EXOTIC HORTICULTURAL PRODUCTS FRESH AND PROCESSED TRADED IN IASI

PRODUSE HORTICOLE EXOTICE PROASPETE ŞI PRELUCRATE COMERCIALIZATE ÎN MUNICIPIUL IAŞI

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Abstract. *The offer of fresh fruits and vegetables (in less number) and processed under different forms (stews, juices, nectars, concentrates, sterilized in water or pickle) has been more and more important since 2005 in the important supermarkets from town Iasi. After the accession to the EU, these products become more accessible and diverse as assortment.*

Rezumat. *Oferta de fructe şi de legume (în număr mai mic) proaspete şi procesate sub diferite forme (compoturi, sucuri, nectaruri, concentrate, sterilizate în apă sau saramură etc) se concretizează tot mai importantă încă din anul 2005, la supermarketurile mai importante din raza municipiului Iaşi. După aderarea la UE, aceste produse devin mai accesibile şi mai diverse ca sortiment.*

The presence of the tropical fruits mentioned since old times in the Balkan space and the Romanian one is attested by the oldest documents. It may be understood due to the connections with the south and oriental countries **that were close to us** by origin, the common customs, the numerous intermediary commercial ways, the integrating economical and political sphere that was roman then Byzantine and finally ottoman and Phanariot. The Armenian and Greek tradesmen, the Walachian caravan men, the townsmen of all statuses and origins, the boyars, the great tradesmen or the high clergy were the keepers of a common civilization with unifying features between Orient and Occident, that also had a mutual daily existence in culture, music, clothes and in thinking and food habits.

From the 13th century, the dry fruits called "*fruits"* (**from the imported term "*bacalii*", traded by *bakkâlii* from Orient and Balkans;** from the Arabian word ***baqqal***, comes ***bakkâl*** in Turkish), were sold to be consumed during the fast periods. **Figs, dates, apricots, raisins,** and also plums, pears or other dry fruits were very looked for export items. The Romanian word "***băcănie***", store of foodstuffs has its origin in this term. The toponym Băcani is attested in Ţara Românească since 1493, and the onomastic name Băcanul, since 1583. They mention about "Prăvălii de băcănie" in a document from the archives of the monastery Sf. Apostoli (Ţara Românească, 1614).

A proof of the flowering trade deployed from eat to west is also the assortment of imported fruits that was sold on the market in Cluj in the 16th -17th centuries. A register of the municipality of Cluj registered for almost six decades (1578-1637) the variety, frequency and price of the fruits and vegetables that were

consumed by the foreign guests. **By frequency of appearance** they mention the following products: 16 types of vegetables (onion, radishes, parsley, cabbage, garlic, peas, horseradish, lettuce, red onion, beet, tarragon, melons, water melons, common sage, green garlic, dill), 16 types of fruits (apples, pears, plums, gooseberries, black currants, **almonds**, peanuts, cherries, grapes, peaches, nuts, walnuts, sour cherries, crab apples, wild strawberries), **2 species of imported fruits (*lemons and oranges*),** as well as 11 types of processed products (brine cabbage, vinegar, dry plums, ***raisins***, brandy, pickles, must of grapes, plum wine, aqua vitae, dry pears).

In the 17th century, the traveler ***Paul of Alep*** **(1653)** wrote in his notes: "Here it is the list of gifts given to the Voivode (n.b. Vasile Lupu, Moldavia): two jars of jam, a box of candied fruits, almonds, raisins, dates, apricots, salted and unsalted pistachio nuts."

In the 19th century, olives had on the market in Iasi a price three times bigger than quinces and a lemon cost as much as three quarters of a kilo of pears.

Table 1

Official price of some horticultural products on the markets from Iaşi, in **October 1832**

Product	UM	LV(lei- old currency)	F(farthings)
Cabbage	a hundred	4	-
Nuts	a thousand	2	-
Dry onion	¾ kg	-	16
Beans	¾ kg	-	14
Carrots	¾ kg	-	10
Quinces	¾ kg	1	20
Grapes (fruit)	¾ kg	-	32
Pears	¾ kg	-	24
Apples	¾ kg	-	20
Dry plums	¾ kg	-	16
Plum brandy	10 l	36	-
Marc brandy	10 l	40	-
Fruit brandy	10 l	44	-
Lemons	**pc**	**-**	**12**
Lemon juice	**¾ kg**	**2**	**20**
Olives	**¾ kg**	**3**	**-**
Saffron (ounce)	**ounce**	**2**	**20**

The exotic horticultural products fall into three large groups according to their geographic origin: **horticultural products from the temperate zone** (known), **subtropical and tropical**. We must mention that the majority of the subtropical and tropical products from importation are fruits, the sweet potatoes being the only vegetables (tropical) from this assortment. The subtropical and tropical vegetables are less known. This happens due to the fact that they have a more reduced commercial interest and their perishability.

