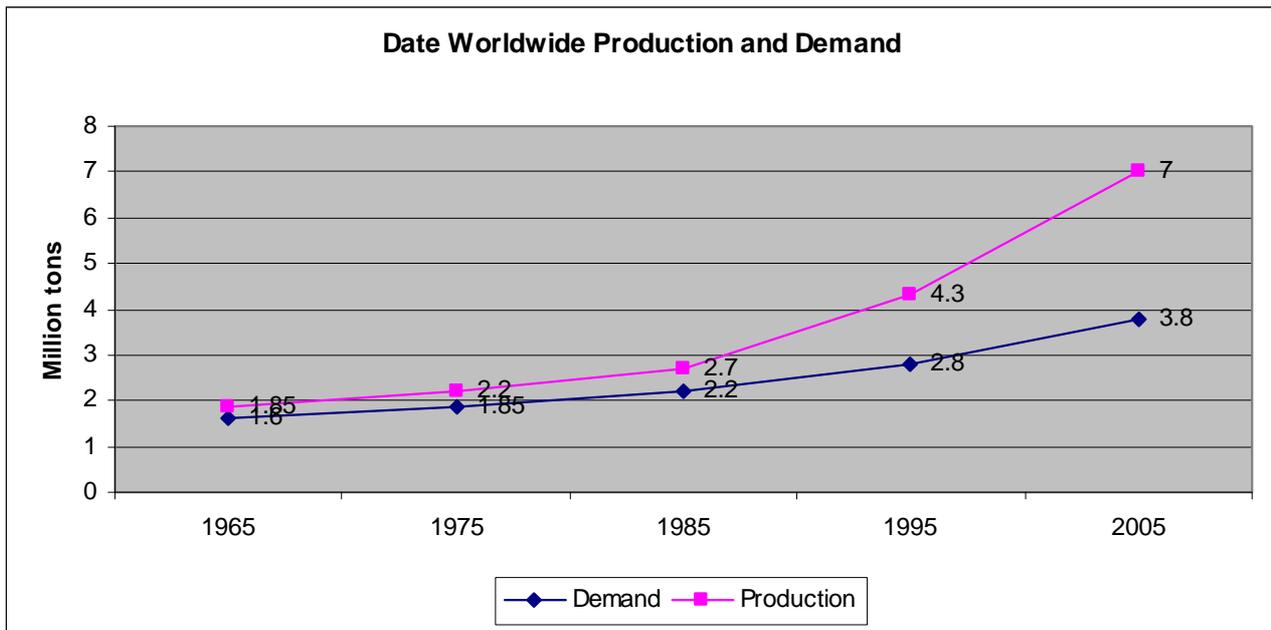


Table 1: Worldwide Date Supply and Demand. Source : FAOSTAT 2006

The industry turning point occurred in the early 80s, when the Iraq-Iran conflict disrupted the worldwide date supply and created shortages at the lucrative EU market and at the fast growing Asian markets. Lack of supply caused a rapid increase in date price at the global market, motivating other countries in the region, notably Saudi Arabia, Tunisia, Algeria, UAE, Pakistan and Israel, allocate significant investments in their date palm cultivation. Consequently, date production in the last two decades has been increasing, at a much faster pace than EU and Asian demand.

Iran rejoined the global export market in the late 80s, while Iraqi date production continued to be affected by the sanctions imposed due to the 1991 invasion of Kuwait.

Source: COMTRADE 2007 – FAOSTAT - EUROSTAT

Leading importers of dates are Europe (highest market value), India (highest volume), UAE mainly for re-export to other Asian countries such as India, Sri Lanka, Indonesia, Malaysia and Bangladesh. There is no correlation whatsoever between production and exports. Tunisia and Israel, for example, are two top exporters to the EU, despite producing less than 2% of the global date supply.

| Dates: Import Countries | USD Value (in millions) | Volume (in thousands of MT) | Price (1kg/\$) |
|-------------------------|-------------------------|-----------------------------|----------------|
| EU | 201,102 | 73,920 | 2.72 |
| India | 74,686 | 286,317 | 0.26 |
| UAE*¹ | 33,713 | 196,873 | 0.17 |
| Turkey | 6,656 | 12,624 | 0.52 |
| Russia | 13,627 | 22,375 | 0.60 |
| USA | 11,308 | 8,646 | 1.30 |
| Canada | 16,397 | 8,604 | 1.90 |
| Australia | 9,452 | 6,657 | 1.42 |
| Syria | 7,411 | 23,917 | 0.31 |
| Malaysia | 20,986 | 15,346 | 1.37 |
| Indonesia | 7,634 | 13,291 | 0.57 |
| Bangladesh | 5,630 | 17,695 | 0,31 |
| Sri Lanka | 1,005 | 6,119 | 0,16 |

Table 2.1 – World Date Import per Country. Source: COMTRADE 2006/07

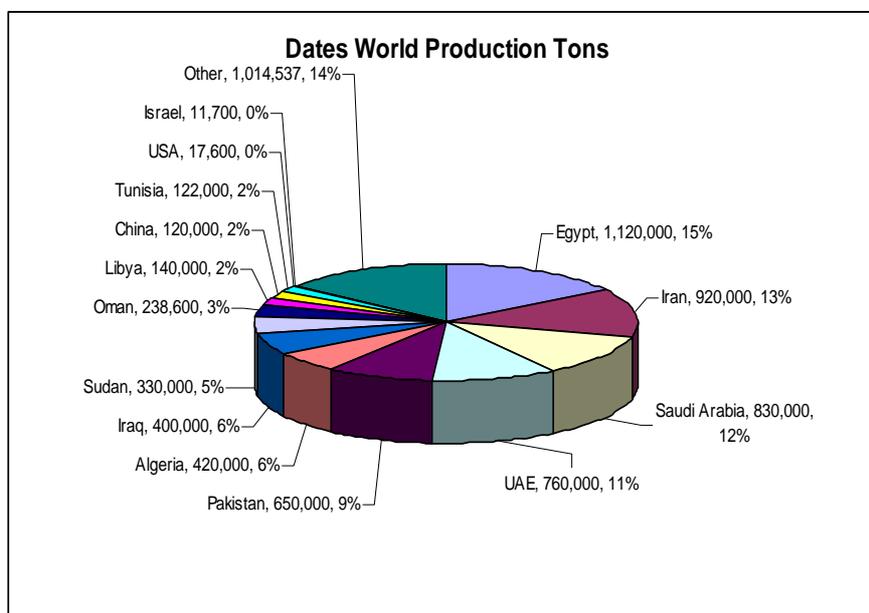


Table 2.2 – World Production of Dates. Source: COMTRADE 2006 /07, FAOSTAT - EUROSTAT

¹ Data available only up to 2005.

