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Close-up Citrus

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**Peruvian
grape**

**Showing
potential**

A report by
Eric Imbert

Citrus

Citrus

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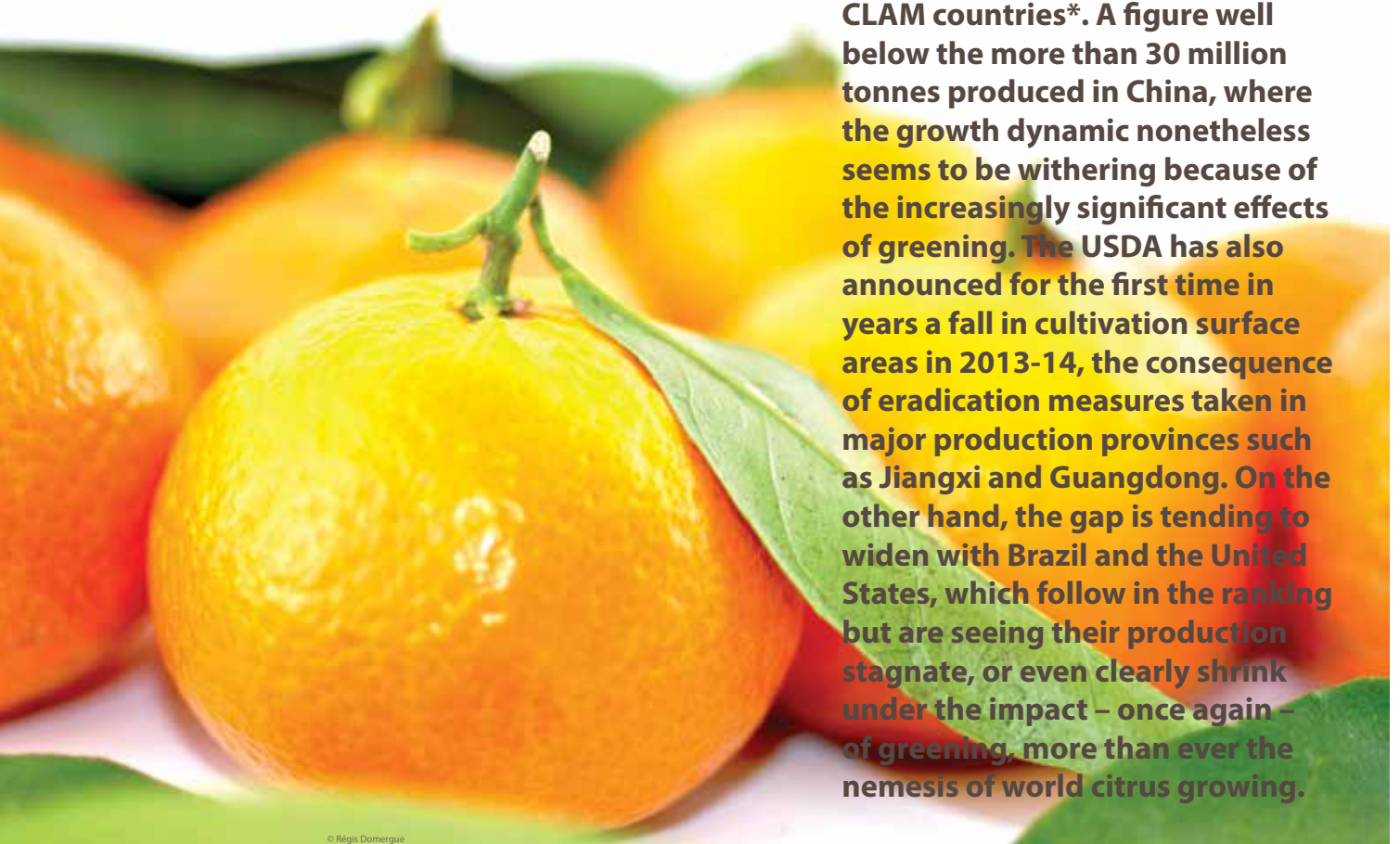




Mediterranean citruses 2014-15 harvest forecasts

Big production figures, but no record

The Mediterranean will undoubtedly remain the world's number two citrus production area in 2014-15. The harvest, set to register a small cyclical fall, should be slightly in excess of 23 million tonnes, of which just over 20.6 million tonnes from the CLAM countries*. A figure well below the more than 30 million tonnes produced in China, where the growth dynamic nonetheless seems to be withering because of the increasingly significant effects of greening. The USDA has also announced for the first time in years a fall in cultivation surface areas in 2013-14, the consequence of eradication measures taken in major production provinces such as Jiangxi and Guangdong. On the other hand, the gap is tending to widen with Brazil and the United States, which follow in the ranking but are seeing their production stagnate, or even clearly shrink under the impact – once again – of greening, more than ever the nemesis of world citrus growing.



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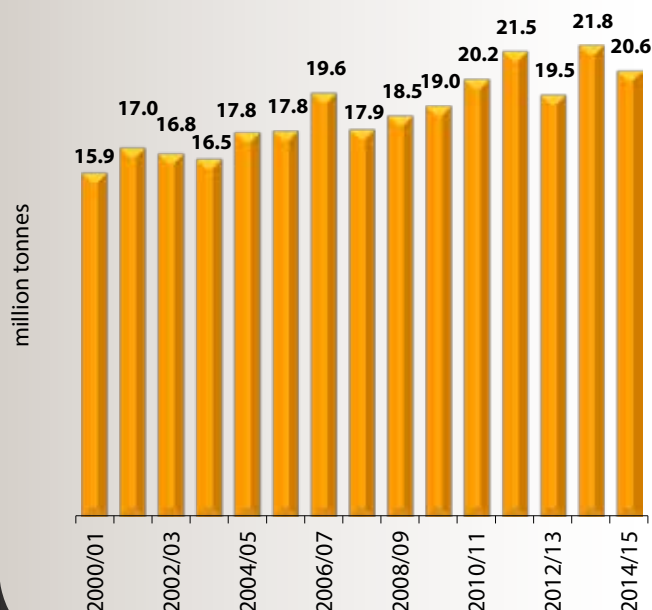
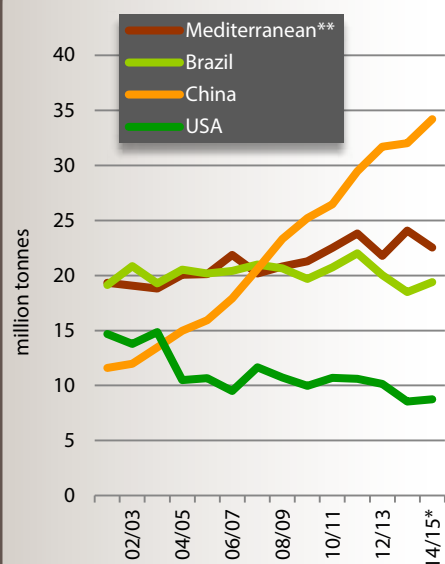
*Algeria, Cyprus, Egypt, Spain, France, Gaza, Greece, Israel, Italy, Morocco, Tunisia, Turkey

Citrus – CLAM countries production forecast

000 tonnes	2014-15	2013-14	2014-15 comparison with	
			2013-14	average of the 4 last years
Spain	6 862	7 171	- 4 %	- 2 %
Egypt	3 719	3 719	0 %	+ 4 %
Italy	2 499	3 250	- 23 %	- 21 %
Turkey	3 349	3 200	+ 5 %	+ 12 %
Morocco	1 907	2 203	- 13 %	+ 5 %
Greece	1 059	1 180	- 10 %	- 5 %
Israel	597	496	+ 20 %	+ 17 %
Tunisia	308	295	+ 4 %	+ 4 %
Cyprus	265	235	+ 13 %	+ 13 %
France	30	24	+ 23 %	+ 18 %
Total	20 595	21 773	- 5 %	- 1 %

Mediterranean citrus growing

- Production approximately 22.8 million tonnes, of which 20.6 million tonnes is in CLAM countries
- 18 % of world production estimated at 121 million tonnes
- World number 2 production zone after China (23 million tonnes)

Citrus - CLAM countries production**Citrus - Production of main producer countries**

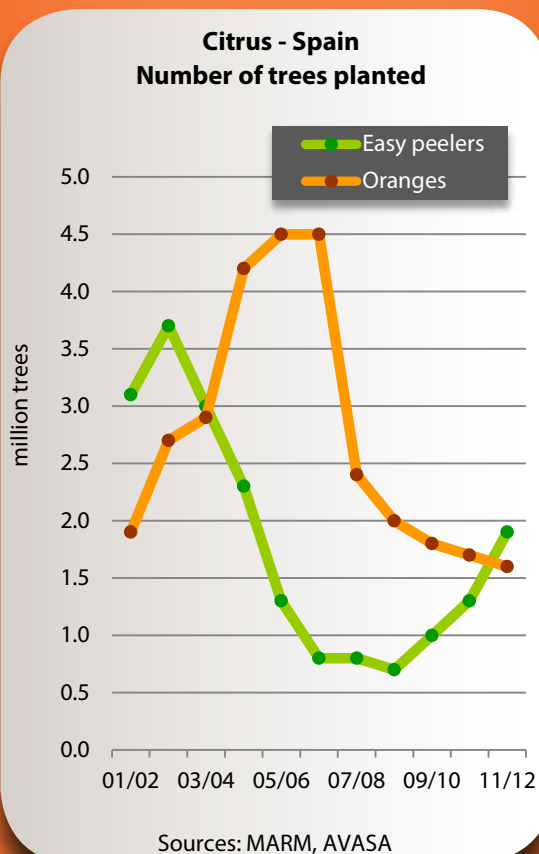
*estimate / ** CLAM countries + 2.3 million tonnes from other Mediterranean countries
Sources: FAO, USDA, CLAM

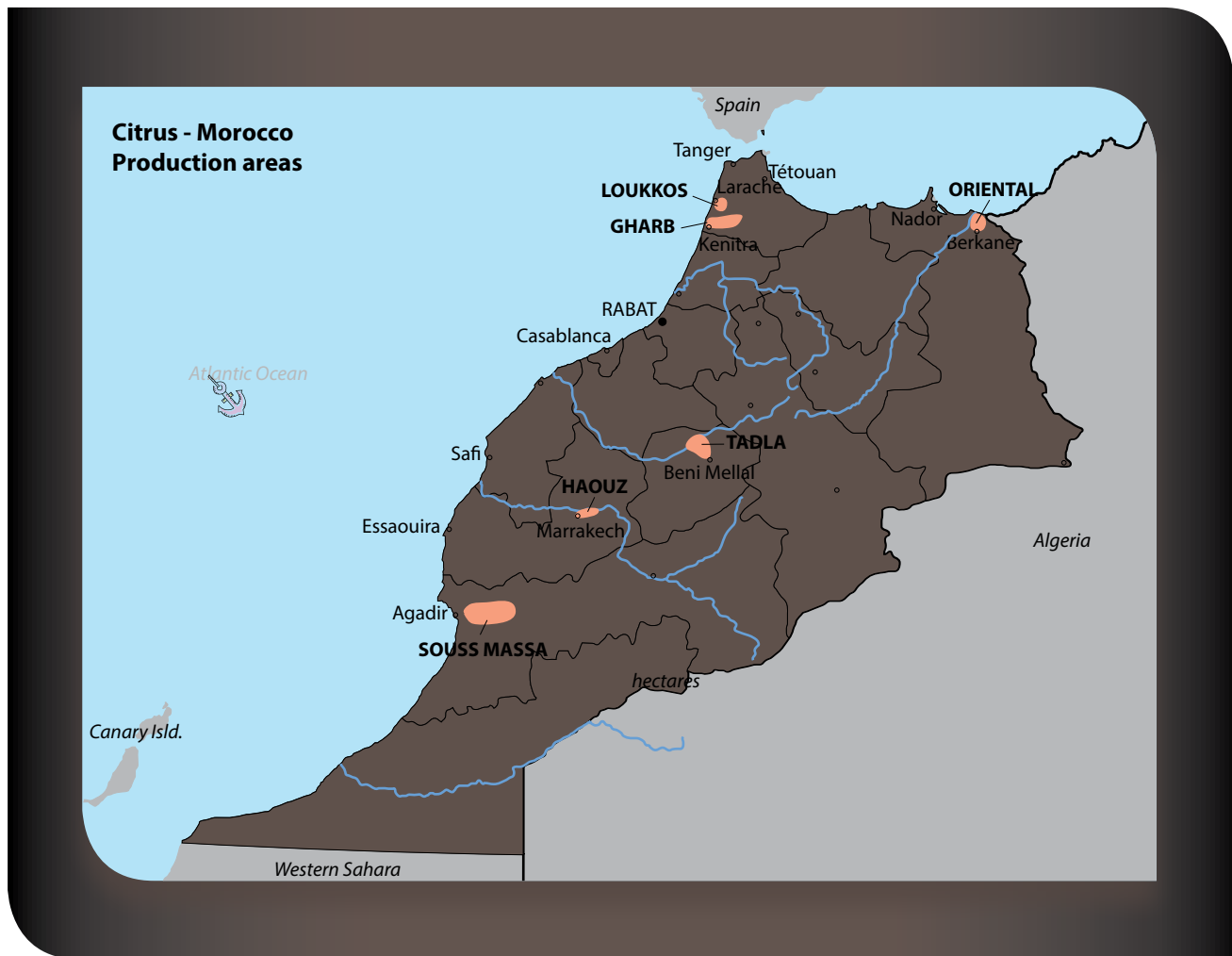
Spain

Another big season for a source near maturity

The region's main producer is again set for a big season. Estimated at approximately 6.5 million tonnes, the harvest is close to last season's, and is among the three or four biggest ever recorded. This level, which has seen no considerable changes for the past three or four seasons, also seems to confirm that the Spanish citrus growing industry is approaching maturity. According to the latest data available, sales of certified plants climbed slightly to 3.9 million plants in 2011-12, though they remained in the bottom bracket, and a very long way from the 6.5 to 7.0 million seen in 2006-07. Orange tree sales have continued to wane, with production set nonetheless to continue its upward trend for a few years

because of the extensive late Navel planting carried out until 2005-06. This lack of interest from producers for the orange reflects the chronic weakness in the profitability of this citrus family, as the poor results of last season showed again. The slight upturn by easy peelers remains very hesitant. The mid-season slot remains saturated. Uprooting of Fortuna, overly sensitive to *alternaria*, is partly offsetting Nadorcott planting, whose production potential is now approximately 150 000 t. Producers remain cautious with respect to Tango, given the very high licence price and the lack of clarity on the outcome of the dispute on the parentage of this variety. Finally, they still lack at least one convincing variety on the buoyant spring slot, with no triploids really standing out to date. Will solutions emerge? Hard to say, but in any case there has been a real varietal tidal wave breaking since 2013, with more than 150 varieties available for producers, i.e. nearly 100 more than in 2011 and more than three times more than in the early 2000s.





