Status of date palm in Palestine

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SUMMARY - Palestine has a Mediterranean climate which is characterized by long, hot, dry summers and short, cool, rainy winters. The total area of the West Bank is about 6 million donums (1 donum = 0.1 hectare), of which 30% is cultivated, while the total area of the Gaza Strip is 365,000 donums, of which 55% is cultivated. Date palm is cultivated in a small area in the West Bank (about 500 donums in Jericho) and 2,200 donums in Gaza. The total annual production of date palm in those areas is 3,000 tons. This amount is about 10% of the dates consumed in the West Bank and Gaza. Most of the date palms planted in Jericho are grown from seeds and called *Baladi*. These trees produce different fruit sizes and colours with high genetic diversity. Some of these trees are also old (more than 50 years) therefore their ability to produce offshoots has been reduced. New cultivars which have been established in the area ('Medjool', 'Barhee' and 'Deglet Nour') proved to grow well under Jericho conditions. In Gaza, 90% of date trees are of 'Hayani' variety, while the rest 10% are of other varieties. Among the difficulties facing date palm culture in Jericho and Gaza are : (i) the limited amount of water available for agriculture; (ii) fertilization and pollination problems; (iii) the lack of genetic diversity, especially in Gaza; (iv) the lack of good propagation systems; and (v) the lack of comprehensive planning for the agricultural sector in Gaza and Jericho.

Key words: Palestine, date palm, cultivar, genetic diversity.

RESUME *- "Situation du palmier dattier en Palestine". La Palestine possède un climat méditerranéen caractérisé par un été long, chaud et sec, et par un hiver court et doux. La surface totale en Cisjordanie est d'environ six millions de donums dont 30% sont cultivés. Alors que la superficie totale du secteur de Gaza est de 365 000 donums dont 55% sont cultivés. Le palmier dattier est cultivé sur une toute petite superficie en Cisjordanie (environ 500 donums à Jéricho) et sur 2 200 donums à Gaza. La production annuelle totale de dattes dans ces régions est de 3 000 tonnes. Cela représente environ 10% de la quantité consommée en Cisjordanie et à Gaza. La plupart des palmiers dattiers cultivés à Jéricho sont issus de noyaux et appelés "Baladi". Ces arbres donnent des fruits de tailles et couleurs variées, avec une diversité génétique importante. Certains de ces pieds sont de plus âgés (plus de 50 ans), ce qui entraîne une diminution de leur production de rejets. De nouveaux cultivars qui viennent d'être introduits dans la région ('Medjoul', 'Barhee' et 'Deglet Nour') ont montré une bonne adaptation aux conditions de Jéricho. A Gaza 90% des palmiers dattiers sont de la variété 'Hayani', les 10% restants étant constitués d'autres variétés. Les difficultés rencontrées par cette culture à Jéricho et Gaza sont : (i) la quantité d'eau limitée disponible pour l'agriculture ; (ii) les problèmes rencontrés au niveau de la fertilisation et de la pollinisation ; (iii) le manque de diversité génétique en particulier à Gaza ; (iv) le manque de techniques de multiplication efficaces ; et (v) le manque de planification globale pour le secteur agricole à Gaza et à Jéricho.*

Mots-clés *: Palestine, palmier dattier, cultivar, diversité génétique.*

Agriculture played an important role in the Palestinian civilization for centuries. Nowadays agriculture is the main source of income for many Palestinian villages. In addition to olives and citrus trees, date palm has been cultivated in Palestine since

ancient times. A major city in the Gaza Strip was named Deir Al-Balah after date palm farming. According to the World Bank 1993 report (Maa'n Developmental Center, 1994), it is clear that the contribution of date palm products in the total value of agricultural output is relatively small (Table 1). Date palm is cultivated in a small area in the West Bank (about 500 donums in Jericho) and 2,200 donums in Gaza (Table 2). The area has been reduced as many of the male trees were transferred to major cities to be used as ornamentals.

Table 1. Different fruit/crop branches and their relative weight in the total value of agricultural output (modified from Maa'n Developmental Center, 1994)

Branch	1986/87-1989/90
Vegetables	33%
Olives	27%
Citrus	9%
Field crops	7%
Grapes	6%
Bananas	5%
Figs	4%
Other fruits (apples, peach, plum, apricot, palm)	7%

Table 2. Fruit trees area in West Bank and Gaza in Donums (modified from Rural Research Center, 1989-1990)

Species	West Bank	Gaza
Olive	742,917	11,095
Grape	81,413	6,870
Fig	23,073	-
Pomefruit	1,658	-
Stone	115,174	18,426
Banana	5,123	-
Citrus	23,664	60,284
Guava	701	3,845
Date palm	550	2,215

Date cultivation requires high temperature, no rain and low humidity during the time of ripening (Dowson, 1982). The average temperature in Jericho area makes palm plantation possible for dry dates production. However, in Gaza the average temperature is not very high making the plantation of soft date (Rutab) more appropriate (Table 3).

Table 3. Total area, average temperature and relative humidity in Jericho and Gaza

Location	Area (Donum)	Average temperature (°C)		Relative humidity (%)	
		Summer	Winter	Summer	Winter
Jericho	550	24-39	8-18	51	73
Gaza	2,200	24-39	10-15	86	89

Most of the date palms planted in Jericho are grown from seeds and called *Baladi*, or belong to traditional cultivars like 'Zhaidi', 'Hayani', 'Ibrahimi', 'Hijazi', 'Khadari' and 'Zakhloli'. Trees of these cultivars are not uniform regarding flowering maturity and production. Some of these trees are more than 50 years old, therefore their ability for vegetative propagation has been reduced. New cultivars have been recently established in the area including 'Medjool', 'Barhee' and 'Deglet Nour'. The trees are growing well under Jericho conditions.

In Gaza there are about 60,000 date palm trees. The number of trees is also expected to be reduced as a result of the increase in urban areas. On the other hand, date palm plantation in Gaza is distinguished as most of the palm trees are planted at the coastal area. In many cases such plantation is associated with other crops. About 90% of the date palm trees in Gaza are of 'Hayani' cultivar. The remaining are mainly of other unknown genotypes. The water is not available for irrigation. The production is mainly of soft date (Rutab). The production would reach up to 200 kg of Rutab date per tree. Most of the product is usually marketed to the West Bank as well as Jordan. In addition to water limitation, pollination problem is also another difficulty facing date palm producers in Gaza.

In conclusion, date palm sector in Palestine has a great potential. As most dates consumed in Palestine are imported, it is expected that date palm production will increase significantly and its contribution in the agricultural sector will rise tremendously. One of the encouraging factors for this increase, which is expected as a future trend in Gaza and Jericho, is the conversion from citrus farming to palm farming. As it is becoming un-economical to produce citrus which are sensitive to water salinity, the trend will be to plant date palm which is tolerant to salinity and more economically feasible. Needs for this sector include: training of farmers and agricultural engineers in the area of date palm production, introducing new cultivars, investigating difficulties related to propagation and pollination and introducing comprehensive planning and management programmes for the agricultural sector by the Palestinian authorities (Toutain, 1992).

References

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