2. DATES VALUE CHAIN ANALYSIS

Dates value chain in Iraq comprises at least six different sub value chains:

- Table dates premium export to Europe and USA;
- Industrial dates export to USA and Europe;
- Iraq domestic household consumer market;
- Iraq domestic industrial demand (syrup);
- Iraq domestic animal feeding demand;
- Iraq regional export;

| | Production | Processing | Market |
|--|------------|------------|------------|
| Table Premium Dates Europe | \$750/MT | \$840/MT | \$2.740/MT |
| Industrial Dates Europe and USA | \$300/MT | \$100/MT | \$804/MT |
| Domestic Date Consumption | \$180/MT | \$270/MT | \$450/MT |
| Domestic Industrial Date (Syrup) | \$150/MT | \$120/MT | \$270/MT |
| Domestic Animal Feed | \$60/MT | \$30/MT | \$90/MT |
| Regional Export (Syria, UAE, India, Turkey) | \$180/MT | \$60/MT | \$240/MT |

Table 3 – Production, Processing and Market by category.

Inma key's findings of the date market assessment are as follows:

- EU27 and India are the only relevant markets for date imports.
- EU27 is the only import “premium” market (\$2.72/kg) in the world, with low growth in Southern Europe (Spain, Italy and France).
- India in the only sizeable fast growing importer (μ 2003-2007 - /+15.8%).
- Export of industrial dates requires large scale production infrastructure (e.g. a factory with minimum 12,000 MT/year output). and it is not profitable as the major market supplier is Iran with developed date industry.

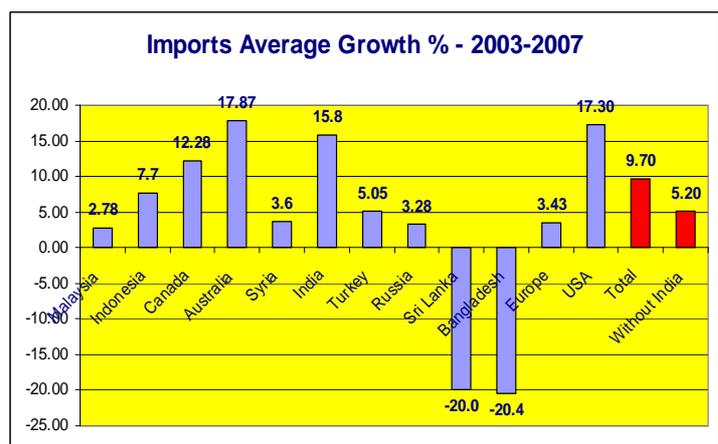
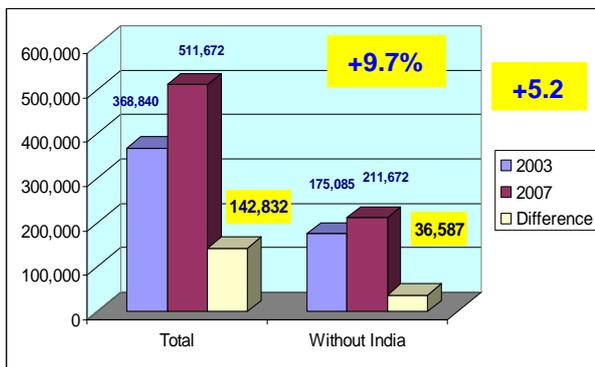


Table 4.1 – Annual date production in GHJ. Source: COMTRADE 2006/07. Table 4.2 – Imports Average Growth 2003/07. Source: COMTRADE 2006/07.

2.1. TABLE DATES PREMIUM EXPORT MARKET

The EU, in particular Southern Europe with Spain, Italy and France, is the only significant “value” importer of dates, with average CIF² import price of \$2.72/kg in 2007. Tunisia (Deglet) and Israel (Medjool) are the two main supplier of the European Union. Southern Europe is dominated by the *Deglet noor* and *Medjool* variants, which are produced in insignificant quantities in Iraq.

| DATE IMPORTS in the EU | Import Value (1000EUR) | % | Import Value (1000EUR) | % | Import Qty (1000kg) | % | Import Qty (1000kg) | % | Average Price 2005 |
|------------------------|------------------------|---------------|------------------------|---------------|---------------------|---------------|---------------------|---------------|--------------------|
| Years | 2006 | Market Share | 2007 | Market Share | 2006 | Market Share | 2007 | Market Share | €/kg |
| Algeria | 13,814 | 11.0% | 14,302 | 11.0% | 10,648 | 15.5% | 11,236 | 15.2% | 1.27 |
| Egypt | 457 | 0.4% | 644 | 0.5% | 555 | 0.8% | 632 | 0.9% | 0.88 |
| Iran | 11,063 | 8.8% | 11,670 | 9.0% | 15,261 | 22.3% | 15,587 | 21.1% | 0.75 |
| Iraq | 90 | 0.1% | 0 | | 119 | 0.2% | | | |
| Israel | 31,400 | 25.0% | 28,807 | 22.2% | 7,477 | 10.9% | 6,745 | 9.1% | 4.27 |
| Jordan | 1,485 | 1.2% | 598 | 0.5% | 267 | 0.4% | 187 | 0.3% | 3.20 |
| Pakistan | 832 | 0.7% | 1,253 | 1.0% | 1,329 | 1.9% | 1,873 | 2.5% | 0.66 |
| Saudi Arabia | 1,176 | 0.9% | 1,566 | 1.2% | 1,219 | 1.8% | 1,596 | 2.2% | 0.98 |
| Tunisia | 57,881 | 46.1% | 63,059 | 48.6% | 29,656 | 43.3% | 33,938 | 43.3% | 1.85 |
| United States | 3,547 | 2.8% | 3,197 | 2.5% | 737 | 1.1% | 707 | 1.0% | 4.52 |
| Total EXTRA-EUR | 125,440 | 100.0% | 129,743 | 100.0% | 68,569 | 100.0% | 73,920 | 100.0% | 1.75 |

Table 5 – Date Imports in the EU. Source: COMTRADE 2007

2.1.1. USA

Contrary to widespread public perception in Iraq, USA is a relatively small date importer, in both quantity and value:

- USA mainly imports industrial dates for the cereal breakfast and cereal bar industries. USA produces 18,000 MT/yr of the high value *Medjool* variety satisfying the entire domestic demand for premium table dates.
- USA granted a Generalized System of Preferences (GSP) status to Iraq in 2004. This status does not translate into a real competitive advantage since tariff for industrial date package > 4.6kg is only 1%, while table dates package < 4.6kg are

tariffed at 13.2%.

- The USA market does not impose complex phytosanitary requirements: Pest Risk Analysis (PRA) is not required for dry dates; fumigation certificate is required and the use of methyl bromide is forbidden.

