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in

Llácer G. (ed.), Aksoy U. (ed.), Mars M. (ed.).
Underutilized fruit crops in the Mediterranean region

Zaragoza : CIHEAM
Cahiers Options Méditerranéennes; n. 13

1995
pages 39-46

The present situation of some underutilized fruit crops in Italy

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SUMMARY - In Italy, the persimmon, prickly pear and fig are important crops mainly in central and southern Italy. The production of prickly pear is estimated to be 60,000 tons and the trend is increasing; however, fig production is 40,000 tons and it is decreasing; persimmon production is 70,000 tons and production is stable. Loquat production is about 6,000 tons and at present it is decreasing. Pomegranate production is low (200 tons) and is not important for the market.

Key words: Italy, fig, loquat, persimmon, prickly pear and pomegranate.

RESUME *- En Italie, le kaki, le figuier et le figuier de Barbarie sont des cultures importantes surtout au centre et au sud du pays. La production de figues de Barbarie est en croissance et est estimée à 60 000 t/an. Celle des kakis montre une certaine stabilité autour de 60 000 t/an. La production de figues, par contre, est décroissante. Elle est actuellement de 40 000 t/an. L'Italie produit, en outre, 6 000 t/an de nèfles du Japon. Cette production est en décroissance. La culture du grenadier n'est pas importante et la production de grenades est de 200 t/an.*

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

Introduction

Among the five fruit crops under investigation, fig, persimmon, prickly pear, loquat, pomegranate, the first three should not be considered underutilized, because they are important fruit crops in Italy.

In fact, the annual production is about 70,000 tons for persimmon, 60,000 tons for prickly pear and 40,000 tons for fig. Loquat and pomegranate are of lower importance. The production values are 6,000 tons for loquat, and only 200 tons for pomegranate.

Fig *(Ficus carica)*

The fig has been present in Italy since ancient times, and it was well known by the Phonecians, Greeks and Romans, and nowadays it is an important fruit crop mainly in some areas of central and southern Italy. The Italian production is calculated to be around 40,000 tons, and is mainly concentrated in the southern part of Italy. The first

place is occupied by Campania region with about 50% of the national total, followed by Sicily (13%), Calabria (12%) and Puglia (8%).

The cultivars present in the Italian germplasm are numerous and among this large genetic material, clonal selection and identification of different cultivars were started twenty years ago. The cultivars and selections that were more interesting are now present in the collection of Caserta field Station of the Istituto Sperimentale per la Frutticoltura of Rome (Table 1) (Grassi, 1988).

Table 1. Fig cultivars present in the Collection of Field Station of Caserta

'ABATE'	'FASCIANISI'
'ADRIANA'	'FICA DI INCALZA'
'ALBINERA'	'FICA LANGA'
'BIANCO'	'FICA NERA'
'BIANCO PRECOCE'	'FICAZZANO ROSSO'
'BLACK MISSION'	'FICHI VERDI'
'BOMBESE'	'FICO BIANCO NOSTRANO'
'BONANZIA'	'FICO GRANATA MARRONE'
'BOULDON'	'FICO NERO LUNGO'
'BRANCACCIO'	'FINO NERO ROSSO DIOLO'
'CACIAPPA'	'FICO SCURO'
'CALLARA'	'FILACCIANO BIANCO'
'CAPRICO'	'FILACCIANO NERO'
'CITRULLARA'	'FIORONE'
'COLA'	'FIORONE BIANCO'
'COLOMBA BIANCA'	'FIORONE BIANCO MELANZANA'
'COLOMBO'	'FIORONE S.IDA'
'COLUMBRA MELONE'	'FIORONE DI S. GIOVANNI'
'CONADRIA'	'FIORONE DI S. MANGO'
'COLUMMU NERO FASANESE'	'FIORONE MARRONE SCURO'
'CU LU PIZZU'	'FIORONE NERO'
'CUORE'	'FIORONE NERO PRECOCE'
'DAUPHINE'	'FIORONE TESTA DI GATTO'
'DELLA GOCCIA'	'FIORONI'
'DEL PORTOGALLO'	'FIORONI BIANCHI'
'DI CATALOGNA'	'FLANDERS'
'DI COPERTINO'	'FORESTIERO'
'DI JURI'	'FRACAZZANO BIANCO'
'DI NATALE'	'FRACAZZANO NERO'
'DI PALERMO'	'GENTILE'
'DI REDO'	'GRECA'
'DI SMIRNE'	'GRISE DE SAINT JEAN'
'DOTTADO'	'GROSSA'
'DOTTADO BIANCO'	'LATTAROLA'
'DOTTADO NERO'	'KING'

Table 1. Fig cultivars present in the Collection of Field Station of Caserta (Cont.)

