Competitiveness of palm dates fruit of Tunisia in the Mediterranean region

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Abstract

The date-palm cultivation and your trade are questions of clear strategic importance in terms of economic, social and environmental development in Tunisia. However, the globalization of markets has had a huge impact on the traditional concept of the comparative advantage enjoyed by Tunisia in date exports. In fact, an analysis of the competitive advantage of the Tunisian date industry in the Mediterranean area and Iran over the last 20 years shows that Tunisia is still the main supplier of dates to the EU. The Deglet-Nour variety puts to Tunisia ahead of traditional competitors such as Algeria and Iran, with average of competitiveness indices as BIS 6405.99, DI 17.38, CMS 41.04 and TBI 99.50 are more stable than those countries during the studied period. But it is currently facing new competitors like Israel and re-exporting countries like France. New business strategies (conditioning, new non-chemical treatments, packing, opening new markets, new distribution channels) would be positive responses to tackle current market limitations, the emergence of new producers and restrictive EU policies.

Keywords: competitive indices; date palm sector; export-import; Mediterranean countries.

1. Introduction

The Tunisia accession to membership of the World Trade Organization (WTO); and the Free Trade Agreement with the European Union (EU) in 1995, has marked the foreign trade policy in Tunisia. Within this context, the food industry has been facing new challenges arising from free trade and greater access of the Tunisian economy to the rest of the world. This has led companies in this sector to improve both their performance and competitiveness.

The agricultural and food policy in Tunisia has focused on the maximization of production, thus agricultural activities were first carried out according to national guidelines and objectives of self-sufficiency in terms of food, and subsequently food safety, by supporting production prices and subsidizing most agricultural inputs [1].

Globalization has made companies worldwide more competitive. Omoregie and Thomson [2] informed that competitiveness is a relative concept; therefore there is a need for a measurement framework that will help to systematically evaluate all comparable factors thought to be relevant in the pertinent economic activities. This concept can be analyzed through competitive advantage, in this line; this work proposes to study the competitive position of a strategic sector in the Tunisian economy as palm date sector.

The economic importance of date-palm in Tunisia is reflected in the date-growing area, which covered over 51,000 hectares in 2011 [3]. This extension has been steadily increasing over the past 20 years, doubling between 1990 and 2010, and is the sixth most widespread area in the world, after Saudi Arabia, Algeria, Iran, Iraq and Morocco.

Tunisia is considered leader in the production and export of cv. Deglet-Nour [4], which has specific organoleptic characteristics (flavor, color, texture...), with over 73% of its production, and over 85% of exports. This cultivar is *par excellence* the most marketed in Europe, since about 90% of dates imported to the EU are 'Deglet-Nour', and 90% of these are imported from Tunisia and Algeria. The latter is Tunisia's main competitor, with the remaining 10% being supplied by Israel and the USA, emerging producers of this variety.

Given the importance of palm date sector in the Tunisian economy and the different technical problems that limit its trading system, we analyzed Tunisian competitive position of this sector in relation to its main competitors in the Euro-Mediterranean area and Iran, insomuch as more than 88% of production and 70% of world trade take place there, determining by the

degree of specialization and dependence, trade balance, analysis of market share.

2. Methodology

[5] reported that on microeconomic theory one assumes that there exists a market constituted by a group of commodities. The commodities compete in the same market when the goods are substitutable for the consumer or the producer, which is the case of palm date fruit, in the Mediterranean area.

2.1 Balassa's revealed comparative advantage index (RCA).

$$\mathrm{RCA_{ij}\ or\ BIS_{ij}} = \frac{\left({x_{ij}}/{\sum x_j}\right)}{\left({x_j}/{\sum x_j}\right)} \quad (1)$$

Where: x_{ij} represents exports from country i for product j; $\sum x_j$ represents exports of all products of country i; x_j represents exports of product j in a reference area; and $\sum x_j$ represents exports of all products of the reference area.

This index varies between 0 and + ∞, values <200 indicate that country i is relatively less specialized in the sector j than the reference area, or is at a disadvantage compared to the reference area. For values >200, we can say that participation of the sector j in the structure of exports from country i is higher than that observed in the reference area, whereby one can state that the said country is strongly specialized in this sector.

2.2 Dependency ratio (DR).

$$\mathrm{DR_{ij}} = \frac{\left({m_{ij}}/{\sum m_j}\right)}{\left({M_j}/{\sum M_j}\right)} \times 100 \quad (2)$$

Where: m_{ij} represents imports from country i for product j; $\sum m_j$ represents imports of all products from country i; M_j represents imports of product j in the reference area; and $\sum M_j$ represents imports of all products from the reference area.