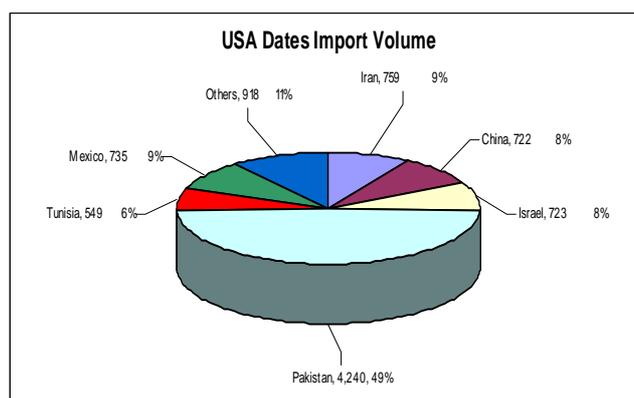


Table 6 – USA Dates Import Volume. Source: COMTRADE 2007 FAS USDA

² CIF – Cost Insurance & Freight

2.1.2. Russia

Russia currently imports some 22,000 MT/yr at a low price (\$0.60/kg) almost exclusively from Iran (64% market share), Pakistan and Algeria.

2.1.3. Southern Europe

The EU represents a challenge for any potential exporter other than Tunisia, Algeria and Israel.³ The three major EU importers, namely France, Italy and Spain, rely heavily on date production from Algeria, Tunisia and Israel.

Previous attempts to challenge Tunisian, Algerian and Israeli positions on the date market have failed. For example, Iranians targeted Italian, French and Spanish importers and distributors since 1990 with no success, and subsequently shifted their focus to “lower value” northern EU countries, such as UK, Germany and Denmark, which are characterized by higher consumption and imports of “common dates” and dates for industrial consumption.

| Italy Imports Dates | Import Value (1000EUR) | Market Share % | Import Qty (1000kg) | Market Share % | €/kg | \$/kg |
|------------------------|------------------------|----------------|---------------------|----------------|-------------|-------------|
| | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| Algeria | 35 | 0.2% | 25 | 0.4% | 1.41 | 2.12 |
| Egypt | 66 | 0.5% | 99 | 1.5% | 0.67 | 1.00 |
| Iran | 7 | 0.0% | 4 | 0.1% | 1.70 | 2.55 |
| Israel | 4,091 | 28.3% | 769 | 11.4% | 5.32 | 7.98 |
| Tunisia | 9,827 | 67.9% | 5,688 | 84.6% | 1.73 | 2.59 |
| Total EXTRA-EUR | 14,478 | 100.0% | 6,726 | 100.0% | 2.15 | 3.23 |
| France Imports Dates | Import Value (1000EUR) | Market Share % | Import Qty (1000kg) | Market Share % | €/kg | \$/kg |
| | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| Algeria | 12,461 | 26.6% | 9,701 | 38.7% | 1.28 | 1.93 |
| Iran | 265 | 0.6% | 166 | 0.7% | 1.60 | 2.40 |
| Israel | 7,912 | 16.9% | 2,305 | 9.2% | 3.43 | 5.15 |
| Tunisia | 24,352 | 52.0% | 12,502 | 49.9% | 1.95 | 2.92 |
| United States | 779 | 1.7% | 119 | 0.5% | 6.53 | 9.80 |
| Total EXTRA-EUR | 46,811 | 100.0% | 25,067 | 100.0% | 1.87 | 2.80 |
| Spain Imports Dates | Import Value (1000EUR) | Market Share % | Import Qty (1000kg) | Market Share % | €/kg | \$/kg |
| | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| Algeria | 1,041 | 7.9% | 766 | 13.5% | 1.36 | 2.04 |
| Egypt | 36 | 0.3% | 39 | 0.7% | 0.93 | 1.40 |
| Israel | 3,896 | 29.5% | 1,145 | 20.2% | 3.40 | 5.10 |
| Tunisia | 7,969 | 60.3% | 3,649 | 64.2% | 2.18 | 3.28 |
| Total EXTRA-EUR | 13,208 | 100.0% | 5,682 | 100.0% | 2.32 | 3.49 |

Tables 7.1-3 – Date Imports in South European Countries: Italy, France and Spain, 2006. Source: COMTRADE 2006 - EUROSTAT

There are currently powerful barriers to enter the premium price Southern European market:

³ Tunisia, Algeria and more recently Israel have created powerful entry barriers to the Southern Europe export of dates based on integration with distributors/importers, varieties, marketing investments and, in the case of Tunisia, preferential tariffs (no import tariff being 4.2% for most of the other countries and 7.7% for USA).

- Mediterranean countries are not subject to import tariffs in the EU (4.2% for most of the other countries, 7.7% for USA);
- According to Nielsen data,⁴ large supermarket chains with conservative policy in new listing and certification account for 94% of the dates sales in Europe;
- Algeria, Israel and Tunisia reach the European market at a very competitive transport price (on average < \$30 MT);
- Slow market growth and supermarket policy of category management (currently no further listings for dates) do not open further possibilities for new brand listings.
- High integration between key distributors and growers in Northern Africa, especially from the former French colonies of Tunisia and Algeria increases their market competitiveness.
- Consumer (and buyer) preference for *Deglet noor* and *Medjool* varieties limits the product demand.

| Varieties | Deglet | Medjool | Sayer | Zahdi |
|---------------------------------|--------|---------|-------|-------|
| Overall preference | 89% | 8% | 2% | 1% |
| Sweetness: note 1 to 10 | 9.2 | 7.1 | 4.1 | 4.3 |
| Texture: note 1 to 10 | 9.5 | 8.2 | 5.5 | 5.2 |
| Skin: note 1 to 10 | 9.6 | 8.4 | 5.8 | 4.8 |
| Appearance: note 1 to 10 | 9.0 | 9.2 | 6.5 | 6.3 |

Table 8 – Consumer preferences in France, Italy and Spain.⁵

2.1.4. Northern Europe

Iranians have consolidated their position as leading suppliers of dates for industrial usage (inputs for cereal, Muesli, cereal bars and baking) to the UK, Germany and Denmark. Also, consumption of common dates goes at a considerably lower price compared to the price obtained by *Medjool* and *Deglet noor* varieties.

Iran occupies the downmarket segment in Northern Europe, with average CIF price <\$1.50/kg in Germany, CIF price < \$1.20/kg in UK for table dates:

| Denmark Dates Imports | Import Value (1000EUR) | Import Value (1000EUR) | Import Qty (1000kg) | Import Qty (1000kg) | €/kg | \$/kg |
|--------------------------|------------------------|------------------------|---------------------|---------------------|-------|-------|
| | 2005 | 2006 | 2005 | 2006 | 2006 | 2006 |
| Iran | 1,180 | 1,233 | 1,061 | 1,230 | 1.002 | 1.504 |
| Pakistan | 159 | 224 | 318 | 396 | 0.566 | 0.850 |
| Tunisia | 307 | 70 | 94 | 18 | 3.937 | 5.906 |
| Total EXTRA-EUR27 | 1,823 | 1,833 | 1,629 | 1,833 | 1.000 | 1.500 |

⁴ Nielsen Data Retail Index. Dec-Jan 2007.