Morocco

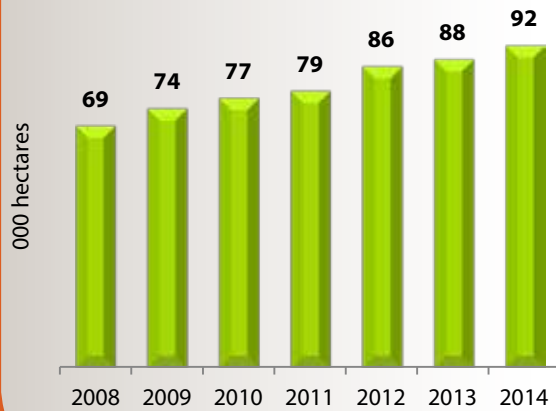
The lessons of a difficult 2013-14 season

It is not the small cyclical downturn of 10 % in production which should be underlined, because of unfavourable weather in Souss. It is rather the size of the harvest, which will be nearly 2.0 million tonnes for the second time in its history. The effects of the "Maroc Vert" plan are clearly in place. 37 000 ha have been planted since 2007-08, i.e. more than 5 000 ha per year on average! The easy peelers cultivation area has literally exploded, growing by approximately 27 000 ha, due to large-scale planting of clementines (the traditional Fine, but also earlier cultivars such as Nules or Sidi Aïssa, or later cultivars such as Nour) and Afourer (cultivation area currently 5 000 ha, i.e. an export potential of approximately 160 000 t). In parallel, yields have risen considerably, thanks to the spread of use of certified plants, and to better equipped orchards. Localised irrigation was set up over 61 000 ha in 2012-13,

as opposed to 40 000 ha before the start of the plan in 2006-07. The equipment rate is even approaching 80 % in plantations of more than 50 ha.

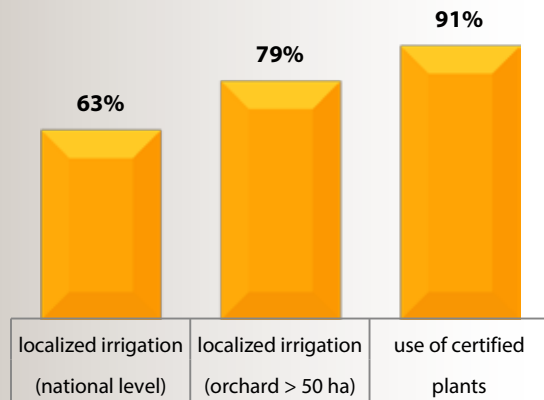
The Moroccan industry was also quick to draw the lessons of a 2013-14 season which was a record in terms of volume, though so catastrophic in terms of price that certain producers are now close to bankruptcy, with ASPAM needing to intervene for *Crédit Agricole* to agree to ease the lending conditions. A new structure, the Citrus Coordination Committee, has been set up to ensure "a quality turnaround" and export regulation. This body holds genuine inspection power, upheld by EACCE, which manages it and monitors it, along with the producers (ASPAM) and packers. Quality standards have been established (minimum juice content 40 %, minimum Brix 10°, minimum maturity index 8 and degreening limited to 5 days), and the export calendar has been put back in step with the physiological state of the fruits, by setting the official start date of the season as 13 October instead of 13 September. Furthermore, a market monitoring and weekly volume scheduling system has been set up.

Citrus - Morocco
Productive planted area



Source: MAPM 2013

Citrus - Morocco
Technical indicators



Source: MAPM 2013

Easy peelers – Morocco
Evolution of cultivation area

hectares	2006	2013
Total	34 140	60 457
Clementines	30 287	53 475
Fine	17 381	30 961
Nules	3 403	8 372
Nour	5 678	7 596
Sidi Aissa	3 021	5 197
Marisol	803	1 349
Others	3 853	6 982
Nadorcott	722	4 641
Nova	652	730
Ortanique	569	513
Others	1 910	1 098

Source: MAPM 2013

Orange – Morocco
Evolution of cultivation area

hectares	2006	2013
Total	41 729	52 694
Navel	16 025	19 777
Maroc Late	21 480	23 922
Blood	2 506	3 250
Salustiana	1 226	1 089
Others	492	4 656

Source: MAPM 2013

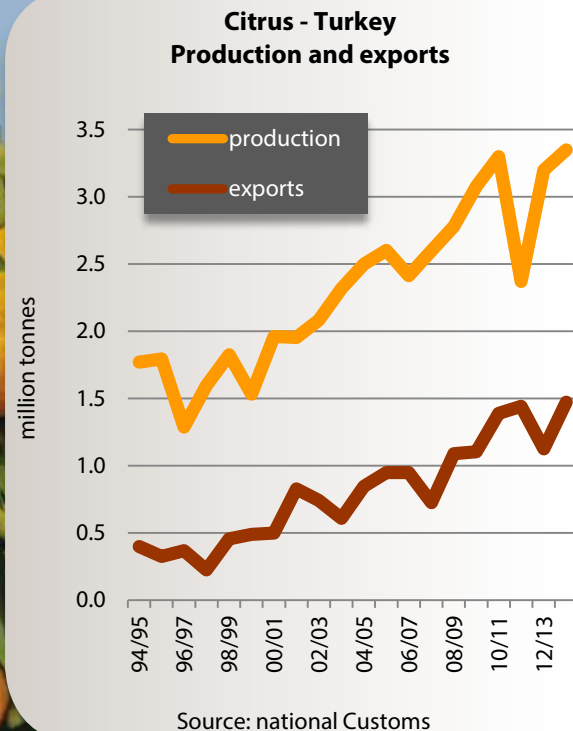


Turkey

From record to record

Turkey keeps on stringing the records together. For the first time in its history, production should exceed 3.3 million tonnes in 2014-15. In the space of ten years, the harvest has increased by more than one million tonnes, enabling Turkey to hoist itself up to 3rd place in the ranking of the biggest Mediterranean producer countries, behind Spain and Egypt. Today, the growth is primarily due to the very rapid expansion of the easy peelers cultivation area, the varietal group now representing one third of the total harvest, as opposed to 20 % at the end of the last decade. And this expansion has not yet finished: cultivars mainly intended for East European markets, such as Okitsus or Satsumas (Mia Wase or later cultivars such as Bela and Dobashi Beni) are continuing to see

considerable growth. However, other varieties aimed at establishing a broader footing on the Community market are also expanding (W. Murcott and Tango, with 500 ha already planted). The Citrus Promotion Group is investing in a strategic avenue, through three programmes with local research centres (Alata, Batem and Çukurova University). This approach, which is aimed above all at restoring added value, is all the more important since the developments on the Russian market are increasingly pressurising Russian exporters. With the Russian giants disappearing from the fruit import scene, the big supermarkets are increasingly sourcing directly, stipulating increasingly tough commercial conditions, the forerunners of a trend very familiar in Europe around thirty years ago. The historical weakness of the rouble and the tragic crisis spreading across Iraq, which had become a big market for Turkey in recent years, are doing nothing to help.



Italy

Toward large-scale restructuring?

"From Charybde to Scylla" is a local saying which could best sum up the current situation of Italian citrus growing. After the umpteenth calamitous season in terms of prices, 2014-15 production should register a major fall of more than 20 % from the previous season, and reach its lowest level since the late 1990s! This situation is not due solely to the cyclical climatic problems encountered in 2014. The structural lack of competitiveness of Italian citrus growing remains evident, as is illustrated by its trade balance, more negative every season for citrus, despite the scale of its production (third in the Mediterranean by volume). Production structure remains highly fragmented, although undeniable progress has been made.

According to a 2010 survey, farms of less than 3 ha still represented more than one quarter of total surface areas. Yet above all, the spread of severe strains of tristeza is ravaging in particular the east of Sicily, on the great plain of Catania renowned for its blood oranges. While the situation at present seems increasingly gloomy, there is nonetheless some light at the end of the tunnel. The fight against the disease is being organised, and a highly ambitious conversion plan has begun to be set up. The objective is to apply a new turn in strategy, by replanting 30 000 ha of more competitive varieties on rootstocks tolerant to the disease (Tarocco clones that have been improved or able to extend the season, easy peelers developed locally, etc.). An initial allowance of 10 million euros has been granted, enabling approximately 1 000 ha to be treated. 50 million euros per year of Community funds should follow until 2020, with this project among the priorities of the 2014-2020 ERDF submitted by Sicily to the EU.



Other Mediterranean producers

The harvest should return to normal in Israel, after two seasons marked by major climate problems. The in-depth reconstruction of the cultivation stock in recent years is apparent in the forecast, with in particular strong growth expected from volumes of Or and a very significant parallel fall in grapefruit volumes (see article). Production is also set for a good level in Cyprus, but below average in Greece.

A difficult context

The market context does not seem particularly favourable. Firstly, the apple could end up strongly competing with the other staples of the fruits section on European markets, such as the banana or citrus. The production is set to be large, and even very large in Northern and Eastern Europe. Furthermore, the loss of the Russian market could lead to a transfer of considerable volumes onto the Community market, particularly of Polish fruits. Finally, the "entry level" supplies of small-size apples could be more abundant, as the industrial apple market where these fruits are offloaded is saturated this season. Furthermore, while the direct impact of the Russian embargo on Community citrus seems rather moderate overall (see article), what will be the impact of the collapse of the rouble? Might volumes earmarked for this market not be transferred onto the Community market, for want of takers? Prices of imported food labels are soaring, with the Russian currency having lost 30 % against the dollar in one year ■

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Citrus – Mediterranean Basin – 2013-2014 production														
000 tonnes		Total	France	Spain	Morocco	Algeria	Tunisia	Italy	Israel	Cyprus	Greece	Turkey	Egypt	Gaza*
EASY PEELERS	Production	6 311.4	24.3	2 204.3	1 162.3	111.0	46.5	760.0	138.9	81.1	148.0	910.0	725.0	-
	Domestic sales	2 662.7	-	299.0	667.0	111.0	46.5	521.0	37.0	15.9	44.7	300.0	620.6	-
	Industry	432.4	-	215.0	16.0	-	-	77.0	24.0	22.9	1.5	70.1	5.8	-
	Losses	363.0	2.0	172.9	-	-	-	96.0	-	-	19.0	-	73.1	-
	Export	2 853.6	22.3	1 517.4	480.0	-	-	65.6	77.9	42.2	82.9	539.9	25.4	-
ORANGE	Production	12 638.0	-	3 914.2	999.9	415.0	190.1	1 935.0	68.9	92.4	970.0	1 380.0	2 613.2	59.4
	Domestic sales	6 645.5	-	1 099.0	849.8	415.0	171.2	1 424.1	46.0	52.5	429.3	900.4	1 250.2	8.1
	Industry	1 798.6	-	1 104.0	52.0	-	-	320.0	16.0	20.3	135.0	118.2	18.8	14.3
	Losses	531.0	-	150.0	-	-	-	92.0	-	-	47.0	7.0	235.0	-
	Export	3 662.9	-	1 561.2	98.1	-	18.9	98.9	6.9	19.5	358.7	354.4	1 109.2	37.0
LEMON	Production	2 906.8	-	1 057.0	41.3	41.4	58.3	545.0	64.3	16.6	55.5	700.0	323.0	4.4
	Domestic sales	1 301.7	-	161.0	37.2	41.4	56.1	407.6	58.0	7.6	46.0	228.8	256.2	1.8
	Industry	386.3	-	240.0	-	-	-	85.0	3.0	3.9	0.5	50.4	2.6	0.9
	Losses	76.9	-	21.4	-	-	-	22.0	-	-	1.5	-	32.0	-
	Export	1 141.9	-	634.6	4.1	-	2.2	30.4	3.3	5.1	7.5	420.8	32.2	1.7
GRAPEFRUIT	Production	616.8	-	58.7	-	1.0	-	10.0	223.6	44.9	6.0	210.0	58.2	4.5
	Domestic sales	80.7	-	4.0	-	1.0	-	8.0	13.0	3.5	2.6	11.4	36.4	0.9
	Industry	181.1	-	7.2	-	-	-	-	134.0	18.2	0.8	16.8	0.5	3.6
	Losses	6.7	-	0.2	-	-	-	-	-	-	0.5	-	6.0	-
	Export	348.4	-	47.3	-	-	-	2.0	76.6	23.2	2.2	181.8	15.3	-
OTHERS	Production	112.8	-	13.2	-	-	59.5	30.0	9.8	-	-	-	0.3	-
	Domestic sales	80.3	-	12.0	-	-	59.3	2.0	7.0	-	-	-	-	-
	Industry	28.0	-	-	-	-	-	28.0	-	-	-	-	-	-
	Losses	1.2	-	1.2	-	-	-	-	-	-	-	-	-	-
	Export	3.3	-	-	-	-	0.2	-	2.8	-	-	-	0.3	-
TOTAL	Production	22 585.8	24.3	7 247.4	2 203.5	568.4	354.4	3 280.0	505.5	235.0	1 179.5	3 200.0	3 719.6	68.3
	Domestic sales	10 770.9	-	1 575.0	1 554.0	568.4	333.0	2 362.7	161.0	79.5	522.5	1 440.6	2 163.4	10.8
	Industry	2 826.4	-	1 566.2	68.0	-	-	510.0	177.0	65.4	137.8	255.5	27.7	18.8
	Losses	978.8	2.0	345.7	-	-	-	210.0	-	-	68.0	7.0	346.1	-
	Export	8 011.6	22.3	3 760.5	583.8	-	21.4	196.9	167.5	90.1	451.2	1 496.9	1 182.4	38.7