Among the subtropical frits, the citric fruits are the most known ones. Their nutritional and dietary importance is remarkable.

Lemons- (Citrus limon**,** C.limonia) contain 87% water, their juice contains 17-27% sugars, citric acidity 0,75-1,2 g%, vitamin C 30-50 mg%.

Oranges (C. sinensis) have a juice with 12% sugars at most, citric acidity 1,3-1,5%, vitamin C 50 mg%, the skin has 0,6-1% volatile oil, the albedo (white and thin mesocarp) has 2% proteins, 6% cellulose, 7% reducing sugars and 2% non-reducing ones, 1,3% pectins, 1,2% ash, 0,35% citric acid, 0,15% hesperidins and 0,3% hydro-soluble flavones. They are the raw material for juices, concentrates, crystallized fruits, marmalades (bitter oranges), jams, essences etc.

Grapefruit (C. paradisi) has 90% water, 6% sugars, 1,3% fibers, about 40 mg% vitamin C, 0,2% minerals (potassium, calcium)

Tangerines (**C. reticulata**,) are of two types (mandarins, tangerines), besides **C. unshiu** (clementine and satsuma). They are the raw material for juices, volatile oils, syrup etc.

The citric fruits less consumed are **pomelos** (C. grandis) considered to be a kind of grapefruit, from which they make juice, concentrates, essences etc. **Limes (**C. aurantifolia-green lemons -sour lime) have a juice containing 10-15% sugars and 1-1,5% citric acidity, being processed like oranges though much more difficult.

Olives (Olea europaea subspecia sativa) have their fruit of 2,2-3,7-7,6g and the stone of 0,5-1,2g. The small ones contain 33% oil and the medium-big ones contain 30-28% oil. There are table olives that are pickled green or ripe and olives for oil extraction. The virgin oil is extracted by cold compressing or by heating and the sansa oil is extracted from the remains of the press.

Fresh **figs (Ficus carica)** have about 13,5% sugars, acidity 0,4%, protides about 2%, cellulose almost 3%, minerals 0,8%; they are industrialized in syrup, they are crystallized, turned into jams and are especially dehydrated.

Kiwi (Actinidia sinensis), originating from China, has 75-83% pulp, 10-15% skin and 7-10% seeds – the juice contains 81-87% water, 9-14% reducing sugars and 11-17% total ones, 1,4-2% acidity, 0,5% pectins, 0,4/ fibers, 0,6% minerals. In New Zeeland they produce syrups, frozen pulp and purée and the so-called kiwi wine with 8,5% vol. alcohol.

Pistachio (Pistacia vera) the fruit is a drupe with skin and core. The core has two flashy greenish perfumed cotyledons with 40-45% starch and 30-35% oil very sensitive to oxidation. It is dehydrated, salted and fried after decortication.

Fizalis (Physalis peruviana) is afruit related to tomatoes rich in vitamin C and carotene.

Carobs (Ceratonia siliqua) from the fam. Fabacee (leguminosae) have a pod 10-20 cm long and 2 cm wide, with 5-10 seeds, the pod pulp is very sweet), and the seeds contain a jelly. From carobs they make cacao substitutes (Karub, Karob) and alcoholic macerates for the preparation of bonificators in the recipes of fine distilled drinks.

Pomegranates (Punica granatum), fizalis (Physalis peruviana), **kumquats** (**Fortunella**- ovoid citric fruits) and **limequats** (**hybrids Citrus × Fortunella**) were also present in the offer from Iasi.

Tropical fruits:

Bananas (Musa sapientum). They consider fruits only the very sweet bananas that have 22-25 % glucides, 1-1,8% protides, 0,7- 1,5 % minerals, fibers 5,2 %.
The others called *plantains* (cooking bananas) are used as vegetables in the originating countries.

Avocado (Perseea gratisima) has about 1400 kcal/Kg, being more caloric than potato. It has 76% water, about 2% protides, under 1% sugars, over 14% lipids from which 9% monounsaturated and 2% polyunsaturated, minerals over 0,5% (potassium, phosphor, magnesium, calcium, iron), beta carotene 0,2 mg%, vitamin C 11 mg%, other vitamins E 2 mg%, PP has 2 mg%, group B in a higher proportion than other products.