⁵ Results of a consumer test conducted by a leading distributor in France, Italy and Spain in 2006, with a target group of 320 respondents.

| Germany Imports Dates | Import Value (1000EUR) | Market Share % | Import Qty (1000kg) | Market Share % | €/kg | \$/kg |
|--------------------------|------------------------|----------------|---------------------|----------------|-------------|-------------|
| | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| Egypt | 97 | 0.8% | 107 | 1.6% | 0.91 | 1.36 |
| Iran | 1,249 | 10.1% | 1,411 | 20.6% | 0.89 | 1.33 |
| Iraq | 82 | 0.7% | 106 | 1.6% | 0.77 | 1.15 |
| Israel | 1,205 | 9.8% | 247 | 3.6% | 4.88 | 7.32 |
| Pakistan | 181 | 1.5% | 254 | 3.7% | 0.71 | 1.07 |
| Saudi Arabia | 94 | 0.8% | 203 | 3.0% | 0.46 | 0.69 |
| Tunisia | 9,011 | 73.1% | 4,281 | 62.6% | 2.11 | 3.16 |
| Turkey | 129 | 1.0% | 123 | 1.8% | 1.05 | 1.57 |
| UAE | 2 | 0.0% | 1 | 0.0% | 1.60 | 2.40 |
| United States | 120 | 1.0% | 18 | 0.3% | 6.55 | 9.82 |
| Total EXTRA-EUR27 | 12,322 | 100.0% | 6,842 | 100.0% | 1.80 | 2.70 |

| United Kingdom Dates Imports | Import Value (1000EUR) | Market Share % | Import Qty (1000kg) | Market Share % | €/kg | \$/kg |
|------------------------------|------------------------|----------------|---------------------|----------------|-------------|-------------|
| | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| Algeria | 44 | 0.2% | 22 | 0.2% | 2.00 | 3.00 |
| Egypt | 61 | 0.3% | 51 | 0.4% | 1.21 | 1.82 |
| Iran | 4,920 | 23.8% | 7,423 | 60.9% | 0.66 | 0.99 |
| Israel | 10,089 | 48.9% | 1,990 | 16.3% | 5.07 | 7.60 |
| Pakistan | 421 | 2.0% | 676 | 5.5% | 0.62 | 0.93 |
| Saudi Arabia | 827 | 4.0% | 517 | 4.2% | 1.60 | 2.40 |
| South Africa | 822 | 4.0% | 160 | 1.3% | 5.16 | 7.73 |
| Tunisia | 2,450 | 11.9% | 984 | 8.1% | 2.49 | 3.74 |
| United States | 663 | 3.2% | 203 | 1.7% | 3.27 | 4.90 |
| Total EXTRA-EUR27 | 20,635 | 100.0% | 12,187 | 100.0% | 1.69 | 2.54 |

Tables 9.1-3 – Date Imports in North European countries: Denmark, Germany and UK (2006). Source: COMTRADE 2006 - EUROSTAT

2.1.5 EU27 – Other Countries

Other EU countries either import limited quantities of dates, or their markets are dominated Israeli and Tunisian date imports:

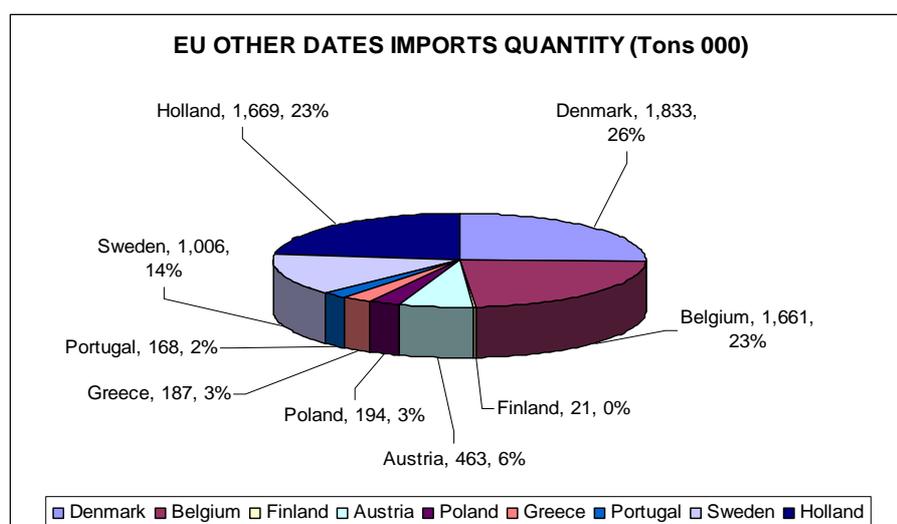


Table 10 – Date imports in other EU countries. Source: COMTRADE 2006 - EUROSTAT

| Netherlands Dates Imports | Import Value (1000EUR) | Import Value (1000EUR) | Import Qty (1000kg) | Import Qty (1000kg) | €/kg | \$/kg |
|---------------------------|------------------------|------------------------|---------------------|---------------------|--------------|--------------|
| | 2005 | 2006 | 2005 | 2006 | 2006 | 2006 |
| Iran | 682 | 515 | 971 | 556 | 0.928 | 1.391 |
| Israel | 1,281 | 1,892 | 302 | 522 | 3.621 | 5.432 |
| Tunisia | 748 | 972 | 418 | 479 | 2.029 | 3.044 |
| United States | 1,158 | 1,284 | 259 | 285 | 4.499 | 6.749 |
| Total EXTRA-EUR | 4,141 | 4,946 | 2,045 | 2,025 | 2.443 | 3.664 |

| Belgium Dates Imports | Import Value (1000EUR) | Import Value (1000EUR) | Import Qty (1000kg) | Import Qty (1000kg) | €/kg | \$/kg |
|------------------------|------------------------|------------------------|---------------------|---------------------|--------------|--------------|
| | 2005 | 2006 | 2005 | 2006 | 2006 | 2006 |
| Israel | 2,222 | 1,657 | 458 | 331 | 5.010 | 7.516 |
| Tunisia | 1,777 | 1,367 | 1,462 | 1,096 | 1.247 | 1.870 |
| Total EXTRA-EUR | 4,692 | 3,916 | 2,125 | 1,661 | 2.357 | 3.536 |

Tables 11.1-2 – Other northern European countries date import. Source: COMTRADE 2006 - EUROSTAT

2.2 INDUSTRIAL DATES

Two distinct products can be successful for a potential exporter such as Iraq: table dates and industrial dates. *Deglet noor* and *Medjool* varieties are the preferred table dates among consumers, imported almost exclusively from Tunisia, Algeria and Israel; over the last two decades, these countries surpassed California for dates exports. Table dates are premium price goods imported at an average \$2.72/kg.