For this index, one can compare the structure of imports of a country within the reference area. If it is >100 for sector i, one can say that participation in the said sector in the structure of imports of country j is higher than that observed in the reference area.

This index does not have to be correlated with the specialization index of RCA, since there is no relationship between the two indices [6].

2.3 Constant market share (CMS).

$$\mathrm{CMS_{ij}} = \left(\frac{x_{ij}}{x_m}\right) \times 100 \quad (3)$$

Where: x_{ij} represents exports from country j of product i; x_m represents exports of the geographical area taken as a reference of a product i.

Is an approach that analyzes trade patterns and trends in order to formulate policies, the technique identifies the factors underlying the results of comparative export of a country [7]. This method disaggregates trade data of the countries surveyed and compares trade flows around the world.

2.4 Trade balance index (TBI).

$$\mathrm{TBI_{ij}} = \left[\left(\frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}\right)\right] \times 100 \quad (4)$$

Where: X_{ij} and M_{ij} represent exports and imports, respectively, of country i for product j.

The TBI value varies between −100 (if a country only imports) and 100 (if a country only exports). Any value within −100 and +100 implies that the country exports and imports a commodity simultaneously. A country is referred to as "net importer" in a specific group of product where the value of TBI is negative and as "net exporter where the value of TBI is positive.

3. Results and discussion

3.1 Balassa's revealed comparative advantage index (RCA).

Table 1a) show that Tunisia is the second most specialized country in date exports after Algeria. It presented specialization indices much higher than 200 throughout the study period, remaining more or less stable with a slight decline in the latter part of the study (BIS = 5390.84 in 2006-2010), exceeding the BIS of Egypt by 41 times on average during the study period (first producer of dates in the world), an average of 8 times that of Israel (whose improvement is ongoing) and an average of 3.3 times that of Iran (the second largest date producer in the world).

Fig. 1b shows that on analyzing the Tunisian date export (measured as the Exports/Production ratio), which gives an average of 33% over the 20

years studied and has been as high as 50% in recent years, we see that it greatly exceeds the export of Algeria, with an average of 3.5%, or Iran 7.4% and Israel 23% for the same study period. This means that Tunisia has made by far the greatest effort to export its dates to international markets, dominating with 26% of global date exports in the last decade [8].

3.2 Dependency ratio (DR).

The DR or relative advantage of imports [9] for Tunisia in the date sector ranged from 10 to 26 during the study period (Table 1b)). This is considered relatively low compared to Morocco (ranging from 160-1900), Jordan (300-500), France (105-201), Spain (58-80), and Italy (45-76), all considered major importers of dates.

Therefore, the fact that BIS>>200 and DR ≈ 0, shows that Tunisia is strongly specialized in exporting dates, and has a high RCA compared to Mediterranean countries and Iran. Moreover, Algeria is its main competitor in international markets with its BIS descending in the last period, almost equal to the BIS of Tunisia. This is probably due to phytosanitary problems that affect levels of production and marketing of Algerian dates. Given this situation, Tunisia should seek to improve or at least maintain its competitive position in the future, solving the problem of dates. Moths mentioned above and considered the main threat of the date palm industry in Tunisia, and seek alternatives to chemical treatments to meet international and European standards, maintaining a low infestation rate and optimum product quality.

3.3 Constant market share (CMS).

Table 1c) shows that Tunisia ranks first in the Mediterranean, and is ahead of Iran for the time studied, with a CMS average of 41%. This score remained more or less stable throughout the observation time, with small progressive increases in one time to another, reaching a market share of 44% in the 2006-2010 period.

Iran ranked second in market share, which is considered important; however, it was unstable given the variation between one period and another, and with significant losses after 1996, dropping from 33% in the 1991-1995 period to an average of 24%, from 1996-2010. This probably reflects economic losses due to the progression of the red palm weevil in Iran.

In the Mediterranean, Algeria began in second place in market share criterion, but has declined drastically, dropping from 30% in 1991-1995 to 4.76% in 2006-2010. It has lost more than 25% of its CMS probably due to the decline in French imports, its main destination.

The remaining countries have a negligible share, such as Egypt with an average CMS of 1.40%, over the observation period, or Italy, Jordan, Turkey, Morocco and Spain, with an average CMS <0.5%.

3.4 Trade balance index (TBI).

Economic development is probably the most important policy objective in less developed countries and exports are often seen as an engine for growth [10]. Results of TBI given in Table 1d) confirm this concept and show that Tunisia is a net exporter of dates, with values greater than 0, and is very close to 100 (TBI average 99.59). Tunisia exports but does not import dates, or if it does so, in negligible quantities.