* estimate / Source: CLAM

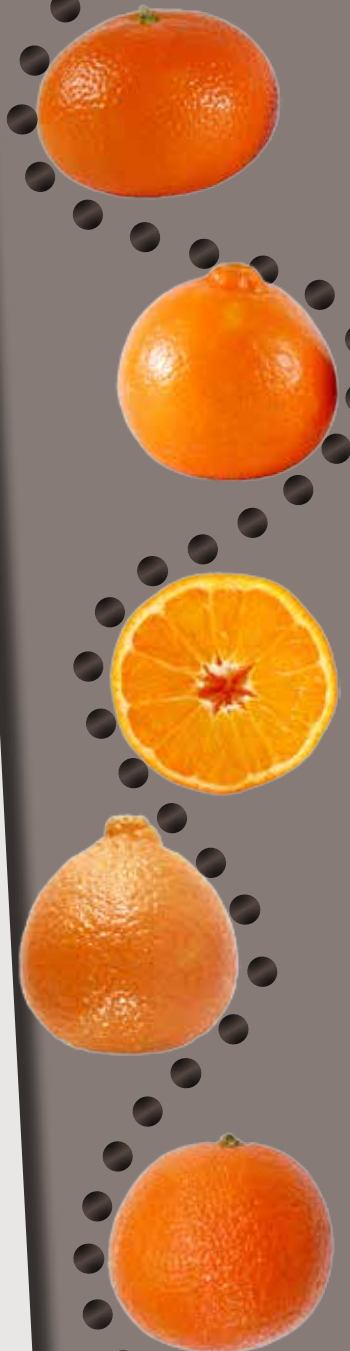
Citrus – Mediterranean Basin – 2014-2015 production forecast														
000 tonnes		Total	France	Spain	Morocco	Algeria	Tunisia	Italy	Israel	Cyprus	Greece	Turkey	Egypt	Gaza*
EASY PEELERS	Production	6 037.5	30.0	1 897.3	1 004.0	111.0	46.5	672.0	223.0	88.6	148.0	1 092.1	725.0	
	Domestic sales	2 714.8	-	290.0	605.0	111.0	46.5	476.0	97.5	17.2	50.0	401.0	620.6	-
	Industry	433	-	200.0	30.0	-	-	75.0	25.5	25.1	1.5	70.1	5.8	-
	Losses	178.5	3.0	7.3	-	-	-	63.0	-	19.6	12.5	-	73.1	-
	Export	2 710.9	27.0	1 400.0	369.0	-	0.03	58.0	100.0	26.7	84.0	620.8	25.4	-
ORANGE	Production	11 242.5	-	3 336.5	868.0	415.0	190.1	1 344.0	122.5	106.8	850.0	1 337.0	2 613.2	59.4
	Domestic sales	5 658.1	-	962.0	681.0	415.0	171.2	855.0	78.0	60.7	330.0	846.9	1 250.2	8.1
	Industry	1 434.3	-	704.0	40.0	-	-	320.0	25.5	23.5	170.0	118.2	18.8	14.3
	Losses	401	-	93.5	-	-	-	52.0	-	0.5	20.0	-	235.0	-
	Export	3 749.1	-	1 577.0	147.0	-	18.9	117.0	19.0	22.1	330.0	371.9	1 109.2	37.0
LEMON	Production	2 766.6	-	955.6	29.0	41.4	58.3	475.0	66.0	23.9	55.0	735.0	323.0	4.4
	Domestic sales	1 221.5	-	160.0	22.0	41.4	56.1	300.0	59.8	10.9	46.0	267.3	256.2	1.8
	Industry	367.2	-	220.0	-	-	-	85.0	2.2	5.6	0.5	50.4	2.6	0.9
	Losses	79.1	-	5.6	-	-	-	40.0	-	-	1.5	-	32.0	-
	Export	1 098.7	-	570.0	7.0	-	2.2	50.0	4.0	7.3	7.0	417.3	32.2	1.7
GRAPEFRUIT	Production	575.9	-	75.9	6.0	1.0	-	8.0	185.0	46.0	6.0	185.3	58.2	4.5
	Domestic sales	72	-	6.0	2.0	1.0	-	4.0	10.0	3.5	3.0	5.2	36.4	0.9
	Industry	147.1	-	9.0	-	-	-	-	98.0	18.7	0.5	16.8	0.5	3.6
	Losses	13.4	-	6.9	-	-	-	-	-	-	0.5	-	6.0	-
	Export	343.4	-	54.0	4.0	-	-	4.0	77.0	23.8	2.0	163.3	15.3	
OTHERS	Production	74	-	2.7	-	-	59.5	4.0	7.5	-	-	-	0.3	-
	Domestic sales	65.8	-	2.0	-	-	59.3	-	4.5	-	-	-	-	-
	Industry	4.5	-	-	-	-	-	4.0	0.5	-	-	-	-	-
	Losses	0.7	-	0.7	-	-	-	-	-	-	-	-	-	-
	Export	3	-	-	-	-	0.2	-	2.5	-	-	-	0.3	-
TOTAL	Production	20 696.3	30.0	6 268.0	1 907.0	568.4	354.4	2 503.0	604.0	265.2	1 059.0	3 349.4	3 719.6	68.3
	Domestic sales	9 732.1	-	1 420.0	1 310.0	568.4	333.0	1 635.0	249.8	92.3	429.0	1 520.4	2 163.4	10.8
	Industry	2 386.1	-	1 133.0	70.0	-	-	484.0	151.7	72.9	172.5	255.5	27.7	18.8
	Losses	672.7	3.0	114.0	-	-	-	155.0	-	20.1	34.5	-	346.1	-
	Export	7 905.1	27.0	3 601.0	527.0	-	21.4	229.0	202.5	79.9	423.0	1 573.2	1 182.4	38.7

* estimate / Source: CLAM

Easy peelers

2014-15 is again set for a big season, symptomatic of the strong growth dynamic of this varietal group in the Mediterranean. For the second time in its history, production will exceed the symbolic 6 million-tonne mark, approaching the record set last season. However, the harvest of the regional champion, Spain, which on its own accounts for approximately one third of the total volumes produced in the region, is set to be somewhat smaller than last season and below average. A shortfall due to smaller production of early cultivars (clementines such as Clemenrubi or Oronules, and above all Satsuma), but also Clemenvilla, a variety representing a considerable proportion of the supply during the core season. Conversely, volumes of clementines like Nules will be as large as in 2013-14. Volumes of late varieties will continue to increase slightly, in particular thanks to a bigger season for Ortanique and above all Nadorcott. Moroccan production will also drop, though this is from a historic 2013-14 season when the effects of the "Maroc Vert" plan showed through for the first time. The expected rise in volumes in the Berkane region will not manage to compensate for the considerable fall from the Souss region. Nonetheless, with quantities estimated at approximately 1 million tonnes, the harvest for this source remains the second biggest ever recorded. A considerable shortfall is also expected in Italy, even further reducing its already extremely limited export capacity. While the West Mediterranean sources are exhibiting a downturn, the same cannot be said for the Eastern sources. The Israeli harvest will reach a historic level, with easy peelers for the first time becoming the country's number one citrus family, ahead of the grapefruit. The growth of Or production potential, concealed for the past two seasons by major climatic problems, should become tangible. A record harvest is also expected in Turkey, set to exceed the symbolic one million-tonne mark. The supply this season will remain largely dominated by early cultivars such as Satsuma, with the big surface areas of late cultivars planted in recent years not yet having entered production. The Cypriot Mandora harvest will return to average.

The very first part of the season went rather well on the West European markets. The abnormally high temperatures weighed down on demand, though the volumes available were extremely modest because of the Spanish shortfall. The situation gradually deteriorated from mid-October, with the switch to cultivars representing bigger volumes, such as Oronules. The blame this season once again lies with the still abnormally high temperatures, which had a negative impact on sales on the consumption markets, and on external quality in the production zones. This unfavourable climatic context, which remained in place in mid-November, could impede the always very sensitive core season period, when big volumes of Spanish Nules are still to be sold. The production shortfall of Clemenvilla may help counterbalance the delay to market already existing (evaluated at around ten days). Morocco's desire to limit shipments to Russia (130 000 t scheduled as opposed to figures of 200 000 t in 2013-14) could lead to more significant volumes of Fine clementine to the EU. For Spain, the absence of its Russian outlet should also be considered in this period, although modest quantities overall are involved (25 000 to 40 000 t, depending on the season). The supply level will be clearly on the rise during the last part of the season, in particular for top-of-the-range cultivars (large potential for Spanish Nadorcott, and most of all Israeli Or). Ortaniques may struggle to find their place on the market in this context, especially since Cyprus will need to reposition a large proportion of its supply on the Community market, in the absence of its Russian outlet (40 000 to 50 000 t).



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Still plenty from the West... and loads from the East

Mediterranean Easy peelers

- Growing exports between 2.6 and 2.8 million tonnes
- 63 % of world trade estimated at 4.1 million tonnes
- The world's leading export zone

Easy peelers – Export forecast
by CLAM countries

000 tonnes	2014-15	2013-14	average of the 4 last years	2014-15 comparison with	
				2013-14	average
Spain	1 400	1 517	1 575	- 8 %	- 11 %
Morocco	369	480	370	- 23 %	0 %
Corsica	26	22	21	+ 17 %	+ 21 %
Israel	99	78	74	+ 26 %	+ 33 %
Turkey	551	540	469	+ 2 %	+ 17 %
Italy	78	66	91	+ 20 %	- 14 %
Cyprus	59	42	56	+ 40 %	+ 5 %
Greece	100	83	79	+ 21 %	+ 27 %
Egypt	25	25	28	- 2 %	- 12 %
Total	2 707	2 854	2 764	- 5 %	- 2 %

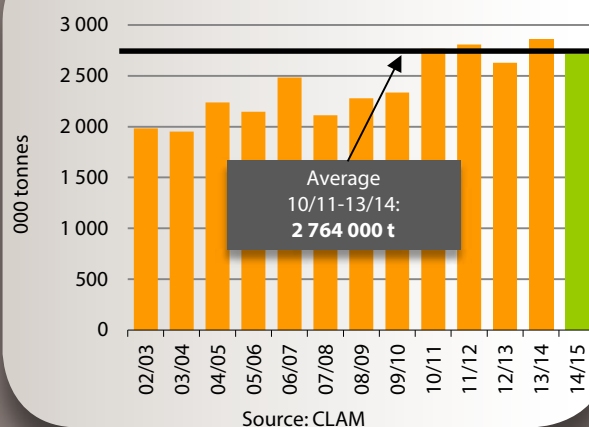
Source: CLAM

Easy peelers – World – Consumption

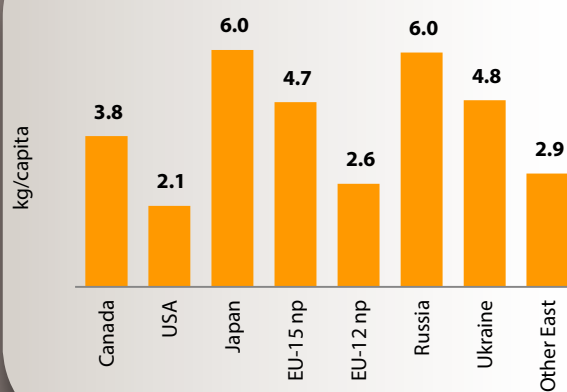
	2013 (kg)	Evolution (g)	
		2013/2012	2013/2009
Canada	3.8	+ 3	+ 138
United States	2.1	+ 151	+ 266
Japan	6.0	+ 384	- 749
EU-15 np	4.7	- 152	+ 110
EU-12 np	2.6	- 292	- 210
Russia	6.0	+ 536	+ 2 184
Ukraine	4.8	+ 887	+ 1 775
Other Eastern countries	2.9	- 147	+ 306

np: non producer countries / Sources: Customs, COMTRADE, professionals

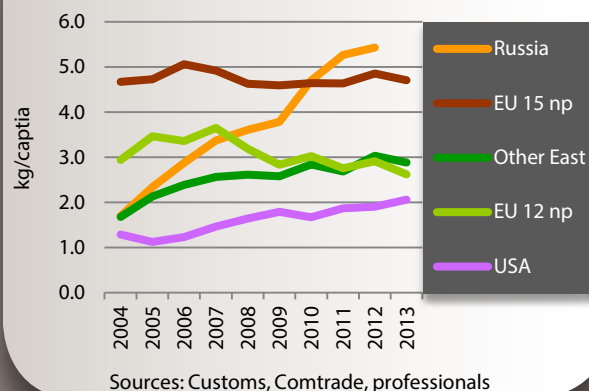
Easy peelers - Mediterranean - Exports



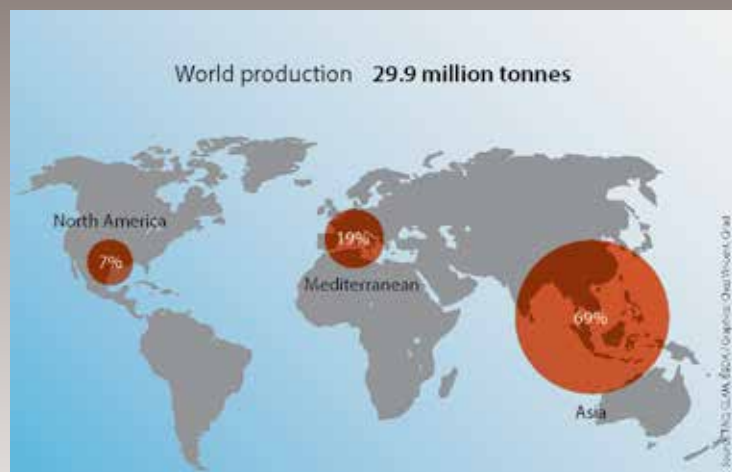
Easy peelers - World - Consumption in 2013



Easy peelers - World - Evolution of consumption in main markets



EASY PEELERS - Production (2012-13)



Easy peelers - The 10 leading producer countries	
000 tonnes	2012-2013
China	17 000
Spain	2 174
Brazil	960
Japan	900
Iran	825
Italy	792
Egypt	725
South Korea	692
Morocco	662
Turkey	543

Sources: FAO, professionals

EASY PEELERS - Imports (2012-13)



Easy peelers - The 10 leading importer countries	
000 tonnes	2012-2013
Russia	838
Germany	768
France	704
United Kingdom	541
Netherlands	373
Poland	343
Ukraine	216
Italy	186
United Kingdom	150
Canada	130

Source: National Customs

EASY PEELERS - Exports (2012-13)



Easy peelers - The 10 leading exporter countries	
000 tonnes	2012-2013
Spain	1 541
China	733
Turkey	411
Pakistan	358
Morocco	307
South Africa	127
Greece	91
Italy	85
Peru	85
Argentina	80

Sources: national Customs, professionals

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USA - Imports - Main supplier countries					
000 tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	117.6	117.3	152.2	146.5	150.1
Total N. Hemis., incl.	83.1	67.5	86.3	66.9	65.3
Spain	55.5	44.9	60.8	47.5	47.6
Morocco	18.6	15.1	20.9	16.2	11.5
Mexico	7.7	5.8	3.5	1.1	3.9
Israel	1.2	1.7	1.1	2.0	2.3
Total S. Hemis., incl.	49.8	61.5	65.9	79.6	84.8
Chile	27.3	35.5	43.3	53.5	60.2
Peru	10.6	14.6	14.3	17.2	19.6
South Africa	6.0	7.8	4.5	7.0	3.4
Australia	4.3	3.1	2.2	1.9	1.6
Local production (tangerine, tangelo)	577	601	643	711	716
California	337	359	385	472	526
Florida	229	229	247	232	182
Arizona	12	13	11	7	7