Industrial dates are mainly used as input in the cereal and bakery industry. The preferred varieties are the *Sayer*, widely popular in Iran, and to a lesser extent in Iraq and Pakistan, due to its totally inverted sugar content. Iraq currently produces very low quantity of the *Sayer* variety.

The EU market size for industrial dates can only be inferred from importers' reports, since the EU27 has just recently separated HS code number for *Deglet and Medjool*⁶ and data is not available. According to the figures provided by US, EU and Canada importers, the global industrial market is relatively small (12,000 MT/yr) and is characterized by slow growth (+1.2% average 2002-2007).

- Worldwide supply of industrial dates is nearly monopolized by Iran (64%), followed by Pakistan, UAE and Algeria..
- Current CIF price for industrial dates is approximately \$805/MT.
- Pakistan's production is erratic both in terms of quantity and quality due to the unpredictable monsoons that cause humidity problems, and therefore has failed to establish itself as a provider alternative to Iran.
- Key industrial processors in Iran showed poor financial results⁷. Consumer Packages Processing and Packaging Workshops of *Sayer* Date in the Iranian province of Khuzestan

⁶ All the other dates are classified as "common dates".

⁷ Based on the yearly report 2006 of the *Sayer* date association in Khuzestan.

and the main center for all industrial date processing in the world. After the revolution a number of capital-intensive date processing and packaging units came to being in Khuzestan Province under state-run companies or using governmental subsidies. However, because of weak marketing and lack of sufficient feasibility studies the products of these units could not find their way into the world markets. To date, there has been no opportunity for optimal use of their capacities.

Targeting this value chain with Iraqi date products is a high-risk strategy due to several major factors:

- Necessity of building cold storage facilities from the ground up in absence of basic infrastructure (i.e. lack of electricity), while in other countries date processors rent already available cold storage space;
- Competitiveness of Iranian produce based on low processing costs, established commercial linkages, major dry fruit exporters with a dominant position in pistachios and raisins market. Also, Iranian date production is possibly subsidized by the state.
- Compliance requirement with complex and costly international food regulations (see Appendix for details).
- High investment, requiring as much equipment as the “premium” table dates but commanding a much lower price (respectively \$800/MT in comparison to almost \$3,000/MT for table).
- High break-even point. According to the *Inma-Aglard* Feasibility Study, a production of 12,000MT/yr is required to reach the break-even point of any date producing enterprise.

2.3 IRAQ DOMESTIC CONSUMER MARKET

2.3.1. Consumption

Official statistics for the Iraqi production and consumption of dates are largely unreliable, faulty or non-existent. Key local market players⁸ estimate that Iraq currently produces some 420,000MT of dates per year, with no more than 8.5 million fruiting palm trees. According to a FAO survey in 2005, Iran has the highest consumption rate of table dates in the world with 7.8kg/per capita⁹. In the *Inma* estimate¹⁰, some 120,000MT of table dates are consumed in Iraqi households (nearly 6kg per capita) on annual basis.

The widespread habit of growing courtyard palm trees limits the tradable quantity of dates in the market to estimated 60,000MT. Most, if not all table dates in Iraq, are consumed virtually unprocessed.¹¹

⁸ Based on PRTs reports and Basrah dates associations and other dates producers.

⁹ One of the main findings of the report was to highlight the low consumption rate among the new generation of Iraqis (less than half of the previous two generations).

¹⁰ Based on the USAID/*Izdihar* Consumption Survey in the “Food Processing in Iraq” study.

¹¹ *Inma* field intelligence clearly shows that table dates are not processed, and that there are no operating fumigation chambers in place. Actual “processing” seems limited to manual sorting and grading.

The consumption of table dates is unlikely to increase significantly in the near future. Throughout the MENA area, with the exception of Syria, table date consumption is visibly declining.¹² Key date producers in Iraq agree that the current 420,000MT/yr estimates are the lowest historical production. Retail prices for dates have risen sharply in 2007: from a level of IQD500¹³ in 2005 and 2006 to IQD700.

| Iraq Dates Usage | MT | % |
|-----------------------|---------|--------|
| Quantity wasted | 60,000 | 14.3% |
| Household Consumption | 120,000 | 28.5% |
| Export | 50,000 | 11.9% |
| Industrial Usage | 90,000 | 16.7% |
| Animal Feeding | 100,000 | 35.7% |
| Total Production | 420,000 | 100.0% |

Table 12 – Iraqi date usage. Source: *Inma* field estimate.

There is a consensus in the market that current production – harvested October-November 2007 – may be at a historical low of only 400,000MT. This is mainly because of palm diseases, which significantly affect production, in lack of Integrated Pest Management program (IPM) and interrupted traditional aerial spraying.

Key operators in the Iraqi date market agree that production should stabilize around 500,000MT/yr once new techniques are adopted by farmers – notably manual pollination and IPM – and distribution and storage are improved.

Realistically, household consumption has limited capacity to absorb additional production. Judging from historical consumption trends, no more than an additional 1-2kg/per capita (some 20-40,000MT in total) should be expected.

Increasing gross sales in this “sub value chain” will likely depend more on price increase (for higher perceived value) than volumes (higher consumption). Iraqi value perception of dates seems, nevertheless limited by the following factors:

- Highly unsophisticated demand even among the middle class, and
- Wide availability in “one’s own courtyard”.

The assumption that a better quality processed dates will command higher market price is questionable and unlikely to happen in the short term. In the long term, there is no question that demand for higher quality fruits and vegetables in general will rise. In the current value chain, large wholesalers that store dried dates to make them available year round, are the main beneficiaries.

2.3.2. Packers

On the other hand, there is undoubtedly an opportunity to create value for farmers supporting packers. **Date packers** traditionally play an important role in Iraq: they act as brokers that buy the produce at harvest, pack it (in 20kg plastic bags), store it cold and sell it throughout the year.

This activity involves very little processing, since dates are usually neither washed nor fumigated. In a nutshell, packaging amounts to a brokerage activity requiring financial

¹² MENA = Middle East + Northern Africa.

¹³ IQD = Iraqi Dinar (1USD=1,184IQD)

resources for raw material purchase. Packers usually buy at an average of \$180-200/MT and sell at \$240/MT, making an operational profit of approximately 20-25% (\$30/MT) and a net profit close to 10-% (\$20/MT). Packers usually offer better conditions to small farmers than wholesalers or agents.¹⁴.