Likewise Iran, Israel and Algeria have TBI values that are equal or very close to 100, indicating a similar export structure and competitive advantage.

Egypt has an average TBI value of 65% during the study period, indicating that it is a net exporter. However, it also imports a significant amount of dates due to the large domestic demand, added to the fact that most of the varieties grown there are lacking in quality and are used for animal feed [11].

4. Conclusions

The date industry is important in Tunisia, in terms of production and export, playing a key socio-economic role. Given the analysis of this sector's competitiveness within the Mediterranean basin and Iran, we conclude that Tunisia has a highly important trade position compared to the Mediterranean area. Nonetheless, recent years have seen a decline in this comparative advantage due to declining competitiveness indices.

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Tables y Figures

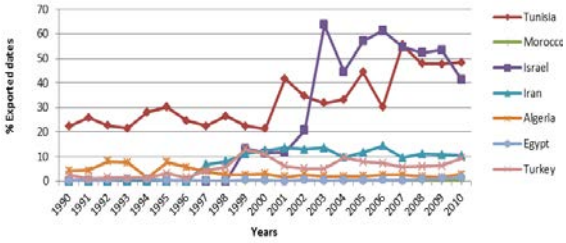

Figure 1. *Percentage of exported dates according to countries.*

Table 1. Analysis of no-price competitiveness of dates in the Mediterranean and Iran

a) Specialization index (RCA or BIS)

Country	1991-95	1996-00	2001-05	2006-10	Averages
Tunisia	6194	7345	6694	5391	6406
Iran	2742	2188	1429	1260	1905
Israel	633	305	1127	1053	779
France	30	37	26	18	28
Egypt	207	170	78	173	157
Algeria	30213	35331	13713	6720	21494
Italy	2	3	2	5	3
Jordan	139	60	137	149	121
Turkey	2	7	8	9	6
Morocco	45	5	7	1	14
Spain	3	3	2	2	3
Mediterranean	100	100	100	100	100

b) Dependency ratio (DR)

Country	1991-95	1996-00	2001-05	2006-10	Averages
Tunisia	10,7	17,5	26,2	15,2	17,4
Iran	0,0	0,0	0,3	0,0	0,1
Israel	0,0	0,0	0,0	0,4	0,1
France	201,1	189,0	125,1	105,5	155,2
Egypt	28,7	7,5	5,5	14,5	14,1
Algeria	2,2	0,2	0,4	0,0	0,7
Italy	76,3	72,0	46,7	42,9	59,4
Jordan	506,7	379,3	343,7	305,0	383,7
Turkey	26,7	38,5	54,9	77,4	49,4
Morocco	158,2	373,3	1877,6	1921,2	1082,6
Spain	79,7	99,4	66,5	58,0	75,9
Mediterranean	100,0	100,0	100,0	100,0	100,0

c) Constant market share (CMS)

Country	1991-95	1996-00	2001-05	2006-10	Averages
Tunisia	36,6	40,1	43,4	44,0	41,0
Iran	32,6	27,0	21,2	25,6	26,6
Israel	10,3	4,3	13,4	13,1	10,3
France	14,5	16,3	10,7	6,7	12,0
Egypt	1,3	1,1	0,8	2,6	1,4
Algeria	30,7	22,8	8,3	4,8	16,6
Italy	0,3	0,5	0,5	1,1	0,6
Jordan	0,4	0,2	0,7	0,9	0,5
Turkey	0,1	0,4	0,4	0,5	0,3
Morocco	0,4	0,0	0,1	0,0	0,1
Spain	0,4	0,5	0,4	0,4	0,5
Mediterranean	100,0	100,0	100,0	100,0	100,0

d) Trade balance index (TBI)

Country	1991-95	1996-00	2001-05	2006-10	Averages
Tunisia	99,8	99,5	99,2	99,6	99,5
Iran	100,0	100,0	100,0	100,0	100,0
Israel	100,0	100,0	100,0	99,9	100,0
France	-35,1	-36,5	-39,6	-40,1	-37,8
Egypt	46,6	68,9	71,8	74,3	65,4
Algeria	99,8	100,0	99,8	100,0	99,9
Italy	-95,0	-91,7	-89,1	-68,1	-86,0
Jordan	-72,8	-82,4	-58,5	-43,0	-64,2
Turkey	-61,2	-47,1	-54,8	-61,0	-56,0
Morocco	-50,9	-97,9	-99,5	-99,9	-87,1
Spain	-83,9	-89,3	-89,0	-83,8	-86,5
Mediterranean	32,3	19,2	15,9	25,3	23,2