Source: US Customs, code 080520

Canada - Imports - Main supplier countries					
000 tonnes	2009	2010	2011	2012	2013
Total	124.1	123.9	123.9	129.9	129.7
Total N. Hemis., incl.	106.5	105.9	103.2	104.5	104.9
Morocco	50.3	45.4	38.6	37.3	33.8
China	32.0	29.7	28.5	28.7	33.4
USA	17.8	22.4	22.4	17.0	20.2
Spain	2.3	3.8	7.6	11.7	7.5
Japan	2.1	1.7	2.2	2.0	2.3
Total S. Hemis., incl.	17.0	18.0	20.7	25.4	24.8
Peru	4.4	6.5	8.9	11.1	10.5
South Africa	4.5	3.2	4.5	6.0	6.2
Argentina	2.6	3.1	3.0	3.5	3.0
Chile	2.4	2.7	2.3	2.5	2.3
Uruguay	1.6	1.1	1.6	1.4	1.9
Brazil	1.3	1.4	0.4	0.9	0.3

Source: COMTRADE, code 080520

European Union - Imports - Main supplier countries					
000 tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	1 708.7	1 697.8	1 750.0	1 787.6	1 710.7
Total N. Hemis., incl.*	1 532.8	1 522.7	1 592.2	1 623.5	1 551.4
Spain	1 262.3	1 157.6	1 295.7	1 317.7	1 279.8
Italy	47.3	91.7	75.1	89.5	75.1
Morocco	79.9	114.2	90.5	80.6	64.0
Israel	24.8	36.3	29.0	42.7	40.8
Greece	14.4	31.5	36.1	31.6	39.9
Turkey	80.9	64.3	50.3	45.4	36.7
Cyprus	11.5	13.6	8.1	6.4	7.0
Portugal	4.4	4.1	2.8	5.8	5.6
Pakistan	4.3	5.1	3.3	2.6	2.2
Egypt	1.5	2.3	1.1	1.2	0.3
Total S. Hemis., incl.	175.2	177.4	157.9	164.1	159.3
South Africa	65.3	65.1	57.8	70.0	80.9
Peru	23.4	33.2	41.9	48.5	44.1
Argentina	47.0	39.8	32.1	24.0	15.8
Uruguay	33.9	37.2	24.2	19.4	15.4
Australia	2.2	0.5	0.2	0.5	1.9

*Extra-EU imports and imports from EU producer countries (Spain, Italy, Greece) /
Source: EUROSTAT, code 080520

Other West European countries - Main markets					
000 tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	1 708.7	1 697.8	1 750.0	1 787.6	1 710.7
Switzerland	1 262.3	1 157.6	1 295.7	1 317.7	1 279.8
Norway	47.3	91.7	75.1	89.5	75.1
Iceland	79.9	114.2	90.5	80.6	64.0

Source: COMTRADE, code 080520

Russia - Imports - Main supplier countries					
000 tonnes	2009	2010	2011	2012	2013
Total	533.4	660.4	739.5	762.8	838.1
Total N. Hemis, incl.	469.0	590.8	668.7	696.1	768.3
Morocco	132.5	167.7	198.7	191.8	222.2
Turkey	134.6	162.7	186.9	158.8	200.6
China	79.0	66.7	66.0	87.1	86.9
Pakistan	43.5	82.9	77.1	91.3	80.3
Georgia	10.9	-	-	29.2	49.2
Spain	19.9	27.5	57.7	59.7	47.7
Israel	23.7	22.7	21.5	19.9	22.7
Cyprus	6.2	9.4	16.6	15.8	18.6
Greece	2.3	3.4	7.4	12.7	12.4
Iran	0.8	0.4	0.5	3.5	5.2
Total S. Hemis, incl.	62.2	69.6	70.8	66.7	69.8
Argentina	40.6	46.5	48.1	42.0	44.0
South Africa	11.1	14.1	13.2	13.0	14.1
Uruguay	3.2	5.8	5.6	7.0	8.0
Peru	1.0	3.2	3.9	4.7	3.7

Source: COMTRADE, code 080520

Ukraine - Imports - Main supplying countries					
000 tonnes	2009	2010	2011	2012	2013
Total, incl.	136.2	157.6	181.8	175.7	215.7
Spain	14.5	16.3	34.1	35.2	343.9
Turkey	54.9	75.3	85.5	70.0	114.6
Georgia	37.8	28.7	10.8	13.4	21.4
Pakistan	8.4	11.0	20.9	25.4	13.8
Italy	8.5	10.7	16.9	16.8	12.4
Greece	2.9	5.6	5.6	5.8	6.0
Israel	2.4	1.8	-	2.5	3.6
Egypt	1.7	1.7	1.7	1.9	3.5

Source: COMTRADE, code 080520

Other Central and East European countries - Main markets					
000 tonnes	2009	2010	2011	2012	2013
Total, incl.	94.2	103.7	98.0	110.5	105.1
Belarus	27.9	29.4	32.5	38.9	42.9
Serbia	22.1	27.3	23.0	24.4	21.1
Bosnia	16.5	18.7	16.2	17.3	13.8
Moldova	6.9	6.6	7.6	8.2	9.3
Macedonia	7.4	7.5	6.5	7.5	8.1
Albania	9.9	10.4	7.7	8.4	5.7
Croatia	3.3	3.8	4.7	5.8	4.3

Source: COMTRADE, code 080520

Japan - Imports - Main supplier countries					
000 tonnes	2009	2010	2011	2012	2013
Total	9.0	10.9	21.3	20.3	15.6
Total N. Hemis, incl.	7.2	9.3	17.7	16.7	12.4
USA	7.1	9.2	17.6	16.6	12.4
Israel	-	-	-	-	1.3
Taiwan	0.1	0.1	0.1	0.1	0.1
Total S. Hemis, incl.	1.8	1.6	3.6	3.6	3.2
Australia	1.2	1.0	2.3	2.1	2.5
New Zealand	0.5	0.3	0.9	1.0	0.6
Chile	0.2	0.3	0.5	0.3	0.1

Source: Japanese Customs, code 080520

South-East Asia - Main markets					
000 tonnes	2009	2010	2011	2012	2013
Total	433.8	391.0	462.2	534.6	414.9
Thailand	38.7	30.8	73.8	144.8	142.6
Indonesia	189.0	160.3	182.3	179.4	76.0
Philippines	56.6	41.8	46.7	72.6	57.6
Malaysia	65.9	75.3	72.8	59.3	44.6
China	36.5	31.2	36.1	29.5	41.9
Singapore	16.8	19.5	19.8	17.5	21.7
Vietnam	25.8	21.2	20.1	21.0	21.0
Sri Lanka	4.5	10.9	10.5	10.6	9.5

Source: COMTRADE, code 080520

Central Asia - Main markets					
000 tonnes	2009	2010	2011	2012	2013
Total	49.3	52.2	79.0	80.7	102.2
Kazakhstan	28.8	40.0	51.6	65.9	84.2
Kyrgyzstan	8.1	7.0	7.3	10.2	11.3
Armenia	3.0	2.6	10.1	3.7	4.8
Azerbaijan	9.5	2.6	10.1	0.9	1.9

Source: COMTRADE, code 080520

Persian Gulf - Main markets					
000 tonnes	2009	2010	2011	2012	2013
Total	161.9	255.7	326.8	286.9	333.1
Iraq	55.0	72.0	105.0	134.9	158.8
United Arab Emirates	17.2	17.3	50.0	50.0	85.0
Saudi Arabia	20.4	57.5	59.3	58.6	55.7
Kuwait	14.1	15.0	15.0	10.6	15.1
Qatar	3.5	4.9	5.0	9.1	6.1
Oman	11.5	11.2	23.0	7.6	4.6
Bahrain	3.7	3.7	3.9	4.0	4.5
Iran	36.5	74.2	65.6	12.1	3.3

Source: COMTRADE, code 080520

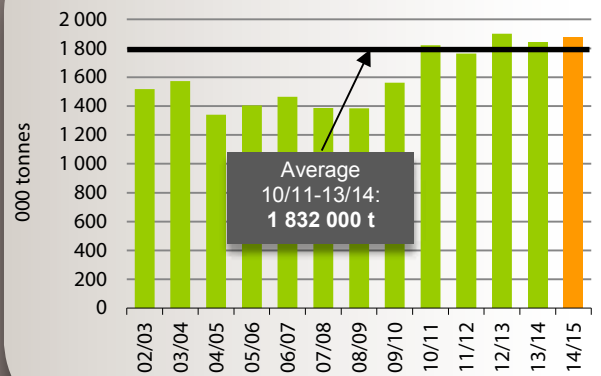


Orange

There will be a considerable production fall, though this is from a record 2013-14 season when Mediterranean volumes exceeded 12 million tonnes for the first time. A trend largely attributable to the region's number one Spain, whose harvest will stick very closely to the trend described above: production will remain big despite a lower level than last year's historic season of more than 7 million tonnes. The export potential should be greater still, even more than last season's, and the second biggest ever seen. Sorting rejects and industrial use should not reach the historic levels of 2013-14, with the size range set to be considerably higher, while the occurrence of quality problems of creasing or splitting of the epidermis ("clareta" or "rajado") should be less than last season. Hence the supply to the West European markets, three-quarters of which is provided by Spain, promises to be abundant throughout the season. Volumes, which had proven somewhat below average during the period from January to April because of the problems mentioned above, should return to a much higher level.

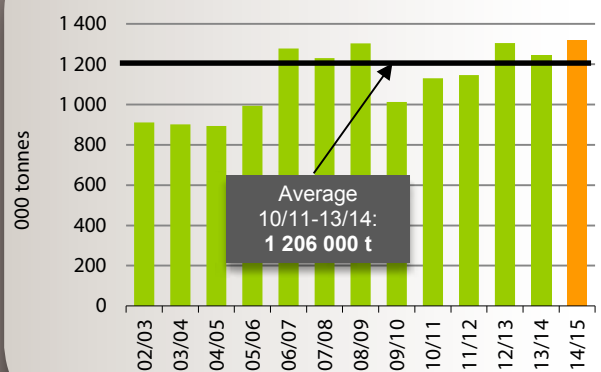
What about the volumes from the top-up sources? Egypt, the number two supplier to the EU in recent years during the winter season, with a market share of approximately 8 %, seems to have an average production. Conversely, a fall in exports is possible since the main asset of this source, namely its price competitiveness, could be less pronounced because of a very considerable increase in logistical costs (approximately 850 USD per tonne more, according to the Agricultural Export Council). The Italian harvest is registering a spectacular downturn of more than 30 %, plummeting to a level never recorded. Nonetheless, exporters hope to be able to maintain the export flow, limited in view of the production, to a normal level. Morocco, less and less involved in exports of this citrus family, because of an increasingly demanding and lucrative local market (less than 100 000 t of exports to all destinations in 2012-13 and 2013-14), should have a smaller production than last year.

Navel oranges - Mediterranean - Exports



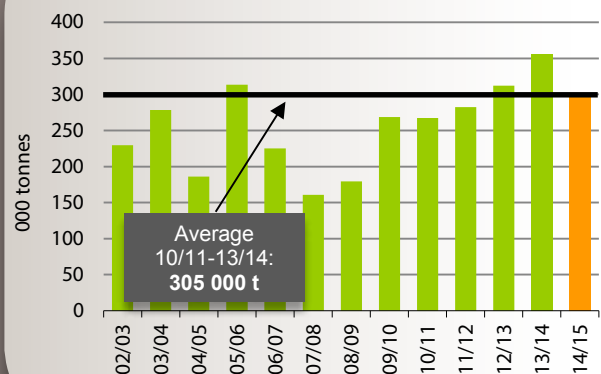
Source: CLAM

Late oranges - Mediterranean - Exports



Source: CLAM

Blonde oranges - Mediterranean - Exports



Source: CLAM

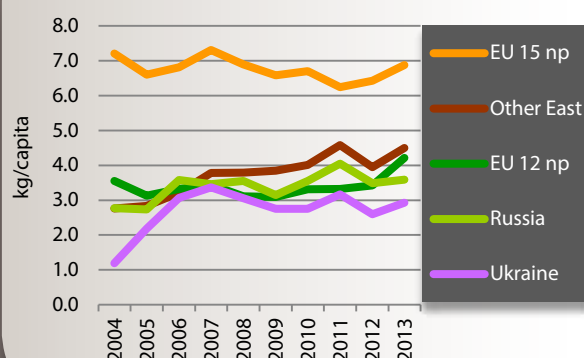
Export potential similar to last season, but quality and size range on the rise

Mediterranean orange

- Growing exports between 3.3 and 3.7 million tonnes
- 59 % of world trade estimated at 6.2 million tonnes
- The world's leading export zone

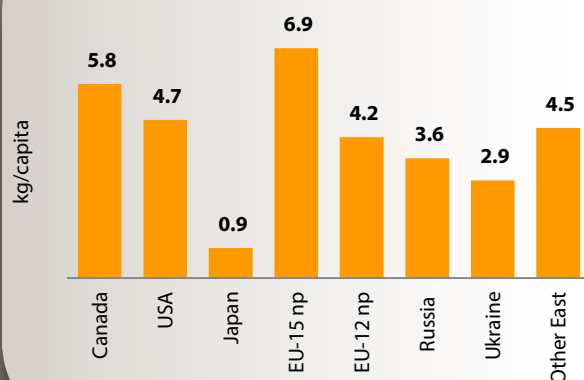


Orange - World - Evolution of consumption in main markets



Sources: Customs, Comtrade, professionals

Orange - World - Consumption in 2013



Sources: Customs, Comtrade, professionals

Orange – Export forecast by CLAM countries

000 tonnes	2014-15	2013-14	average of the 4 last years	2014-15 comparison with	
				2013-14	average
Spain	1 576	1 560	1 602	+ 1 %	- 2 %
Morocco	147	98	122	+ 50 %	+ 20 %
Israel	19	7	10	+ 175 %	+ 92 %
Tunisia	19	18	20	+ 4 %	- 4 %
Turkey	372	354	318	+ 5 %	+ 17 %
Italy	117	99	106	+ 18 %	+ 10 %
Cyprus	22	20	24	+ 13 %	- 7 %
Greece	330	359	348	- 8 %	- 5 %
Egypt	1 063	1 063	937	0 %	+ 13 %
Total	3 665	3 578	3 486	+ 2 %	+ 5 %