Pineapple (Ananas comosus), originating from Paraguay, spread in the entire Latin America even since the 15th century, and subsequently in all the tropical counties with a humid climate. The spherical long fruit may reach to 3-4 kg (normal 1,5-2 kg) it is consumed fresh or processed (pieces in syrup, juice, concentrated juice). The natural juice has between 13-17 ^{0}Bx, 115-155 g sugar/ liter and 1,0-1,3 g% citric acidity.

Coconuts (Cocos nucifera) have a coconut milk 95% water, 0,7% protides, 4% sugars and 0,4% minerals. The fresh core has 46-50% water 36-39% lipids, 3-4% protides, 3-5% glucides, 2-4% fibers, 4, 3% minerals. From the oily core they extract the copra oil. The coconut milk may be preserved differently but it is less demanded.

Dates (Phoenix dactylifera) are very non-homogenous in contents according to their origin (Sifri - Saudi are the sweetest followed by the Tunisian ones -Deglet-Nour, and the least sweet are Miskani - Saudi and Rhars - Tunisian). They have a humidity of 11-55%, sugars between 42-82%, acidity 0,3-1%, fibers 15-17% (there are dates with only 5% fibers, such as Deglet Nour in Tunisia), protides 1,5-2%, minerals 1,2-2%.

Mango (Mangifera indica) has 80% water, 13-17% reducing sugars and 18-19% total ones, 0,5-0,8% acidity, fibers 1-5%, minerals 0,5%. The fresh fruit has 78% pulp and contains ascorbic acid 40-50 mg% and carotene over 3 mg%. It is processed as stew, crystallized fruits, dehydrated fruits, jams, syrup, and preserved pulps.

Papaya (Carica papaya) the fruit has 70-75% pulp, 15% skin and seeds, a humidity of 86-89%, 7-10% sugars, 2% fibers, 0,6% acidity, 0,6% proteins, 0,6% minerals. From papaya they make purées and pulps and from the latex of the fruits vegetable pepsin, a natural enzyme holoproteidical and protheolitical.

Maracuja (Passiflora edulis) (named after the shape of the flower of the passion fruit in the religious meaning)**,** has a humidity of 81%, sugars 10%, starch 1%, acidity 3-4%, minerals 0,5%. From the fruits they make juices and concentrates.

Opuntia (Opuntia ficus indica) named also Barbaria figs (in France) or Nopal (in Mexico). The pulp contains 83% humidity, 13% sugars, 2% pectins, 0,5% acidity, 1,2% protides. It is a raw material for marmalades.

Litchi (Litchi sinensis) has 81-87% humidity, 9-14% reducing sugars and 11-17% total ones, 1,4-2% acidity, 0,5% pectins, 0,4% fibers, 1% protides 0,6% minerals , vit. C only 4 mg%. It is a raw material for stews and juices.

Carambola (Averrhoa carambola), called the star fruit, is succulent, sweet – acid – it is consumed especially in fresh state (unpreserved).

Kiwano (Cucumis metuliferus), **rambutans (Nephelium lappaceum)** and **mangosteens (Garcinia mangostana)** were present in the commercial offer of some supermarkets from Iaşi, to test the customers' interest for them.

The sweet potato (Ipomaea batatas) has 72% humidity, 1,2% proteins, 25% glucides d.c. starch 12% and 11% soluble glucides, 3% fibers, minerals 0,4% (potassium, calcium, phosphor, magnesium), 25 mg% vitamin C and beta-carotene 4 mg%.

Table 2

Offer of subtropical and tropical fruits* Supermarket Billa Iaşi 07 .10.06

	Product	Assortment	Type	UM	Quant	Price	Origin
1	Lemons	subtropical	pro	Kg	1	2,99	Turkey
2	Oranges	subtropical	pro	Kg	1	5,49	Greece
3	Oranges	subtropical	pro	Kg	1	5,99	RSA
4	Tangerines	subtropical	pro	Kg	1	4,99	Turkey
5	Lime	subtropical	pro	pc	1	1,79	South Africa
6	Kiwi	subtropical	pro	Kg	1	11,99	Chile
7	Bananas	tropical	pro	Kg	1	2,99	Ecuador
8	Coconuts	tropical	pro	pc	1	2,49	Ivory Coast
9	Pineapple	tropical	pro	pc	1	8,99	Costa Rica
10	Mango	tropical	pro	pc	1	6,90	Brazil
11	Avocado	tropical	pro	pc	1	5,99	Israel
12	Figs	subtropical	dry	g	250	4,99	Turkey
13	Dates	subtropical	dry	g	200	2,59	Iran
14	Dates	subtropical	dry	g	220	1,99	Iran (IRI)
15	Pineapple stew	tropical	ind	g	565	1,59	Thailand
16	Pineapple stew	tropical	ind	g	565	2,39	Thailand
17	Pineapple stew	tropical	ind	g	565	2,45	Indonesia
18	Pineapple stew	tropical	ind	g	500	2,49	Thailand
19	Pineapple stew	tropical	ind	g	565	2,69	Thailand
20	Pineapple stew	tropical	ind	g	565	2,79	Thailand
21	Tangerine stew	subtropical	ind	g	314	1,99	Thailand
	Product	**Assortment**	**Type**	**UM**	**Quant**	**Price**	**Origin**
	Jonathan apples	temperate clim	pro	Kg	1	1,69	Romania
	Cucumbers	temperate clim	pro	Kg	1	1,99	Romania
	Green peppers	temperate clim	pro	Kg	1	2,59	Romania
	Potatoes	temperate clim	pro	Kg	1	1,09	Romania