Packers' activity has been hampered over the last years by high interest rates and high working capital costs.

The revitalization of the packers industry could reduce date wastage in the market, balance wholesaler bargaining power and lead to contract farming, though it is unclear if benefits would reach the farmers, or only brokers.

Dates present a buyer market in Iraq, with fragmented production and with only some fifteen to twenty established packers and/or wholesalers.

2.3.3. Producers

The traditional practice of landlords providing capital to sharecropping farmers has been disrupted since 2003, and the entire sector has suffered for lack of capital investment presumably due to low expected returns in comparison to other investments. According to the Dates Board Association in Basrah, there are no more than 150 producers (land owning families) with over 20,000 trees, accounting for 60% of the entire Iraqi national production.

Looking at the supply side at farm level, *Inma's* goal is to create the conditions for a production expansion of 150/200,000 MT. *Inma* strategy focuses on two pillars: the introduction of a new Integrated Pest Management Plan, and the selective adoption of manual pollination. Training on pruning, irrigation and plant nutrition management will also be developed.

INTEGRATED PEST MANAGEMENT (IPM) *Inma* recommends adopting the injection system in which chemicals are injected by drilling and piping through the trunk of the tree. A combination of insecticides *thiamethoxam* (@6 g/palm) and *cyromazine* (@2.5 g/palm), along with the fungicide *difenoconazole* (2.5mt/palm) is recommended. The IPM recommended system is currently under scrutiny at the Ministry of Agriculture.

Total chemical application has a cost of \$1.6/tree for year 1 and \$0.8 for the following years:

Drilling, piping, injecting = \$0.8/tree (first year only)

6g *Thiamethoxam* 25 WG = \$0.45

2.5g *Cyromazine* 75 WP = \$0.20

2.5ml *Difenoconazole* 250g/l \$0.15

Inma's goal is to support the IPM scheme for a minimum of 8 million trees in the course of 3 years.

¹⁴ Source: Farmers Associations – Basrah, Iraq.

MANUAL POLLINATION Manual pollination is expensive. *Inma* estimates costs at about \$8/tree (\$2 for pollen + \$4 for Carbarayl +\$2 for labor). Nevertheless, manual pollination may well increase yields by 60-80kg/tree, easily offsetting the investment cost – even at minimum additional revenue of \$12 per tree. The adoption of manual pollination requires a minimum market price of approximately \$200/MT and 60kg/tree in yields in order to be a worthwhile investment.

2.4 IRAQ DOMESTIC INDUSTRIAL DEMAND

2.4.1. Date syrup

Date syrup (Arabic: *dibs, rub*), probably the most common date derivate, is produced in three different ways: (i) as an accidental by-product in the storage of bagged, humid dates (especially in the Gulf area), (ii) at the home or village level by extraction and boiling down of the juice, and (iii) on a semi- and full industrial scale.

The process consists of:

1. pretreatment (if required)
2. extraction of juice
3. clarification
4. concentration

Under normal circumstances 10kg dates would be required to make 10kg of syrup of 67 °Bx.¹⁵ Estimated consumption of date syrup in Iraq is high and could well exceed 50-60,000MT/yr between industrial and homemade products. Such factories exist in Iraq, including a state-owned one in Kerbala, but they are reportedly with inefficient and outdated production and packaging lines.

The industry can be revitalized and increased in value by:

- New, more efficient and expanded production capacity in factories currently producing date syrup;
- New specialized middle size plants in new areas;
- The introduction of contract farming between processors and date farmers;
- Possible line extensions of date syrup with different flavors (i.e. chocolate) and various packaging, following the example of the US peanut butter, “*doce de leche*” in Argentina, *Nutella* in Europe, etc;
- Utilization of syrup in the lollipop industry.

¹⁵ Degrees Brix (symbol °Bx) is a measurement of the mass ratio of dissolved sucrose to water in a liquid. A 25 °Bx solution is 25% (w/w), with 25 grams of sucrose sugar per 100 grams of liquid. In other words, there are 25 grams of sucrose sugar and 75 grams of water in the 100 grams of solution.

Although the syrup industry does not require quality input, a more efficient syrup industry could represent an alternative to animal feeding, a solution to wasted dates, and the possibility for farmers to bypass intermediaries selling directly to processors (local contracting).

The future of the Iraqi dates industry largely depends on the identification of new sources of demand, or on the capacity to add value to the current supply.

Dates syrup is a very high added value derivative: it is currently sold at wholesaler price at a minimum of \$3.0/kg (\$3,000/ton) with an input of low grade dates probably set at \$300/ton. Dates syrup is widely consumed (although not always available in the retail market) being present in most of the breakfasts of Iraqi consumers (especially in winter time). The product has undoubtedly high penetration: in a sample totaling two hundred in Baghdad was regularly present in 134 households.¹⁶ Average consumption of dates syrup is around 2.5kg/per capita, although *Izdihar* panel showed considerably higher level among young consumers (4kg).

More importantly, in addition to a fast growing population, Iraq also has a huge and growing percentage of young people. This factor could have a dramatic influence on the demand for products such as *dibis* (date syrup). Although Iraq has only 26 million people, almost 10.5 million of them are aged 14 and younger, two million more than the number of young people in Italy, which has a total population of 60 million.

Currently supply of dates syrup is totally disrupted. Most factories have only recently been privatized. The existent date processing factories are either too large or too small. They have outdated equipment from the former Eastern Block (mainly Bulgaria) with no spare parts available. Their huge capacity (dates processed at 1,000kg/h) requires considerable storage and working capital. On the other hand of the spectrum, Iraq has plenty of small and inefficient production run on household basis, with low capacity and no quality control. Current packaging in the market is also constrained by outdated, dull and unattractive appearance. The product has no suitable packaging for consumption away from home, and there is no marketing effort whatsoever to make it attractive to young consumers.

The identification of new consumer groups and improved packaging for date syrup could drive the absorption of an expanded supply of dates in the market and/or add value along the chain.

In *Inma's* calculation, an increase in dates syrup consumption could represent an additional \$40-50MT/yr for the farmers providing an alternative to animal feeding and possibly an added value of \$1,500/T for the processors.

Inma aims at promoting date syrup consumption through:

- Establishment of medium-size highly efficient factories with capacity to process 200kg of dates per hour.
- Improved packaging of the product with increased quality, appearance and taste (improved organoleptic characteristics).

¹⁶ USAID/*Izdihar* Consumer Panel 2006.

- New formulations of dates syrup (new flavors, new added ingredients), targeting young consumers (core target: children 3-12 years old).
- Identification of forms of packaging suitable for consumption away from home (snack).
- Promotion of a new image for the dates syrup via advertising and packaging, associated with sports and healthy energy.