Source: CLAM

Orange – Export forecast by variety

000 tonnes	2014-15	2013-14	average of the 4 last years	2014-15 comparison with	
				2013-14	average
Navel Navelina	1 877	1 839	1 832	+ 2 %	+ 2 %
Blonde	302	356	305	- 15 %	- 1 %
Blood	173	144	149	+ 20 %	+ 16 %
Late	1 319	1 243	1 206	+ 6 %	+ 9 %
Total	3 665	3 578	3 486	+ 2 %	+ 5 %

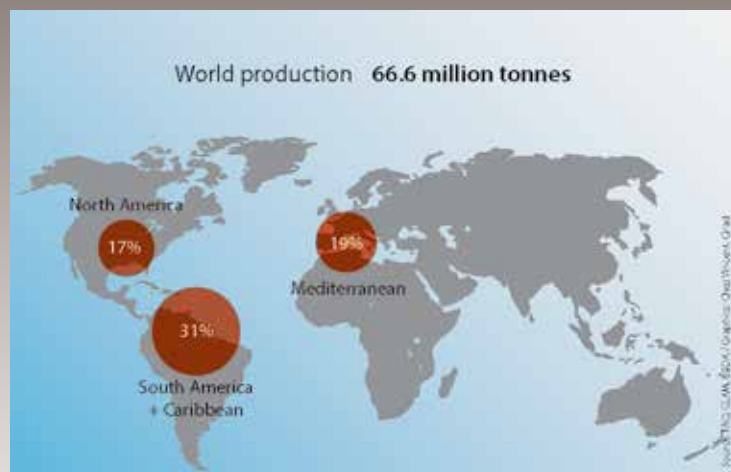
Source: CLAM

Orange – World – Consumption

	2013 (kg)	Evolution (g)	
		2013/2012	2013/2009
Canada	5.8	+ 74	+ 274
United States	4.7	- 114	+ 691
Japan	0.9	- 153	+ 132
EU-15 np	6.9	+ 454	+ 301
EU-12 np	4.2	+ 790	+ 1 121
Russia	3.6	+ 107	+ 442
Ukraine	2.9	+ 331	+ 176
Other Eastern countries	4.5	+ 546	+ 649

np: non producer countries / Sources: Customs, COMTRADE, professionals

ORANGE - Production (2012-13)



Orange - The 10 leading producer countries

tonnes	2012-2013
Brazil	16 361 000
United States	7 502 000
China	7 000 000
India	5 000 000
Mexico	4 000 000
Spain	3 723 000
Egypt	2 613 000
Italy	1 730 000
Indonesia	1 611 000
South Africa	1 609 000

Sources: FAO, professionals

ORANGE - Imports (2013)

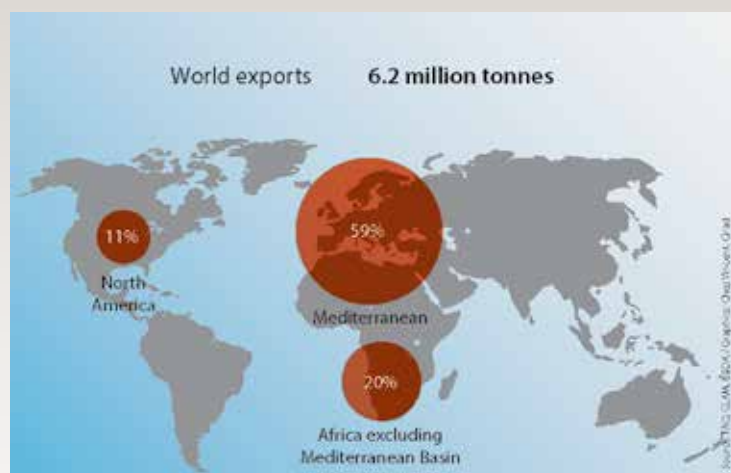


Orange - The 10 leading importer countries

tonnes	2013
Germany	1 086 895
Netherlands	974 265
France	950 163
United Kingdom	576 643
Russia	503 937
Italy	405 150
Saudi Arabia	334 778
Poland	306 784
China	269 608
Spain	248 488

Source: national Customs

ORANGE - Exports (2012-13)



Orange - The 10 leading exporter countries

tonnes	2012-2013
Spain	1 771 000
South Africa	1 152 000
Egypt	1 017 000
USA	680 000
Greece	303 000
Turkey	243 000
Morocco	141 000
Italy	105 400
China	83 000
Argentina	50 000

Sources: national Customs, professionals

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USA - Import - Main supplier countries

tonnes	2009	2010	2011	2012	2013
Total	89 933	106 839	104 335	118 895	138 869
Total N. Hemis., incl.	18 386	23 631	15 208	19 954	33 441
Mexico	16 089	20 636	12 318	17 421	27 600
Morocco	25	61	0	0	3 189
Dominican Rep.	1 482	1 840	2 084	2 380	2 485
Total S. Hemis., incl.	71 547	83 208	89 127	98 941	105 428
Chile	20 312	33 393	44 933	51 510	58 856
South Africa	27 246	33 632	35 662	35 961	36 013
Australia	23 486	15 361	7 959	11 100	10 433
Peru	503	822	573	370	126

Source: US Customs

Canada - Imports - Main supplying countries

tonnes	2009	2010	2011	2012	2013
Total	185 932	200 795	208 119	194 473	197 951
Total N. Hemis., incl.	148 668	162 379	163 728	149 339	149 653
Morocco	141 246	159 779	161 300	145 012	145 405
China	3 268	1 452	1 149	3 001	2 957
USA	2 195	230	272	453	677
Spain	1 709	591	563	466	335
Japan	251	327	444	407	279
Total S. Hemis., incl.	36 498	37 392	43 588	44 467	47 367
South Africa	27 128	26 828	33 094	36 297	38 504
Chile	2 297	3 754	4 928	3 562	4 013
Australia	3 840	3 708	3 255	3 107	3 563
Uruguay	2 032	834	821	457	940
Argentina	472	1 568	1 329	935	279
Others	766	1 024	803	667	931

Source: COMTRADE

Oceania - Main markets

tonnes	2009	2010	2011	2012	2013
Total	27 444	32 708	36 645	32 722	35 058
Australia	15 165	19 481	24 023	19 223	20 794
New Zealand	12 279	13 227	12 622	13 499	14 264

Source: COMTRADE

European Union - Imports - Main supplier countries					
tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	2 269 862	2 421 149	2 266 123	2 513 265	2 687 113
Total N. Hemis., incl.	1 740 302	1 765 840	1 723 883	1 975 193	2 080 343
Spain	1 233 935	1 097 480	1 146 248	1 382 095	1 464 457
Greece	120 811	221 229	195 743	196 100	214 532
Egypt	131 496	133 650	101 350	176 339	178 600
Italy	57 591	127 233	100 392	89 942	93 565
Morocco	90 430	92 965	99 281	46 570	46 628
Portugal	13 747	10 305	17 699	24 291	25 708
Tunisia	19 945	22 329	20 307	19 445	19 445
Turkey	32 912	17 400	10 695	13 338	13 449
Cyprus	4 861	7 135	8 020	7 444	7 587
Israel	22 833	17 836	11 101	6 436	6 434
Total S. Hemis., incl.	529 560	655 309	542 240	538 071	606 770
South Africa	333 211	416 018	338 664	396 015	433 637
Uruguay	59 293	71 279	57 610	36 012	50 268
Argentina	81 413	86 702	80 720	47 971	49 653
Zimbabwe	13 517	23 705	11 645	19 257	28 903
Brazil	16 217	33 903	26 872	13 276	21 248
Peru	2 678	6 192	9 892	7 254	10 565
Swaziland	12 983	9 566	11 879	12 005	9 801
Chile	8 609	6 899	4 716	5 730	2 208

Source: EUROSTAT

Other West European countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	100 815	103 800	102 085	100 538	108 110
Switzerland	61 689	64 424	62 758	62 924	68 025
Norway	37 509	37 730	37 484	35 644	37 985
Iceland	1 617	1 646	1 842	1 970	2 100

Source: COMTRADE

Russia - Imports - Main supplying countries					
000 tonnes	2009	2010	2011	2012	2013
Total	443 549	498 799	568 339	489 149	503 937
Total N. Hemis, incl.	320 047	327 511	433 964	361 281	365 856
Egypt	128 536	149 905	218 941	197 299	233 934
Turkey	85 378	76 931	102 458	69 888	66 381
Spain	6 007	15 099	22 404	25 008	27 518
Morocco	80 978	63 848	69 968	50 733	24 531
China	13 131	15 224	10 348	13 980	9 636
Greece	510	769	3 142	1 276	1 787
Syria	1 001	1 082	2 600	1 087	1 762
Total S. Hemis, incl.	122 400	167 606	132 712	126 862	135 000
South Africa	94 020	131 732	114 601	118 110	128 853
Uruguay	5 586	6 426	4 699	2 872	3 698
Zimbabwe	846	577	276	1 399	1 187

Source: COMTRADE

Ukraine - Imports - Main supplier countries					
tonnes	2009	2010	2011	2012	2013
Total	125 762	124 849	143 659	117 953	133 185
Total N. Hemis., incl.	108 271	107 249	127 735	104 184	122 855
Egypt	67 367	68 471	80 474	67 361	72 596
Turkey	33 648	29 715	36 793	25 633	38 637
Spain	4 065	6 070	7 324	8 259	10 790
Total S. Hemis., incl.	17 325	17 201	15 588	13 361	9 799
South Africa	14 385	15 880	14 640	12 758	8 609
Zimbabwe	256	382	64	438	1 082

Source: COMTRADE

Other East European countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total, incl.	154 514	163 145	189 278	163 858	189 324
Serbia	40 320	39 288	48 156	38 433	44 425
Belarus	21 478	24 701	23 999	26 904	36 386
Croatia	28 341	28 016	32 100	27 373	29 201
Bosnia	16 399	18 177	21 101	17 821	20 040
Albania	20 638	22 083	22 791	17 670	16 687
Georgia	6 018	5 051	8 669	9 329	12 629
Macedonia	8 309	9 971	13 032	11 392	11 913
Armenia	4 181	6 792	8 102	5 458	7 253
Montenegro	3 780	4 003	5 415	5 038	5 512
Moldova	5 049	5 063	5 913	4 440	5 278

Source: COMTRADE

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Japan - Imports - Main supplier countries					
tonnes	2009	2010	2011	2012	2013
Total	94 411	109 940	115 330	130 476	111 882
Total N. Hemis., incl.	66 811	75 469	83 626	97 304	74 976
USA	66 792	75 393	83 589	97 304	74 942
Italy	19	76	37	-	34
Total S. Hemis, incl.	27 582	34 441	31 704	33 172	36 906
Australia	18 324	25 312	23 762	27 717	32 479
South Africa	7 370	7 106	7 258	4 930	4 085

Source: Japanese Customs

Central and South-East Asia - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	558 148	638 657	721 633	759 192	717 044
China	246 028	273 953	309 583	292 309	269 608
South Korea	71 221	110 055	141 961	173 943	152 714
Malaysia	86 469	83 119	88 671	95 044	90 353
Singapore	40 542	41 743	43 138	43 460	45 026
Vietnam	10 460	10 147	7 079	8 000	38 071
India	9 872	10 045	24 770	32 566	34 242
Philippines	39 822	35 932	29 670	35 939	24 748
Indonesia	19 586	31 346	33 074	32 492	17 328
Kazakhstan	16 133	18 706	14 792	16 822	14 760
Azerbaijan	5 173	11 819	12 021	10 128	11 535
Thailand	8 536	7 293	9 877	12 516	10 994
Sri Lanka	4 305	4 499	6 996	5 973	7 665

Source: COMTRADE

Persian Gulf - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	1 005 643	1 045 578	1 061 067	1 081 488	1 104 195
Saudi Arabia	303 642	332 473	360 597	389 870	334 778
United Arabia Emirates	178 549	180 000	202 920	157 200	210 208
Iran	152 000	136 407	184 287	200 000	200 000
Iraq	218 169	236 226	147 131	176 737	180 211
Kuwait	76 256	82 582	80 197	69 457	92 827
Oman	37 915	40 193	43 547	45 304	43 796
Qatar	20 000	23 427	25 332	27 891	27 528
Bahrain	19 112	14 270	17 055	15 029	14 847
Yemen	4 309	4 500	1 125	2 549	2 500

Source: COMTRADE

Mediterranean - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	66 433	66 055	94 271	101 658	111 283
Jordan	16 400	28 664	26 482	36 485	35 435
Turkey	40 853	28 591	44 259	30 816	33 472
Algeria	9 180	8 800	8 531	19 357	27 376
Syria	19 000	10 186	15 000	15 000	15 000

Source: COMTRADE

Africa - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	51 191	63 017	54 650	58 855	48 836
South Africa	1 699	1 255	808	378	19 292
Zambia	5 936	7 055	7 261	7 500	10 139
Kenya	3 872	5 282	5 460	6 000	6 000
Namibia	3 407	3 357	3 515	4 272	5 255
Sudan	22 885	29 048	29 158	29 839	3 000
Botswana	1 884	1 777	1 541	2 014	2 276
Senegal	1 460	2 041	1 202	1 534	1 881

Source: COMTRADE

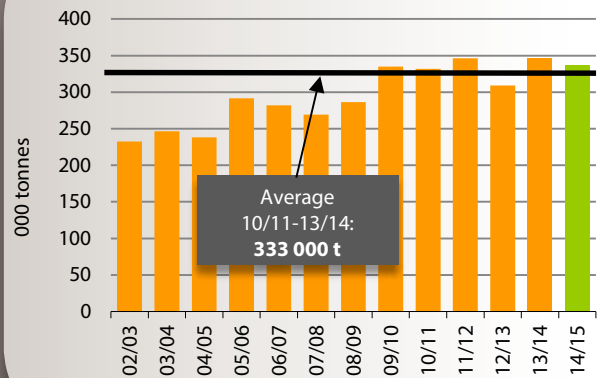
South America - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	236 018	257 694	276 625	305 017	280 974
Costa Rica	71 880	55 016	74 284	84 001	66 637
Surinam	47 967	50 000	50 000	50 000	50 000
Guatemala	34 826	47 860	40 698	53 066	48 791
Paraguay	28 840	37 001	28 784	31 470	29 353
Mexico	10 939	22 535	25 132	35 501	27 912
El Salvador	19 000	22 824	23 000	21 693	27 898
Brazil	1 824	6 002	11 527	11 873	14 598
Ecuador	13 702	9 022	2 562	3 321	9 449
Nicaragua	6 847	2 631	1 352	1 431	2 695
Chile	193	2 659	889	1 456	2 571
Colombia	9 775	1 209	17 408	11 203	1 070