'E PAGLIARELLO'
'LAMOTA BIANCA'
'LANCIANESE NERA'
'LONGA NERA'
'LONGUE D'AOUT'
'LUMIA'
'LUMINCEDDA'
'MAIATICA BIANCA'
'MAIATICA NERA'
'MARANGIANA'
'MARINEDDA'
'MARSEILLAISE'
'MASLIN 150'
'MASTARDA'
'MATALONI'
'MAURIELLO'
'MAURO DI SPAGNA'
'MELAGRANA'
'MELANZANA'
'MELANZANA BIANCA'
'MELOGRANO'
'MESSINESE'
'MONACA'
'MONSIGNORE'
'MULEGNANA'
'MURAIA'
'MURRA'
'NERRA TARDIVA'
'NERELLA'
'NEURA'
'NEURELLA'
'NIGRA'
'NOCE'
'NOIRE DE NICE'
'PAIARA'
'PALAZZO'
'PALLANA'
'PARADISA'
'PARADISO'
'PIRESCIUTTO'
'PROCESSOTTA'
'RANURISA'
'REALE'
'RESTA DI PUGLIA'
'RICOTTA'
'RIZZELLA'
'ROEDING 3'
'LAMOTA'
'PARADISO BIANCO'
'PASCAROLA'
'PAZZO NERO'
'PELOSA'
'PELUSELLA'
'PERDINGIAUS'
'PETRILLI'
'PETRUCCELLA'
'PETTI'
'PILUSSA'
'PIREFICO (MASCHIO)'
'STANFORD'
'TROIANA'
'TROIANA BIANCA'
'TROIANO MODIFICATO'
'TROIANO PRECOCE'
'TROIANO'
'TARDIVA'
'TARDIVO'
'TRE VOLTE L'ANNO'
'TRIANA'
'TURCA'
'TURCO FIORE'
'TURCO NERO'
'URDESCA BIANCA'
'UTTARA BIANCA'
'UTTARTO'
'VAIARANA'
'VAVERA NERA'
'VERDAL LONGUE'
'VERDOLINA'
'VERNEA'
'VERNILE'
'WHITE GENOA'
'ZECOLA'
'ZICOLELLA'
'ZUCCHINA'

Table 1. Fig cultivars present in the Collection of Field Station of Caserta (Cont.)

'ROEDING 4'
'SAIA'
'SANASA BIANCA'
'S. ANDREA'
'S. BARNABA'
'S. FRANCESCO'
'S. GIOVANNI'
'S. MARIA'
'S. PIETRO'
'S. VITO'
'SESSI'
'SIGNURA'
'SOLLIE PONT'
'SPRINA'

About the orchard management, some aspects are more investigated like the production pruning and the storage of fresh fruits. The harvest of fig in Italy is made in two periods. During June-July, the 'Fioroni' fruits well appreciated for fresh market are harvested, while in August-September the 'Forniti' fruits are harvested, they are partially used for fresh fruit market, but mainly for industrial processing and largely dried.

The most important problem of this species is the short commercial life of the fresh fruits, and for the dried fruits the market competition of the Turkish production, in comparison with the high production costs of the Italian growers. The trend of fig production in Italy shows a slow decrease, and there are not any new intensive plantations. The crop destination is only the domestic market, mainly for fresh consumption and table use. Some trials are now being conducted, mainly for varietal evaluation.

Persimmon *(Diospyros kaki)*

Persimmon is a species recently introduced in Italy. The first tree was planted in Florence in 1871. In Italy this species has an alternant story. Nowadays the Italian production is evaluated around 70,000 tons. The most productive regions are Campania and Emilia-Romagna, which represent together 90% of the national production. The most popular cultivar that is present is the Kaki type (80%) and other cultivars present are: 'Jiro', 'O'Gosho', 'Hana Fuyu'. The most popular rootstock is *Diospyros lotus*.

The production trend is stationary. The crop destination is the domestic market and fresh table use. A new interest has been recently observed because of the introduction of non-astringent cultivars.

At present, large varietal collections are realized in Italy, with old traditional cultivars and new varieties, recently introduced, in different field stations (Table 2). The main objectives of the research are varietal evaluation and adaptability to the Italian environments (Bellini, 1982; Insero and Monastra, 1989).

Table 2. Persimmon cultivars present in the Collection of field station of Caserta.

