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# Cultivation of fig (*Ficus carica*), Loquat (*Eriobotrya japonica*), Japanese persimmon (*Diospyros kaki*), Pomegranate (*Punica granatum*) and Barbary fig (*Opuntia ficus-indica*) in Cyprus

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**SUMMARY** - Pomegranate (*Punica granatum*), fig (*Ficus carica*), and loquat (*Eriobotrya japonica*) culture in Cyprus is very ancient and there are commercial plantations based mainly on local varieties. The bulk of production of these crops is for local consumption and the prices obtained are reasonable. On the other hand, the production of persimmon (*Diospyros kaki*) which was introduced later is limited but shows an increasing trend. The Barbary fig (*Opuntia ficus-indica*) still remains to be a wild species.

**Key words:** Cyprus, fig, Barbary fig, Japanese persimmon, loquat, pomegranate.

**RESUME** - A Chypre, la culture du figuier occupe 220 ha en plantations régulières produisant 2 700 t destinées, en grande partie, au marché local. Le grenadier occupe 75 ha produisant 450 t de fruits bien appréciés localement. Les plantations régulières de néflier du Japon s'étendent sur 50 ha et produisent 330 t destinées, en majorité, au marché local. Le figuier de Barbarie existe, uniquement, sous forme d'arbres disséminés. Le kaki reste une nouvelle culture qui s'étend sur les côtes sud-ouest.

**Mots-clés :** Chypre, figuier, grenadier, kaki, néflier du Japon, figuier de Barbarie.

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## Introduction

Cyprus has an important agricultural sector which has always been considered as the backbone of the country's economy. The agricultural output increased from 396 million U.S.\$ in 1985 to 558 million U.S.\$ in 1990. Crop production comprises about 54% and livestock production about 33% of the total agricultural revenue. The most important crops are potatoes, grape vines and citrus, which are also the major export commodities, and cereals. The value of the raw agricultural exports during the same period averaged to 102 million U.S.\$ and accounted for about 23% of the total domestic exports.

Crop production in Cyprus is almost entirely dependent on water availability, and comprehensive efforts have been made to improve the agricultural productivity. These include the introduction of new crop varieties, improved technology and irrigation methods. It is worth mentioning that, as a result of water development projects, the total storage capacity of dams constructed, since the independence, rose from 6 million cubic meters in 1960 to about 300 million, today. These irrigation projects have

allowed the expansion of the traditional horticultural crops and the introduction of new tropical and subtropical crops.

These outlets, together with the increasing demand in industrialized countries and the local market, are leading to a new type of structure in the commercial horticultural sector, characterized by the rising levels of specialization. Consequently, farmers are increasing their production efforts and levels of investment in order to increase the productivity and quality in fruit production.

In seeking additional viable strategies, possibilities of revitalizing agricultural activities in the Mediterranean Basin should be considered. Our aim is to diversify the crop pattern through the introduction of new and well adapted, tropical and subtropical perennial crops, but at the same time, to give more emphasis on underutilized fruit crops.

The Ministry of Agriculture and Natural Resources of the Republic of Cyprus has recognised the importance of growing such crops. Particular emphasis has been placed on both the research and extension aspects in close cooperation with the Ministry of Commerce and Industry in order to ensure the marketing of the produce.

### **Loquat (*Eriobotrya japonica* Lindl.)**

Loquat cultivation in Cyprus occupies 50 ha as regular plantings, reaching a yield of about 330 MT (Table 1). Also there are countless trees scattered in small family orchards all over the island. Almost all of the regular plantings are concentrated on the south-western coasts of Cyprus.

Table 1. Cultivated area and production of pomegranate, fig and loquat in Cyprus (1987-1991)

Crop	1987		1988		1989		1990		1991	
	Area (ha)	Prod. (tons)								
Pomegranate	67	300	70	400	70	450	75	400	75	450
Fig	174	1600	180	1600	200	2200	210	2600	220	2700
Loquat	40	300	40	300	40	250	45	300	50	330

The bulk of production is for local consumption, and the prices obtained are very high because there are not many fruits in the market during its maturation period (April-May). Very limited quantities are exported mainly to the U.K.

The main varieties cultivated are 'Morphou' and 'Karantoki' which are early in maturation with large fruit and excellent quality. The spacing is 6 x 6 m, and trickle irrigation is applied. In all cases, seedlings of loquat are used as the rootstock. Limited cultivation of loquat under plastic is applied mainly in Limassol area.