Source: COMTRADE

Mediterranean grapefruit

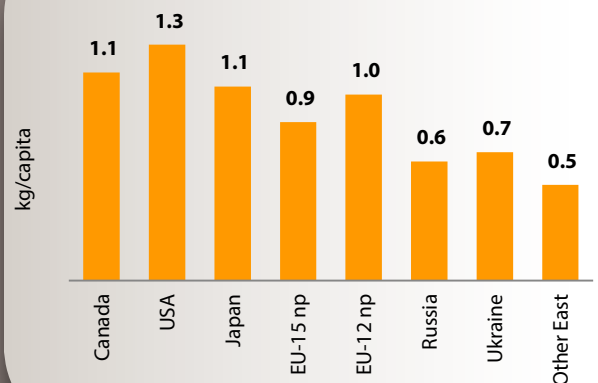
The 2013-14 season, economically catastrophic for the Mediterranean industry (as well as its South African counterpart) has left its marks. Prices were below average for ten months out of twelve on the fresh market from October 2013 to September 2014, reaching their lowest ebb during summer 2014. Furthermore, sales to the industrial sector were very often made at below cost-price levels. This was a difficult season of excess for a good many producers, who resolved to abandon the crop. This was the case in Israel, where 700 ha of Star Ruby were uprooted between 2013 and 2014 (i.e. 30 % of the cultivation area). It was also the case in Turkey, where significant surface areas seem to have suffered the same fate. This reduction in surface areas shows in the 2014-15 production forecasts for these two sources, which represent more than two thirds of the Mediterranean's total production. The fall of more than 10 % in their production potential should bring down the Mediterranean harvest to approximately 560 000 t, its lowest level since the middle of the last decade. Only the outsiders are registering stable production (Cyprus), or slightly above average (Spain). The increase must be put into context for the latter source, since while a 10 to 15 % increase is genuine and due to the expansion of the cultivation area from 2005 to 2010, the rest of the increase corresponds purely to adjustment of the official statistics. A clear market in early October, due to a much more limited Mexican presence than in 2013, and lower production pressure due to these major production structure adjustments, helped get the season off to a decent start. Let's hope that in the long run these drastic measures have put the supply back in step with a consumption in structural decline.

Grapefruit - Mediterranean - Exports



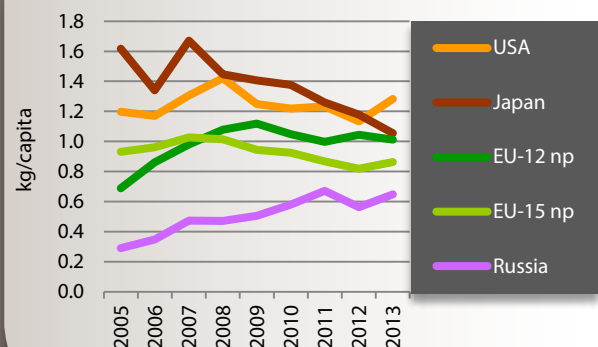
Source: CLAM

Grapefruit - World - Consumption in 2013



Sources: Customs, Comtrade, professionals

Grapefruit - World - Evolution of consumption in main markets



Sources: Customs, Comtrade, professionals

A new deal, after the season of excess

Mediterranean grapefruit

- Stable exports between 310 000 and 350 000 tonnes
- 42 % of world trade estimated at 730 000 tonnes
- The world's leading export zone

Grapefruit – Export forecast by CLAM country

000 tonnes	2014-15	2013-14	average of the 4 last years	2014-15 comparison with	
				2013-14	average
Spain	54	47	49	+ 14 %	+ 9 %
Israel	77	77	79	+ 1 %	- 3 %
Cyprus	24	23	25	+ 3 %	- 3 %
Turkey	163	182	160	- 10 %	+ 2 %
Others	19	17	20	+ 12 %	- 4 %
Total	337	346	333	- 3 %	+ 1 %

Source: CLAM

Grapefruit – World – Consumption

	2013 (kg)	Evolution (g)	
		2013/2012	2013/2009
Canada	1.1	- 82	- 214
United States	1.3	+ 151	+ 34
Japan	1.1	- 122	- 351
EU-15 np	0.9	+ 44	- 81
EU-12 np	1.0	- 31	- 106
Russia	0.6	+ 84	+ 142
Ukraine	0.7	+ 109	+ 319
Other Eastern countries	0.5	+ 99	+ 83

np: non producer countries / Sources: Customs, COMTRADE, professionals

Miles import

MIN DE RUNGIS



Your partner for grapefruit

Origin : • Florida • Mexico • South Africa

5 rue de la Corderie, Centra 310, 94586 Rungis Cedex France — Tel. : 33 (0) 1 41 80 10 10 — Fax. : 33(0) 1 41 80 10 15

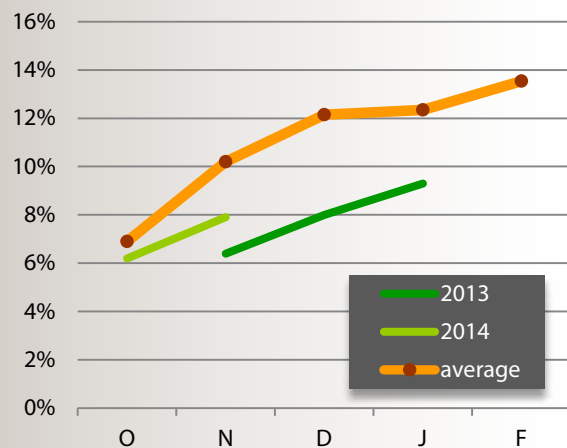
Contact: Guy Lesvenan - g.lesvenan@milesimport.com

Floridian grapefruit

Unsurprisingly, the USDA announced in early October another fall in Floridian production, extending a trend well established since the invasion and rapid spread of greening in Florida in 2005. With 15 million eighty five-pound field crates expected (i.e. approximately 580 000 tonnes), the harvest is down nearly 4 % on last season, reaching a new low point. If this forecast is confirmed, Floridian production will have lost 5 million boxes in five years, i.e. a quarter of its potential. And this initial estimate must not be considered too optimistic. The gap between the initial forecast and actual harvest has been approximately 2 million boxes for the past two seasons, with major fruit dropping during the autumn and winter because of the extreme fragility of the trees infected by the lethal bacterium. The fall in volumes available for the fresh market should be less drastic, with producers continuing to favour this outlet to the detriment of the processing sector, still less lucrative despite the high rates for concentrated juice on the international market. Nonetheless, it is very likely that the volumes intended for export will continue to follow the downward trend of recent seasons (losing 2 million boxes per season since 2009-10). The change, unfavourable for both European and Japanese importers, could hit hard. On the other hand, the small fruit size range still seemed to be quite a handicap in mid-November (volumes delivered to Europe established as at week 47 down more than 40 % from last season). The tests conducted by FDOC revealed an average size range up from last season, though still well below average. Conversely, as in previous seasons, the breakdown of volumes by market should remain more in favour of the EU than Japan. This market, where the economic cycle is still more difficult than in Europe, and where cosmetic aspects are vital, has slumped by half in four seasons, and now absorbs volumes a long way behind those of the EU.

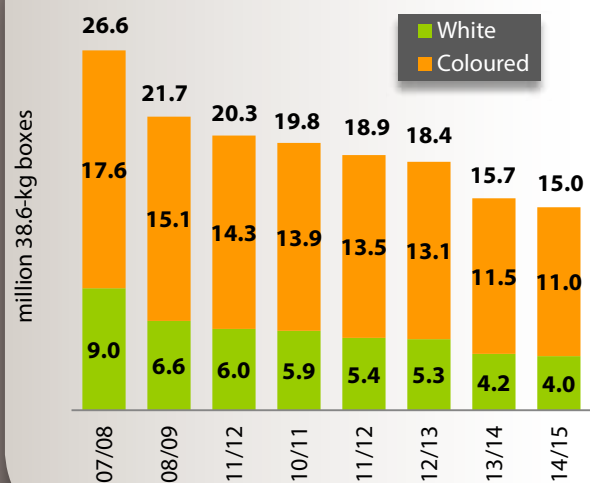
Production and fruit size... at half-mast again

Grapefruit - Florida
Share of size 40 in the production



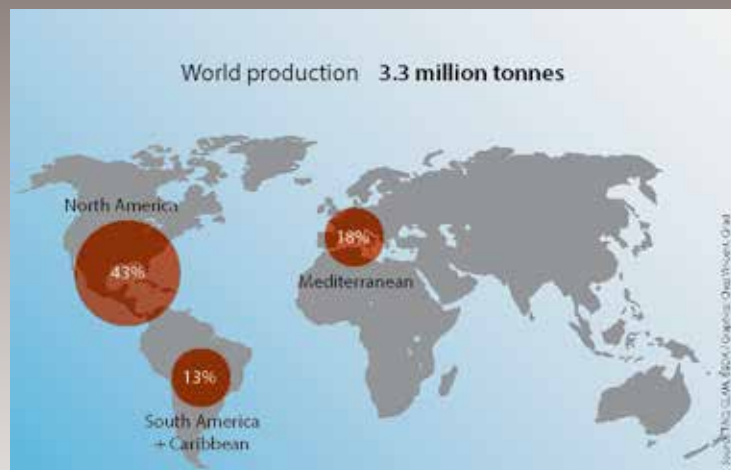
Source: FDOC

Grapefruit - Florida - Production



Source: FDOC

GRAPEFRUIT - Production (2012-13)



Grapefruit - The 8 leading producer countries

tonnes	2012-2013
USA	1 092 000
South Africa	448 000
Mexico	350 000
Turkey	223 000
Israel	210 000
Sudan	196 000
Cuba	84 000
Argentina	60 000

Sources: FAO, professionals

GRAPEFRUIT - Imports (2012-13)



Grapefruit - The 8 leading importer countries

tonnes	2013
Netherlands	336 883
France	152 186
Japan	134 091
Germany	119 326
Russia	90 900
Poland	87 965
United Kingdom	71 886
Canada	38 384

Source: national Customs

GRAPEFRUIT - Exports (2012-13)



Grapefruit - The 8 leading exporter countries

tonnes	2012-2013
South Africa	268 000
USA	182 800
Turkey	132 000
Israel	79 000
Spain	52 000
Cyprus	26 000
Mexico	17 600
Egypt	15 000

Sources: national Customs, professionals

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USA - Imports - Main supplier countries

tonnes	2009	2010	2011	2012	2013
Total	11 143	8 066	6 088	2 851	12 224
Mexico	3 336	4 608	4 410	2 263	10 093
Israel	119	123	158	473	1 094
Bahamas	7 538	3 162	1 234	-	-
Others	20 312	33 393	44 933	51 510	58 856

Source: US Customs

Canada - Imports - Main supplier countries

tonnes	2009	2010	2011	2012	2013
Total	45 216	43 614	43 360	41 146	38 384
Winter total, incl.	39 552	38 512	35 915	33 972	30 158
USA	38 152	37 212	35 277	33 054	29 517
Bahamas	874	396	137	-	-
Mexico	335	641	328	735	423
Thailand	192	262	173	183	218
Summer total, incl.	5 220	4 488	6 472	5 396	8 226
South Africa	4 589	4 288	6 374	5 267	8 136
Argentina	626	124	98	127	72
Chile	5	76	-	2	18

Source: COMTRADE

South America - Main markets

tonnes	2009	2010	2011	2012	2013
Total	11 222	11 652	4 511	9 612	3 792
Mexico	9 118	9816	2 469	8 272	2 228
Argentina	2 104	1836	2 041	1 340	1 564

Source: COMTRADE

European Union - Imports - Main supplier countries					
tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	386 530	373 288	372 610	335 061	323 264
Total N. Hemis., incl.	273 654	271 878	252 081	246 851	211 803
Turkey	64 634	75 004	66 286	81 960	52 786
Spain	36 300	47 900	51 825	44 560	46 998
Israel	68 502	58 101	48 576	44 170	45 401
USA	64 548	55 132	52 721	45 988	40 676
Mexico	11 600	9 167	14 385	13 472	11 392
Cyprus	11 880	10 617	11 773	13 081	11 031
Honduras	9 478	6 063	1 109	76	73
Cuba	1 276	754	-	-	-
Others	5 436	9 140	5 406	3 544	3 446
Total S. Hemis., incl.	112 876	101 410	120 529	88 210	111 461
South Africa	88 616	78 897	94 006	75 412	104 725
Zimbabwe	1 947	2 053	2 228	1 360	2 414
Swaziland	6 707	9 906	14 986	8 480	2 328
Argentina	14 828	9 129	8 276	1 485	1 080
Chile	70	363	18	176	105
Mozambique	240	669	1 016	840	89
Uruguay	213	140	-	-	-
Others	255	251	-	457	721

*Extra-EU imports and imports from EU producer countries (Spain, Cyprus) /
Source: EUROSTAT

Other West European countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	9 880	8 767	8 393	8 786	8 661
Switzerland	8 554	7 434	7 174	7 445	7 321
Norway	1 327	1 333	1 219	1 341	1 340

Source: COMTRADE

Russia - Imports - Main supplier countries					
000 tonnes	2009	2010	2011	2012	2013
Total	71 262	81 491	94 274	79 075	90 900
Total N. Hemis., incl.	52 705	56 621	65 205	56 215	58 537
Turkey	38 211	43 377	48 811	41 595	43 689
Israel	11 845	11 978	15 581	13 655	13 839
Morocco	544	365	122	660	612
Spain	891	691	678	303	365
USA	1 214	209	13	2	32
Total S. Hemis., incl.	17 963	24 316	27 583	20 580	30 129
South Africa	15 402	19 768	22 492	15 589	25 700
Mexico	1 004	2 704	3 016	4 020	3 303
Swaziland	298	631	910	622	888
Zimbabwe	481	188	262	81	183
Argentina	691	1 025	903	268	55
Others	593	554	1 486	2 280	2 234

Source: COMTRADE

Other East Europe countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total, incl.	32 912	36 548	40 907	42 644	50 495
Ukraine	17 344	20 807	25 691	26 786	31 734
Belarus	4 049	4 385	3 880	4 753	8 316
Serbia	4 569	4 255	4 154	4 322	3 745
Croatia	2 549	2 446	2 729	2 408	2 577
Moldova	1 636	1 703	1 655	1 597	1 755
Bosnia Herzegovina	1 679	1 852	1 695	1 581	1 285
Macedonia	1 086	1 100	1 103	1 197	1 083
Georgia	381	334	536	929	954
Montenegro	330	436	521	507	536
Albania	396	201	257	222	192

Source: COMTRADE

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Japan - Imports - Main supplier countries					
tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	180 378	166 075	168 438	149 567	134 091
Total N. Hemis., incl.	119 320	119 175	113 939	101 061	83 238
USA	115 592	115 350	109 981	96 444	78 598
Israel	3 728	3 825	3 492	2 850	3 120
Turkey	-	-	465	1 639	1 520
Others	-	-	1	128	-
Total S. Hemis., incl.	61 058	46 900	54 499	48 506	50 853
South Africa	57 818	44 602	53 579	48 120	50 853
Swaziland	3 240	2 237	857	-	-
Chile	-	61	60	-	-

Source: Japanese Customs

Other Asian countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	33 483	36 838	42 592	42 242	42 743
China	22 606	23 517	27 538	25 268	25 387
South Korea	5 724	7 861	9 337	10 452	11 580
Singapore	4 022	4 530	4 571	5 252	5 120
Malaysia	1 131	930	1 147	1 270	656

Source: COMTRADE

Persian Gulf - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	20 762	21 044	20 699	22 000	26 960
United Arab Emirates	9 000	8 891	7 698	7 164	10 572
Saudi Arabia	8 500	8 457	9 904	21 510	10 562
Qatar	1 260	1 228	1 377	3 922	3 850
Kuwait	2 002	2 468	1 720	2 345	1 976

Source: COMTRADE



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Lemon

Will 2014-15 be the benchmark season par excellence for the lemon? Production levels – all within average to the nearest 5 % – of the main Mediterranean producer countries would seem to indicate so. The Spanish harvest seems fine, with a level very similar to last season and slightly less than one million tonnes. The slight fall in production of the late variety Verna is being compensated for by an increase in Fino, which makes up practically all the supply at the beginning of the season. The size range appears to be at a better level than last season. Turkey, the number two producer in the region, just like Spain is set for an Interdonato and Kütüden harvest very close to last year's and the average. Finally, Italian production should return to average, down approximately 15 % on last year's very big season. However, the concentration of the supply from January to April could be more marked than in previous seasons.