'AKKOUMANKAKI'	'LAMPADINA'
'BAN GOSHO'	'LYCOPERSICON'
'BRAZZALE'	'MAEKANA JIRO'
'BRUNIQUEL'	'MANDARINO'
'CASTELLANI'	'MERCATELLI'
'COSTATA'	'MIKATANI GOSHO'
'FARMACISTA HONORATI'	'O-GOSHO'
'FENNIO'	'RISPOLI'
'FUGI'	'SAIJO'
'FUKURO GOSHO'	'SHOGATSU'
'FUYU'	'SURUGA'
'GIBOSHI'	'TAMOPAN'
'GUILBECKY'	'THIENE'
'HACHIYA'	'VAINIGLIA'
'HANA FUJU'	'YAMATO GOSHO'
'HYAKUME'	
'IZU'	
'JIOC C 24276'	
'JIRO'	
'KAKI TIPO'	
'KIRAKAKI'	
'KIRATENANSHI'	
'KODA GOSHO'	
'KOUROKUMA'	

Loquat *(Eriobotrya japonica)*

This species was introduced in Italy at the beginning of last century and nowadays is present and cultivated mainly in Sicily where it is an important fruit crop and mainly in the province of Palermo. The Italian production is about 6,000 - 7,000 tons.

Loquat is a typical subtropical fruit species, that suffers mainly from cold and strong winds. The cultivars present in the Italian germplasm are several and most of them are originated as seedlings. On this germplasm, an investigation and clonal selection was realized to single out the most promising and interesting cultivars (Table 3).

These cultivars are now in collection and are in evaluation in different experimental fields at different locations of the country to compare them with the new varieties introduced from abroad. The most widely used orchard management techniques are: training system, rootstock choice and forced culture in polyhouses.

At present, the most popular and used rootstock is 'Franc'. Also the quince, and in particular the selections MA and BA 29, are also utilized (Fatta Del Bosco and Fenech, 1987). Grafting on quince allows to obtain smaller and more compact trees, and permit to carry on the main operations (pruning, harvesting, etc.) from the ground without the use of big and expensive machinery and this reduces production costs (Insero and Monastra, 1985; Insero *et al.*, 1990).

Table 3. Loquat cultivars in experiments

Cultivar	Research units			
	ISF Roma	ICA Palermo	Azienda Pantanello	CIF Cagliari Metaponto
'Algerie (Argelino)'	*	*	*	*
'Early Red'	*			
'Golden Nugget'	*	*		
'Grosso Lungo di Palermo'	*	*	*	
'Grosso tondo'	*	*		
'Magdal'	*	*		
'Marchetto'	*	*	*	
'Marceno'	*			
'Nasuta'	*			
'Nespola di Ferdinando'	*	*		
'Nespola di Francesco'	*	*		
'Nespola Rossa'	*	*	*	*
'Nespole di Palermo'	*			
'Nespolo di Palermo'	*	*		
'Nespolone'	*			
'Nespolone di Palermo'	*	*		
'Nespolone di Trabia'	*	*		
'Peluche'	*	*		
'Precoce di Palermo'	*	*	*	
'Precoce di Trabia'	*	*		
'Sanfilippara'	*	*		
'Sciorta di Don Pietro'	*	*	*	
'Tanaka'	*	*	*	*
'Vaniglia 1'	*	*		
'Vaniglia 4'	*			
'Vaniglia'	*	*		
'Virticchiara'	*			

The forced culture in polyhouses is a technique that permits to anticipate the maturity and to present the fruit on the market at the end of March or first days of April which is a very good moment from an economic viewpoint.

Crop production follows a stationary trend also because of the strong competition of the Spanish production, very competitive in all Europe and Italy. The crop

destination is mainly the domestic market and fresh table use. The main researches carried out concerning varietal evaluation, are supported by the Italian Department of Agriculture (Insero *et al.*, 1993).

Pomegranate *(Punica granatum)*

The pomegranate has been present in Italy since ancient time and is actually present as scattered trees, while very few are in specialized plantings (Scortichini, 1990). The Italian production is estimated around 200 tons and mainly present in Sardinia and Sicily. The cultivars present are mostly of local origin, and some of them are very interesting and promising.

The crop production trend is stable, there are no new plantations and there is no research on this species, at present.

Prickly pear *(Opuntia ficus-indica)*

The prickly pear culture is present mainly in Sicily, and it is present as an important fruit crop, mainly in the provinces of Catania, Agrigento, Enna and Caltanissetta.

The most popular varieties present in Sicily, are the red, yellow and white (Barbera *et al.*, 1993; Barbera and Inglese, 1993). The annual Italian production is estimated about 60,000 tons. The crop destination is for fresh table consumption, both for domestic and export market.

In the past, the prickly pear culture was very primitive; however, at present it is a specialized fruit crop with good orchard management techniques. The two practices which are mainly used are the irrigation and the "scozzolatura". The irrigation is very important, when the rainfall is not present in summer, to promote fruit quality. The "scozzolatura" is a particular technique to obtain a second production in October - November with a larger size and higher quality fruit.

The actual trend of production is an increase, of about 30%, mainly due to the new young plantings which are not yet in full production.

The research carried out concerning varietal evaluation, orchard management techniques, storability and processing, is supported by the Italian Department of Agriculture.

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