In order to achieve the revitalization of the dates syrup industry, *Inma* proposes the support of a specialized company in food product development and the promotion of a modern/efficient small plant of dates syrup (200 to 500kg/h capacity).

FOOD PRODUCT DEVELOPMENT: ASSIGNMENT CHARACTERISTICS A consultant company will provide expertise to assist *Inma* in the following activities:

- **Development of new formulations for date syrup:** flavored (e.g. chocolate) or with the addition of new ingredients (i.e. chocolate). New formulations should not alter the date syrup basic formulation which will represent the core of the product proposition. Additional cost (in addition to syrup date raw material) should not exceed in total 20% of the cost of the syrup (\$0.2/kg). Some formulations will target children 3 to 12 years old (globally, consumers with preference to sweet over salted). The development of innovative formulations will rely on the consultant's know-how and expertise in trends in the global confectionery industry. The possibility and cost of a formulation incorporating vitamins should also be explored, following the trend of similar products which provide vitamin integration important in a healthy nutritional diet.
- **Packaging:** the consultant will recommend a packaging for consumption of date syrup in a "snack" form, suitable for consumption away from home. The pouches must necessarily be explored in addition to other possibilities recommended by the consultant. The information on new packaging must include also the lead of competitive suppliers and a cost estimate.
- To recommend **packaging alternative** to the existent glass jars and to provide the leads and a cost estimate of the leading manufacturers.

The validity of the concept will be tested in a market test in Iraq and possibly in an export market in 2009. The attractiveness of the new formulation will be tested in Iraq against the plain current date syrup formulation.

2.4.2. Liquid Sugar

The utility of liquid sugar is highly restricted by the fact that no date contains sucrose alone. In most cases, sucrose constitutes only a minor component that includes invert sugar composed of more or less equal parts of glucose and fructose. The latter sugars are difficult to turn into crystalline products and are less convenient for household use than sucrose. Liquid date sugar must therefore compete with liquid sugars derived from sucrose or corn syrup and high fructose corn syrup (HFCS) for industrial usage. These syrups already have a distinct market but mainly on the industrial level.

A second restriction in the use of date sugar is economy of scale. The type of industrial process involved, with a high cost of investment and multi-step process, makes it very

sensitive to the scale of production, with production costs decreasing rapidly as capacity increases.

Clarification costs for refining date syrup are higher than for syrups derived from cane or beet and it involves several rather delicate and expensive operations. This component of date syrup production involves chemical clarification by precipitation, decolorization by adsorption and demineralization by ion exchange. Use of liquid date sugar is focused mainly on those products where use of date syrup with its flavor or color is less desirable. Soft drinks, light colored cakes, jellies and fruit preserves, confectionery and ice cream are the main target products.

Development of a national industry of liquid sugar does not seem a realistic option in today's Iraq.

2.5. IRAQ DOMESTIC ANIMAL FEEDING

“Cull” dates, or dates unsuitable for table consumption or industrial usage, (too hard, small, blemished, infested, etc.) are destined for animal feed. Dates represent, however, unbalanced feed, high in carbohydrates and low in protein and fat. For high quality animal nutrition, dates must be supplemented. The actual value chain of dates for animal feed is poor, mainly because of the absence of commercial links between farmers and feed mills. Wholesalers currently buy cull dates at a rate of \$30/50/MT and resell with a net margin of 20% to small feed animal processors or directly to other farmers. Prices are likely to increase due to a worldwide surge in grain prices.

For economic evaluation, it must be remembered that dates have a lower (20%) energetic value compared to barley:

100gr dates = 280 Kcal or 1180 kJ
 100gr barley = 350 Kcal or 1407 kJ

| Values | DM | CP | CF | NDF | ADF | ADL | Ash |
|--------------|------|-----|------|------|------|------|-----|
| Wasted dates | 84.2 | 4.5 | 7.4 | 22.2 | 18.0 | 9.3 | 4.4 |
| Pits | 89.5 | 6.4 | 20.6 | 57.5 | 41.2 | 18.4 | 6.8 |

Table 13 - Chemical Composition (in percent DM). Source: ICARDA ALEPPO

A number of general studies on dates for animal feed conclude the following:

Cull dates

- Chickens: may replace up to 30% of maize;
- Lambs: may replace up to 30% of barley;
- Cattle: may replace up to 50% of barley.

Dates pits

- Date pit grinding requires five times more energy than grain.
- Dates pits can successfully replace up to 10% barley in chick ratios.
- Dates pits can be used up to 25% in ruminant ratios if a good protein supplement or urea is added.
- A wheat bran/barley mixture for carp feed could be replaced by up to 65% date pit meal.

The current price rise of grains worldwide and the high price of barley in Iraq (\$240MT in November, 2007) may create a market for dates as a barley substitute in animal feed rations.¹⁷

A more efficient systematic approach linking farmers with feed mills could create a new industry creating possibly \$30-40 added value per metric ton. Gains in the value chain depend on the establishments of large feed mills buying directly inputs from the farmers.

2.6 IRAQ REGIONAL EXPORT

At least four countries in the region – UAE, Syria, Turkey and India – represent potential targets for Iraqi dates export.

2.6.1 UAE

The UAE, as a regional importer and reseller at the upper end of the value chain dominates the value added processing segment of the date market. Despite limited population, UAE has a remarkable import-export business for dates, operating as a regional hub for supplies to India and Southeast Asia.

| UAE DATES IMPORT | Import Value (1000\$) | Import Qty (1000kg) | Price/kg In USD |
|------------------|--------------------------|------------------------|--------------------|
| | 2005 | 2005 | 2005 |
| Iraq | 16,951 | 124,022 | 0.137 |
| Iran | 8,951 | 66,225 | 0.135 |
| Saudi Arabia | 6,323 | 5,248 | 1.205 |
| Tunisia | 568 | 327 | 1.737 |
| TOTAL | 33,713 | 196,873 | 0.171 |

Table 14 – UAE Dates Import 2005. Source: COMTRADE 2006

Trade statistics from UN Comtrade report on exports of 120,000MT from Iraq in the year 2005. Traders and importers in the UAE estimate current imports of dates from Iraq at some 20-30,000MT, although they admit it might have been higher in 2005 because of the poor harvest in Pakistan. Prices CIF paid by UAE importers are nevertheless as low as \$0.24/kg. Not surprisingly, most dates exported to UAE are bulk and untreated.¹⁸

¹⁷ Barley price in Iraq were at \$104/MT during 2006.

¹⁸ CIF price = Cost + Insurance + Freight.