While production levels are nothing special, the market context is extremely favourable. Firstly, the season finished very early for the Southern Hemisphere, because of the near-historic weakness of Argentinean production (exports half those of a normal season). Hence the Northern Hemisphere sources were able to take over early, and enjoy a healthy head-start on the market (approximately 10 to 15 days for Spain). Secondly, the industrial market is very buoyant, once again because of the scarcity of the 2014 harvest in Argentina. Prices of derivatives are registering a record level corresponding to double those charged one year ago (approximately 5 000 USD for concentrated juice 400 gpl FOB Argentina, and nearly 55 000 USD into Rotterdam for essential oil). So this context should enable the fresh market to remain fairly tight, unless the collapse of the rouble leads Turkish exporters to switch some of the volumes earmarked for Russia back to the Community market.



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An average season, though in a perfect setting... or nearly

Mediterranean lemon

- Growing exports between 0.9 and 1.1 million tonnes
- 63 % of world trade estimated at 1.6 million tonnes
- The world's leading export zone

Lemon – Export forecast
by CLAM country

000 tonnes	2014-15	2013-14	average of the 4 last years	2014-15 comparison with 2013-14	
				2013-14	average
Spain	570	635	529	- 10 %	+ 8 %
Cyprus	7	5	7	+ 43 %	+ 10 %
Turkey	417	421	415	- 1 %	+ 1 %
Greece	7	8	5	- 7 %	+ 39 %
Italy	50	30	30	+ 64 %	+ 67 %
Egypt	32	32	31	0 %	+ 5 %
Morocco	4	4	4	0 %	- 5 %
Total	1 088	1 135	1 020	- 4 %	+ 7 %

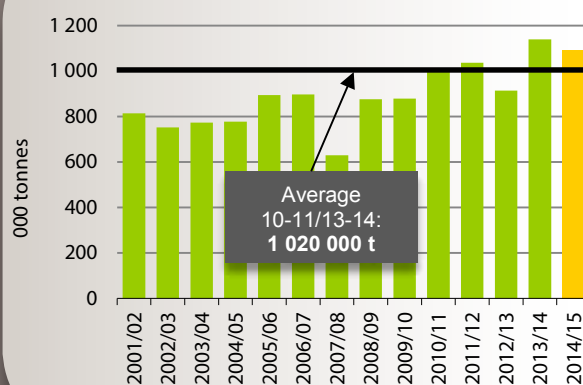
Source: CLAM

Lemon – World – Consumption

	2013 (kg)	Evolution (g)	
		2013/2012	2013/2009
Canada	1.5	+ 62	+ 352
United States	1.6	- 201	+ 205
Japan	0.4	- 36	- 17
EU-15 np	1.6	+ 80	+ 144
EU-12 np	1.9	+ 204	+ 115
Russia	1.5	+ 46	0
Ukraine	1.4	- 12	- 14
Other Eastern countries	1.5	+ 21	- 55

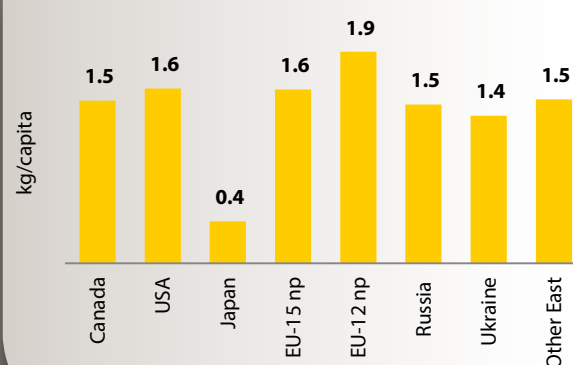
np: non producer countries / Sources: Customs, COMTRADE, professionals

Lemon - Mediterranean - Exports



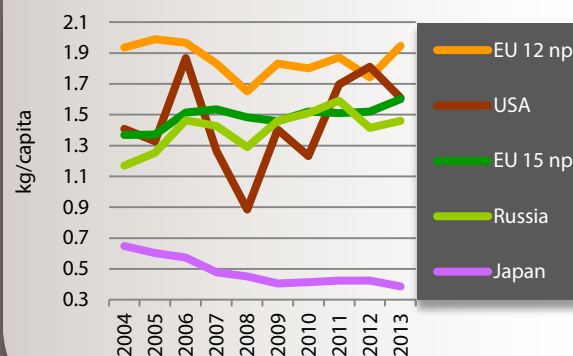
Source: CLAM

Lemon - World - Consumption in 2013



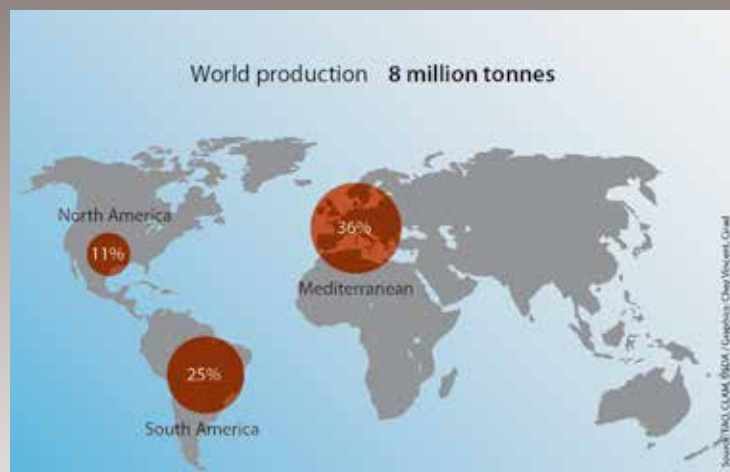
Sources: Customs, Comtrade, professionals

Lemon - World - Evolution of consumption in main markets



Sources: Customs, Comtrade, professionals

LEMON - Production (2012-13)



Lemon - The 8 leading producer countries

tonnes	2012-2013
Argentina	1 325 000
Spain	830 000
USA	827 000
Turkey	624 000
Italy	411 000
China	400 000
South Africa	236 000
Chile	230 000

Sources: FAO, professionals

LEMON - Imports (2012-13)



Lemon - The 8 leading importer countries

tonnes	2013
Netherlands	359 529
Germany	301 900
France	271 128
United Kingdom	223 058
Italy	207 547
Russia	204 951
Poland	198 504
Spain	117 216

Source: national Customs

LEMON - Exports (2012-13)



Lemon - The 7 leading exporter countries

tonnes	2012-2013
Spain	496 000
Turkey	350 000
Argentina	275 000
South Africa	159 000
USA	108 000
Chile	33 400
Italy	29 000

Sources: national Customs, professionals

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USA - Imports - Main supplier countries

tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	37 287	39 789	52 577	51 937	51 297
Total N. Hemis., incl.	20 402	23 184	33 603	33 603	29 013
Mexico	16 954	22 286	23 413	31 014	28 056
Spain	3 159	609	835	1 510	389
Dominican Rep.	285	248	387	191	300
Total S. Hemis., incl.	16 885	16 605	23 674	23 674	12 321
Chile	16 821	16 333	23 413	17 020	11 829
Others	64	272	621	608	492

Source: US Customs

Canada - Imports - Main supplying countries

tonnes	2009	2010	2011	2012	2013
Total	38 450	38 677	43 980	48 645	50 752
Total N. Hemis., incl.	30 365	31 310	32 470	35 471	37 466
USA	30 250	31 109	31 555	30 481	35 105
Spain	115	201	915	3 940	1 618
Turkey	20	88	306	1 050	743
Total S. Hemis., incl.	7 724	6 787	11 013	12 216	12 706
Argentina	6 213	4 606	7 381	9 299	7 263
South Africa	443	1 612	2 789	2 560	5 132
Chile	653	311	435	112	110
Australia	203	169	181	174	104

Source: COMTRADE

South America - Main markets

tonnes	2009	2010	2011	2012	2013
Total	13 911	18 391	29 557	15 536	13 926
Chile	1 319	3 966	17 574	4 497	5 733
Brazil	918	1 248	1 954	2 381	2 712
Colombia	4 639	956	2 993	4 194	1 382
Mexico	453	602	2 398	1 419	1 214
Ecuador	819	4 088	2 356	1 823	1 169
Argentina	4 837	6 524	1 177	331	966
Costa Rica	511	536	802	731	550
Bolivia	415	471	302	160	200

Source: COMTRADE

European Union - Imports - Main supplier countries					
tonnes	2008-09	2009-10	2010-11	2011-12	2012-13
Total	828 036	780 827	787 381	828 096	738 399
Winter total, incl.	578 027	565 295	569 644	587 071	509 146
Spain	439 194	372 445	412 568	442 573	402 382
Turkey	85 519	132 610	110 261	103 455	68 039
Italy	40 889	47 306	37 226	30 731	30 984
Greece	3 481	4 493	3 790	3 804	3 626
Cyprus	2 947	1 658	2 031	2 041	1 805
Portugal	1 007	1 154	942	2 571	1 334
Israel	730	1 099	373	187	377
Egypt	1 001	2 191	554	567	279
Morocco	3 184	1 785	1 771	1 119	196
Iran	63	85	73	12	84
USA	1	428	2	-	31
Summer total, incl.	250 009	215 532	217 737	241 025	229 253
Argentina	182 387	158 391	159 063	182 580	187 449
South Africa	45 633	44 532	45 233	41 385	25 363
Uruguay	10 762	8 064	8 280	9 959	9 194
Chile	9 275	3 211	3 217	5 751	6 333
Dominican Rep.	1 947	1 198	1 943	1 256	632
Brazil	5	136	-	92	249

Source: EUROSTAT

Other West European countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	23 329	24 199	25 172	26 327	27 677
Switzerland	17 483	17 861	18 358	18 998	19 516
Norway	5 431	5 888	6 300	6 781	7 496
Iceland	415	450	514	548	665

Source: COMTRADE

Russia - Imports - Main supplier countries					
000 tonnes	2009	2010	2011	2012	2013
Total	205 726	211 886	223 264	198 585	204 951
Total N. Hemis, incl.	145 109	144 290	156 085	137 942	131 080
Turkey	106 890	117 255	131 314	101 648	109 248
Spain	29 664	16 989	17 801	28 964	16 509
China	2 478	4 995	2 866	3 837	3 682
Morocco	2 925	1 230	2 511	2 172	1 166
Egypt	985	1 412	1 400	601	189
USA	1 302	1 689	188	63	152
Israel	866	719	5	657	134
Total S. Hemis., incl.	60 298	66 848	66 643	60 427	72 448
Argentina	47 192	43 948	40 250	41 853	42 795
South Africa	12 929	20 960	26 094	18 438	28 387
Uruguay	177	1 939	299	136	1 266
Others	318	748	536	216	1 423

Source: COMTRADE

Ukraine - Imports - Main supplying countries					
tonnes	2009	2010	2011	2012	2013
Total	62 787	60 102	62 188	62 319	61 754
Total N. Hemis, incl.	48 682	46 780	46 619	48 739	45 457
Turkey	41 263	41 992	43 102	37 464	39 574
Spain	6 709	3 732	3 516	10 478	5 634
Egypt	619	848	1	722	236
Total S. Hemis., incl.	13 399	12 147	15 021	12 624	16 092
Argentina	12 193	8 741	11 241	9 619	12 274
South Africa	1 205	3 406	3 780	3 005	3 818
Others	706	1 175	548	956	205

Source: COMTRADE

Other East European countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total, incl.	58 583	51 711	58 496	57 413	59 308
Serbia	16 278	13 791	15 971	15 692	16 372
Croatia	12 218	11 025	12 399	12 037	11 499
Belarus	7 984	7 230	6 912	7 503	8 433
Bosnia	9159	7839	8 921	8 220	7 988
Macedonia	5 084	5 000	5 194	4 697	4 939
Georgia	1 441	1 265	2 871	3 141	4 263
Moldova	3 613	3 382	3 523	3 295	3 351
Albania	2 806	2 180	2 706	2 828	2 463
Montenegro	2 781	1 979	1 831	2 068	2 351

Source: COMTRADE

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Japan - Imports - Main supplier countries					
tonnes	2009	2010	2011	2012	2013
Total	51 422	52 618	53 781	53 834	49 229
Total N. Hemis, incl.	36 531	38 459	35 758	38 204	35 268
USA	36 462	36 741	32 099	36 917	34 614
Mexico	69	1 718	3 659	1 287	654
Total S. Hemis., incl.	14 475	14 159	18 022	15 562	13 920
Chile	12 187	12 949	16 767	14 331	13 170
New Zealand	953	786	862	725	529
South Africa	1 335	424	393	506	221
Others	416	-	1	68	41

Source: Japanese Customs

Other Asian countries - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	66 570	67 838	74 996	81 691	91 974
China	34 968	30 211	32 980	34 865	39 251
South Korea	5 147	5 631	7 398	10 664	13 950
Singapore	8 423	8 988	9 932	10 191	12 858
Azerbaijan	2 261	8 745	6 963	6 303	7 742
Malaysia	6 556	6 646	7 559	9 377	7 585
Kazakhstan	7 503	5 000	4 568	4 712	4 616
Indonesia	-	-	1 931	3 413	2 864
Philippines	854	1 277	1 430	1 390	1 610
Armenia	858	1 341	1 176	776	927
Kyrgyzstan	1 100	872	1 059	1 088	571

Source: COMTRADE

Persian Gulf - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	118 561	166 268	176 853	152 490	233 633
Saudi Arabia	42 770	93 613	92 753	71 617	116 645
United Arab Emirates	50 000	44 823	56 048	50 000	82 068
Kuwait	15 000	15 000	11 506	14 869	16 396
Oman	2 214	2 284	3 289	6 516	7 253
Qatar	5 000	6 848	7 328	5 351	6 406
Bahrain	3 577	3 700	5 930	4 137	4 865

Source: COMTRADE

Mediterranean - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	25 858	31 023	34 570	34 984	31 921
Jordan	5 093	7 983	11 469	10 022	14 304
Syria	16 289	19 618	19 909	17 504	8 225
Lebanon	451	891	616	821	4 516
Algeria	1 310	33	1 105	2 744	2 093
Turkey	1 808	1 722	670	3 093	1 983
Tunisia	906	777	800	800	800

Source: COMTRADE

Oceania - Main markets					
tonnes	2009	2010	2011	2012	2013
Total	5 099	6 921	5 823	7 691	9 563
Australia	4 209	6 241	4 988	6 189	8 242
New Zealand	890	680	835	1 502	1 321

Source: COMTRADE



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Impact of the Russian embargo on Community citruses

Beware the indirect effects!