*we did not include olives or the juices-nectars from tropical-subtropical fruits

Table 3

Offer of subtropical and tropical fruits cash &carry Selgros Iaşi 11.04.2007

Product	Assortment	Packing	Quantity	Price RON	Origin country
Stew					
Lyches	tropical	Box	580 g	5,30	Germany
Pineapple pieces	tropical	Box	420-640 g	1,6-6,4	Thailand, Germany, England, Slovenia, Czech republic
Papaya	tropical	Box	440-580 g	2,2-5,8	Germany
Kiwi	subtropical	Box			Germany
Tangerines	subtropical	Box			Germany
Dehydrated					
Figs	subtropical	bags	200-400 g	2,2-7,2	Turkey
Dates	tropical	bags			
Pineapple discs	tropical	casserole	500 g		
Fresh fruits					
Coconut	tropical	wholesale		16,5	South Africa
Bananas	tropical	wholesale		4,15	
Papaya	tropical	case	5 kg		Brazil
Cactus fruits	tropical	case	5 kg		South Africa
Hysalis		casserole	200 g	5,34	Columbia
Limaequats	tropical	casserole	150-200 g		Israel/Peru
Kumquats	tropical	casserole	150-200 g		Israel
Passion fruit	tropical	casserole	150-200 g		Columbia, Zimbabwe, South Africa
Pineapple	tropical	Bags with one fruit	about 800 g	5,43	Costa Rica
Avocado	tropical	Casserole with 4 fruits	about 250 g	2,61	Israel
Lemons	subtropical	case	1 kg	2,2	Turkey
Oranges	subtropical	Case, plastic bags	10 kg, 3 kg	2,96	Greece
Pomelo	subtropical	Bags with one fruit	1 pc	9,5	Israel, China
Grapefruit	subtropical	case	kg	3,2	Turkey
Clementine	subtropical	case	10 kg		Spain, Italy
Kiwi	subtropical	case	1 kg	4,75	Italy
Temperate fruits					
Strawberry stew	temperate	Box	400	58	Germany
Dehydrated apricots		Bags, casseroles	200-400 g	30-70	Romania
Dehydrated plums					

Table 4

World production of fruits with the 25 most important species (FAO data 2005)

Total Fruits	Temperate Zone	. tons	Place	Subtropical	Mil tons	Place	Tropical	Mil. tons	Place
Place 1-4	**Grapes**	65,6	**2**	**Oranges**	59,7	**3**	**Bananas**		**1**
	Apples	59,4	**4**						
257,2 (51%)		125,0	24,8 %		59,7	11,8 %		72,5	14,4 %
	Pears	19,5	**6**	**Olives**	14,4	**9**	**Mango**	28,2	**5**
	Peaches	15,8	**8**	**Lemons**	12,7	**10**	**Pineapple**	16,8	**7**
	Plums	9,5	**11**	**Dates**	6,9	**12**	**Papaya**	6,8	**13**
	Strawberries	3,6	**15**	**Grape fruit**	3,7	**14**	**Avocado**	3,2	**16**
	Apricots	2,8	**17**	**Kiwi**	1,1	**24**	**Persimmon**	2,6	**18**
	Cherries	1,8	**19**	**Figs**	1,1	**25**	**Anacardium**	1,7	**20**
	Almonds	1,6	**21**						
	Nuts	1,5	**22**						
	Sour cherries	1,2	**23**						
Place 5-25 156,5 (31%)		57,3	11,3 %		39,9	7,9 %		59,3	11,7 %
Place 1-25 413,7 (82%)		182,3	36,1 %		99,6	19,7 %		131,8	26,1 %
Unimportant fruits 91,3 (18%)	Raspberries, quinces, black currants etc. Temperate fruits unspecified (minor)			Pistachio, subtropical fruits unspecified (minor)			Tropical fruits unspecified (minor)		
505,0 (100%)									

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