The research work on loquat is carried out mainly on varietal evaluation and fruit thinning. Six selected local varieties ('Morphou', 'Meneou 1', 'Meneou 2', 'Agroti', 'Late Odou' and 'Goudi') along with five varieties introduced from Japan ('Tanaka', 'Mogi', 'Oobusa', 'Kusunoki' and 'Mizulo') and two from Greece ('Turloti' and 'AGSA') were evaluated at Akhelia station. The 'Morphou' variety gave the highest marketable yield per tree whereas 'Late Odou' the lowest (Table 2). The fruit of 'Meneou', 'Mogi' and 'Morphou' varieties had the highest flesh/pit percentage and 'Oobusa' the lowest. The varieties 'Goudi', 'Meneou', 'Morphou' and 'Karantoki' were early maturing and gave 50% of their production by the end of April, whereas all Japanese varieties were found as late.

Table 2. Yield, maturation and quality characteristics of some important loquat varieties

Variety	Yield (t/ha)	Maturity	Flesh colour	Mean weight (g)	Flesh (%)	Total soluble solids (%)
'Tanaka'	10.1	medium	yellow	33.8	85.1	12.04
'Mogi'	15.9	medium	yellow	24.7	87.6	11.45
'Oobusa'	9.8	medium	yellow	29.6	84.2	11.54
'Kusunoki'	13.7	early	light yellow	24.8	82.3	14.37
'Mizuho'	9.0	medium	yellow	36.6	85.6	12.75
'Turloti'	5.5	medium	white	38.8	86.2	11.79
'AGSA'	9.9	late	yellow	33.0	85.6	13.16
'Morphou'	17.9	early	white	41.7	88.3	11.58
'Meneou 1'	16.4	early	white	35.4	86.7	14.29
'Meneou 2'	10.1	early	white	27.7	87.8	12.82
'Agroti'	12.8	medium	white	30.6	81.6	15.37
'Late Odou'	5.5	late	white	30.8	80.5	13.66
'Goudi'	7.8	early	white	26.7	84.4	14.70

Overbearing reduces fruit size therefore in order to restrict this problem an experiment was initiated in which hand thinning was employed. The treatments were: (i) Removal of the 75% of flower clusters in two stages, (ii) after fruit set and before natural drop, removal of the 75% of fruit clusters in two stages, (iii) removal of the 50% of each flower cluster and removal of 50% of the remaining fruit cluster after fruit set and before natural drop and (iv) unthinned trees. In all treatments where thinning was practiced, the size of the fruit was doubled compared to the fruit size of the unthinned trees.

### Japanese persimmon (*Diospyros kaki*)

Persimmon is relatively a new crop in Cyprus. Commercial plantations started to be established in the last few years mainly in south-western coast of the island, and there is an expansion in the cultivation of this crop in Cyprus.

The varieties cultivated at present are of the astringent type, and the crop is destined mainly for the domestic market. The spacing is 6 x 6 m, and trickle irrigation is applied. The rootstocks used are seedlings of *Diospyros kaki*.

Experimental work is initiated on the evaluation of new varieties. The nonastringent varieties 'Fuyu', 'Jiro', 'California Maru', 'Zenzi-Maru', 'Chocolate', 'Gosho' and 'Suruga' along with the astringent variety 'Hachiya' are being tested under the edaphoclimatic conditions of Cyprus.

### **Pomegranate (*Punica granatum*)**

Pomegranate cultivation in Cyprus occupies 75 ha as in regular plantings, reaching a yield of 450 MT (Table 1). Also there are countless trees scattered in the home yards and small family orchards all over the island.

This fruit is very popular in the local market. There are three local varieties, 'Chocolate', 'Sotirkatica' and 'Ftanoflia' and one foreign variety, 'Wonderful' grown in Cyprus. The best and most important variety is 'Chocolate'.

The bulk of production is for local consumption, and the prices obtained are very good. Very limited quantities are exported, mainly to the U.K.

The main method of propagation is by cuttings and offshoots, and the spacing is 3 x 3 m. Trickle irrigation is applied.

### **Fig tree (*Ficus carica*)**

The cultivation of the fig tree in Cyprus occupies 220 ha as regular plantings reaching a yield of 2 700 MT (Table 1). Also there are countless trees scattered in small family orchards and yards all over the country.

The bulk of production is for local consumption, and the prices obtained are very high especially for the early production and for the varieties with large fruits. Small quantities are exported mainly to the U.K. A considerable amount of fruits of the local variety 'Tyllirisima' are preserved and sold mainly in the local market.

The main varieties cultivated are 'Vasilika', 'Smyrneika', 'Vardika', 'Vazanata', 'Kadota', 'Napolitana negra', 'Progontto Blanco' and 'Gentile Bianco'.

The main method of propagation is by cuttings. The spacing is 7 x 7 m and trickle irrigation is applied.

### **Barbary fig (*Opuntia ficus-indica*)**

There are no commercial plantations of the barbary fig in Cyprus. There are scattered trees all over the island, and fruits are sold in the local market.