A key question is whether or not it is possible to add value by supplying, for instance, basically treated dates (i.e. fumigated and vacuum packed) rather than exporting unprocessed bulk product. A survey has been conducted among leading UAE traders showing the following key findings:

- Iraq dates currently occupy the “good value for money” segment being the cheapest available in the market. They are aimed mainly at the India, a notoriously price sensitive market.
- There is a demand for *Zahidi* dates in the Gulf (*Zahidi* is one of the cheapest variety available).
- Direct links between key UAE traders and Iraqi exporters have been totally disrupted. UAE traders currently buy from middlemen or intermediaries, Iraqi exporters sell to UAE middlemen and “order consolidators”.
- To satisfy Indian demand, UAE traders frequently buy Iraqi dates in the open market in the Gulf at an average price of \$370/MT.
- Product requirements are basic: no fumigation, and dates are merely pressed in plastic bags.
- UAE traders complain about the lack of standardization of Iraqi dates in terms of varieties (mono-variety is required), size, and color.
- Both Iraqi exporters and UAE traders wish to re-establish direct links.

2.6.2 Syria

Syria probably presents the best opportunity for Iraq in creating value in the chain of export dates:

- Syria consumption of dates is growing: it almost doubled over the last four years although apparently led by animal feeding.
- Iraq already has a market share of 60% and logistic competitiveness.
- Average prices commanded by Saudi Arabia (\$0.72/kg) and Iran (\$0.34/kg) in comparison to Iraq (\$0.19/kg) suggests a possibility for Iraq to improve quality and raise prices in order to add value along the chain.
- Syria has no processing facilities.

| SYRIA DATES IMPORT | Import Value (1000\$) | Import Qty (1000 kg) | Price/kg In USD |
|---------------------------|----------------------------------|---------------------------------|----------------------------|
| 2001 | 1,563 | 3,812 | 0.410 |
| 2002 | 903 | 2,529 | 0.357 |
| 2003 | 3,648 | 13,495 | 0.270 |
| 2004 | 4,443 | 17,837 | 0.249 |
| 2005 | 5,497 | 22,301 | 0.246 |
| 2006 | 7,411 | 23,917 | 0.310 |
| Iraq | 3,080 | 16,293 | 0.189 |
| Saudi Arabia | 2,712 | 3,755 | 0.722 |
| UAE | 1,476 | 3,317 | 0.445 |
| Egypt | 72 | 384 | 0.188 |
| Iran | 48 | 143 | 0.336 |

Table 15 – Syria dates import 2001/06. Source: COMTRADE 2006

In summary, there may be a realistic opportunity, short and medium term, to sell higher quality processed dates in Syria at approximately \$400/MT price and presumably in higher volumes to supply a fast growing market.

2.6.3 Turkey

Turkey is the only high value market for dates accessible to Iraq, although not as premium price as Europe:

| TURKEY DATES IMPORTS | Import Value (1000\$) | Market Share % | Import Volumes (MT) | Market Share % | Price/Kg in USD |
|----------------------|-----------------------|----------------|---------------------|----------------|-----------------|
| 2000 | 4,798 | | 8,272 | | 0.58 |
| 2001 | 4,384 | | 7,307 | | 0.60 |
| 2002 | 7,954 | | 12,829 | | 0.62 |
| 2003 | 5,108 | | 7,858 | | 0.65 |
| 2004 | 5,921 | | 8,224 | | 0.72 |
| 2005 | 8,943 | | 11,466 | | 0.78 |
| 2006 | 8,864 | | 10,821 | | 0.82 |
| Iran | 7,122 | 80.3% | 8,990 | 83.1% | 0.79 |
| Tunisia | 1,237 | 14.0% | 585 | 5.4% | 2.11 |
| Saudi Arabia | 380 | 4.3% | 827 | 7.6% | 0.46 |
| Iraq | 123 | 1.4% | 417 | 3.9% | 0.29 |

Table 16 – Turkey dates import 2000/06. Source: COMTRADE 2006

The Turkish market warrants a specialized analysis targeting Turkish buyers-importers. Prices commanded by Iranians (\$0.79/kg) in comparison to Iraqi (\$0.29/kg) may indicate there is a chance for Iraq to create value, although Iranian competition cannot be underestimated.

2.6.4 India

India is by far the biggest worldwide importer of dates in volume, although at a very low value (\$260/MT). Iraq has no direct export to India, although some products may be exported there via Dubai. Real import price of dates in India may well be higher than the official number registered by the Comtrade data: the latest available figure in the Comtrade statistics refers to 2006; also, Indian imports are frequently “under-invoiced” for fiscal reasons, while average prices of dates are affected by a significant amounts of *in kind* Saudi Arabian donations in dates (as much as 50,000MT/yr). A more realistic import price estimate for 2008 would be at \$380-400/MT.

| INDIA DATES IMPORTS | Import Value (1000\$) | Market Share % | Import Volumes (MT) | Market Share % | Price/Kg \$ |
|---------------------|-----------------------|----------------|---------------------|----------------|-------------|
| 2000 | 41,535 | | 192,619 | | 0.22 |
| 2001 | 50,228 | | 244,366 | | 0.21 |
| 2002 | 27,801 | | 171,522 | | 0.16 |
| 2003 | 33,043 | | 193,755 | | 0.17 |
| 2004 | 46,396 | | 247,874 | | 0.19 |
| 2005 | 55,737 | | 240,399 | | 0.23 |
| 2006 | 74,686 | | 286,317 | | 0.26 |
| Iran | 38,522 | 51.6% | 186,377 | 65.1% | 0.21 |
| Pakistan | 31,540 | 42.2% | 86,950 | 30.4% | 0.36 |
| UAE | 2,441 | 3.3% | 7,507 | 2.6% | 0.33 |
| Oman | 1,425 | 1.9% | 4,001 | 1.4% | 0.36 |
| Saudi Arabia | 650 | 0.9% | 1,324 | 0.5% | 0.49 |

Table 17 – India dates import 2000/06. Source: COMTRADE 2006

A fast-growing middle class and rising purchasing power could soon generate more demand for quality processed dates in India. There may be potential - short term - for Iraq to export directly to India some 20-30,000MT/yr with significant added value, provided direct links with importers, while avoiding UAE intermediation, are established.

APPENDIX:

EU REQUIREMENTS/LEGISLATION FOR FRUIT and VEGETABLES

EC 178/2002

Traceability. FBO – Food Business Operator – shall be able to identify any supplier or recipient of their food products.

EC 29/2002

Phytosanitary certificate.

EC 178/2002 and 2073/2005

Microbial Contaminants.

EC 396/2005

Compliance to limits of pesticides residues (MRLs) < 0.001 mg/kg.

EC 2/1995

Food additives legislation.

Other requirements (from private sector)

EUREPGAP Certification
ISO 9001
ISO 22000

EUREPGAP Certification is based on three principles:

- Food Safety/HACCP
- Environmental issues
- Social Standards/Workers welfare