© Denis Loeillet

The announcement at the beginning of August of a one-year Russian embargo on imports of a number of agricultural products from the EU-28 had an explosive effect. The impact on agricultural industries such as dairy products, meat and certain fruits such as the apple, made the headlines in the press. Yet what about Community citruses?

**Russian fruit production 43rd in the world,
with just under 3 million tonnes**

Russia – Top 10 fruit yields (000 tonnes)		
1	Apple	1 302
2	Red currant	355
3	Grape	340
4	Sour cherry	187
5	Strawberry	179
6	Raspberry	137
7	Plum	134
8	Cherry	74
9	Pear	58
10	Apricot	59

Source: FAO, 2011-2012 average

Russia: one of the world's main markets for imported fruits

In terms of fruit trade, Russia is a player of imperial proportions! Its imports, amounting to more than 6 million tonnes, are 4th in the world by value, just behind those of the United States, Germany and the Netherlands. This dominant position is not due only to the 140 million mouths to feed. The severity of the continental climate prevalent across most of the country limits its agricultural potential. Hence despite having proportions worthy of a continent, Russia's fruit production is just 43rd in the world, amounting to less than 3 million tonnes. It comprises primarily apples, red fruits and grapes.

Russian fresh fruit consumption largely dependent on imports

Fruits – Russia – Imports					
en tonnes	2009	2010	2011	2012	2013
Fresh fruits	5 092 092	5 616 237	5 948 913	5 946 007	6 132 073
Apples, pears and quince, fresh	1 421 674	1 607 165	1 580 243	1 692 906	1 733 063
Citrus, fresh or dry	1 280 011	1 491 004	1 660 518	1 580 285	1 703 436
Bananas, incl. plantains, fresh or dry	980 896	1 068 571	1 307 600	1 255 608	1 339 123
Apricots, cherries, peaches, nectarines, plums, sloes, fresh	367 954	437 388	463 365	487 989	460 944
Grapes, fresh or dry	443 963	475 433	445 431	425 427	401 077
Dates, figs, pineapples, avocados, guavas, mangoes, mangosteens, fresh	65 122	90 228	87 806	94 869	102 020
Melons (incl. watermelons) and papayas, fresh	215 972	80 580	58 238	34 038	19 154
Other fruits, fresh	316 500	365 868	345 712	374 885	373 256

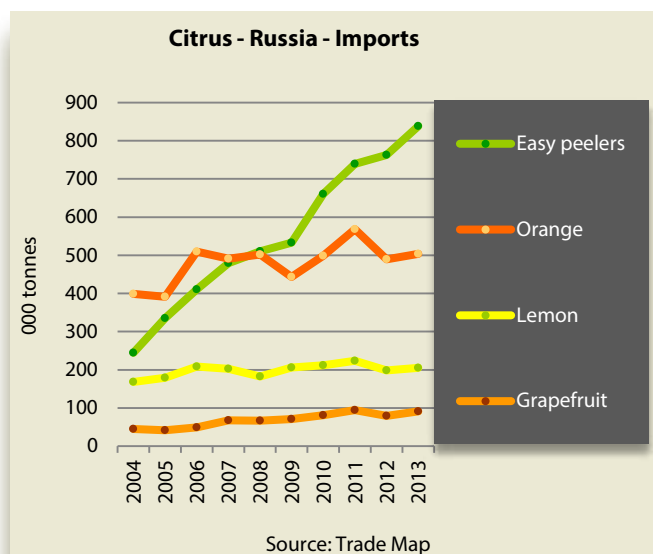
Source: Trade Map

Citrus – Russia – Main supplier countries						
tonnes		2009	2010	2011	2012	2013
GRAPEFRUIT	TOTAL	71 262	81 491	94 274	79 075	90 900
incl. Northern Hemisphere total		52 705	56 621	65 205	56 215	58 537
Turkey		38 211	43 377	48 811	41 595	43 689
Israel		11 845	11 978	15 581	13 655	13 839
incl. Southern Hemisphere total		17 963	24 316	27 583	20 580	30 129
ORANGE	TOTAL	443 549	498 799	568 339	489 149	503 937
incl. Northern Hemisphere total		320 047	327 511	433 964	361 281	365 856
Egypt		128 536	149 905	218 941	197 299	233 934
Turkey		85 378	76 931	102 458	69 888	66 381
Spain		6 007	15 099	22 404	25 008	27 518
Morocco		80 978	63 848	69 968	50 733	24 531
incl. Southern Hemisphere total		122 400	167 606	132 712	126 862	135 000
EASY PEELERS	TOTAL	533 405	660 400	739 500	762 787	838 100
incl. Northern Hemisphere total		468 974	590 776	668 666	696 087	768 300
Morocco		132 458	167 700	198 700	191 800	222 200
Turkey		134 617	162 700	186 900	158 800	200 600
China		79 003	66 700	66 000	87 100	86 900
Pakistan		43 477	82 900	77 058	91 300	80 300
Spain		19 863	27 500	57 740	59 700	47 700
incl. Southern Hemisphere total		62 200	69 624	70 834	66 700	69 800
LEMON	TOTAL	205 726	211 886	223 264	198 585	204 951
incl. Northern Hemisphere total		145 109	144 290	156 085	137 942	131 080
Turkey		106 890	117 255	131 314	101 648	109 248
Spain		29 664	16 989	17 801	28 964	16 509
incl. Southern Hemisphere total		60 298	66 848	66 643	60 427	72 448

Source: Trade Map

Mad about citruses, particularly easy peelers!

The importance of the Russian market is even more obvious if we look just at citruses. Russia absorbs 13 % of the world trade, and is quite simply the world's number one import market, citrus being the most imported family along with pip fruits. This country is a cornerstone of the balance of world trade in clementines and other mandarins, since one in every five easy peelers on the international market is bought by a Russian consumer. Furthermore, while the imported varietal range remains relatively narrow and centred on the basics, the market is upgrading. Price remains a particularly crucial factor, yet the quality requirements are increasingly high, and certain top-of-the-range varieties are now welcome (Israeli Or, Nadorcott, etc.).





Limited overall impact limited for Community citruses

Though not negligible, the direct impact of the embargo on overall citrus exports from the European Community should be fairly moderate. Firstly, approximately one quarter of the 1.7 million tonnes imported by Russia comprises counter-season citrus from the Southern Hemisphere. Secondly, the supply of winter citrus, which represents most of the imports, comes from extra-Community producers such as Turkey, Morocco, Egypt and China, to name just the countries exporting more than 100 000 t. Hence citrus shipments from the Community to Russia have been between 80 000 and 110 000 t for the past two seasons, i.e. 2 % of the total volumes exported by EU-28 producer countries. The main products concerned are easy peelers (between 40 000 and 80 000 t, i.e. approximately 3 % of total Community exports), oranges (approximately 15 000 t, i.e. 1 % of total exports) and lemons (15 000 to 20 000 t, i.e. 3 % of the total).

Citrus – Russia – Imports from EU-28

tonnes		EU-28 export volumes		Share of total exports	
		2012-13	2013-14	2012-13	2013-14
SPAIN	TOTAL, incl.	69 357	58 891	2 %	2 %
	Easy peelers	37 058	25 414	2 %	2 %
	Lemon	16 143	20 036	3 %	4 %
	Orange	15 939	13 258	1 %	1 %
CYPRUS	TOTAL, incl.	18 683	9 570	37 %	25 %
	Easy peelers	18 247	9 154	62 %	46 %
GREECE	TOTAL, incl.	13 276	5 569	3 %	1 %
	Easy peelers	12 257	4 551	13 %	5 %
CROATIA	TOTAL, incl.	9 581	2 948	27 %	13 %
	Easy peelers	9 581	2 948	27 %	14 %
ITALY	TOTAL, incl.	2 230	923	1 %	0 %
	Easy peelers	1 948	674	2 %	1 %
CITRUS	TOTAL, incl.	113 332	77 968	2 %	2 %
	Orange	17 458	14 594	1 %	1 %
	Easy peelers	79 158	42 741	4 %	2 %
	Grapefruit	356	451	1 %	1 %
	Lemon	16 360	20 183	3 %	3 %

Source: Eurostat

More significant consequences for certain industries in Cyprus, Greece and Croatia

The impact is nonetheless considerable in certain particular cases. Cyprus is losing a market absorbing between one quarter and just over one third of its export potential, i.e. between 40 000 and 50 000 t. The blow is particularly heavy in easy peelers, with 45 to 60 % of exports going to Russia. Greece is also losing a easy peelers outlet of 5 000 to 12 000 t, and the small Croatian industry an outlet of between 3 000 and 10 000 t (i.e. between 15 and 30 % of its potential). Finally, Spain should also be mentioned. Although the volumes lost amount to just 2 % of total exports, they nonetheless represent between 60 000 and 70 000 t by absolute value (of which 25 000 to 40 000 t for easy peelers alone).



Major indirect effects

While the indirect effects seem moderate, except for particular cases, we should not under-estimate the consequences of the at least partial transfer onto the Community market of other products traditionally exported to Russia. The case of the apple is obviously the most critical: of the 1.3 million tonnes imported annually by Russia, approximately 750 000 t comes from the European Community (of which 600 000 to 700 000 t from Poland). What will be the outlet for this produce, in the context of a particularly big harvest this season in Europe and in the United States, and of a saturated industrial outlet? The impact on the labels of the other fruit section staples, such as the banana or citruses, could be considerable, particularly from January to May when European exports to Russia peak ■

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Israeli citrus industry

In-depth restructuring
to combat growing constraints



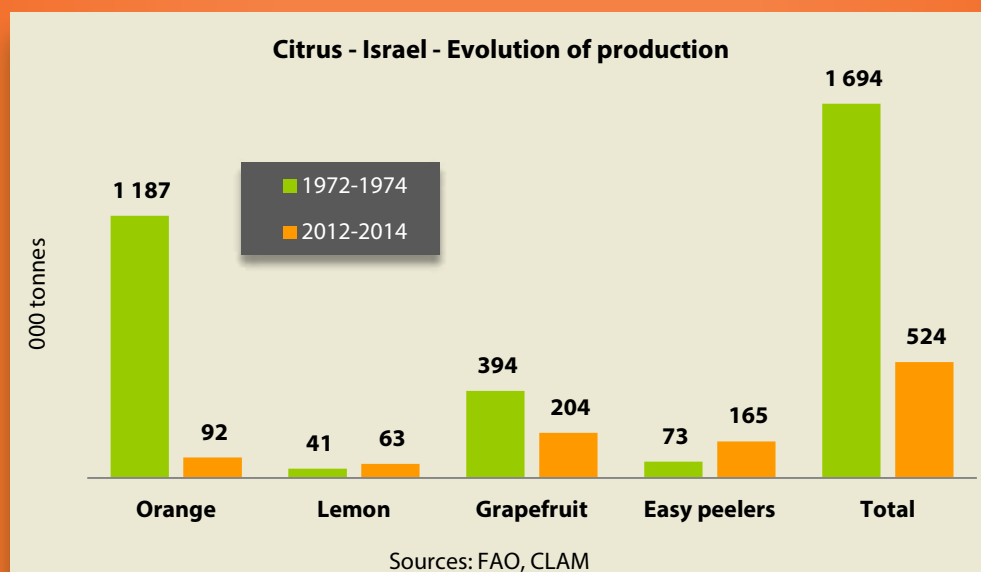
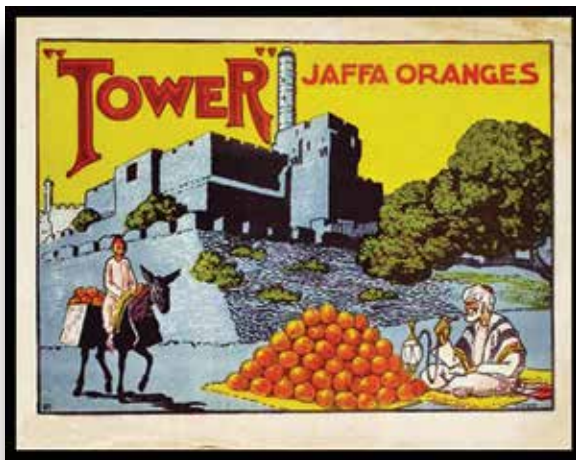
“Reinvention every day” must have been the guiding principle adopted by Israel’s citrus producers, who have had to completely overhaul their production model over the past few decades to adapt to the new realities of the international market, and to an increasingly tough pedoclimatic and social context. Fruitrop offers you this review of an industry under heavy constraints, which has no choice but to keep moving forward.

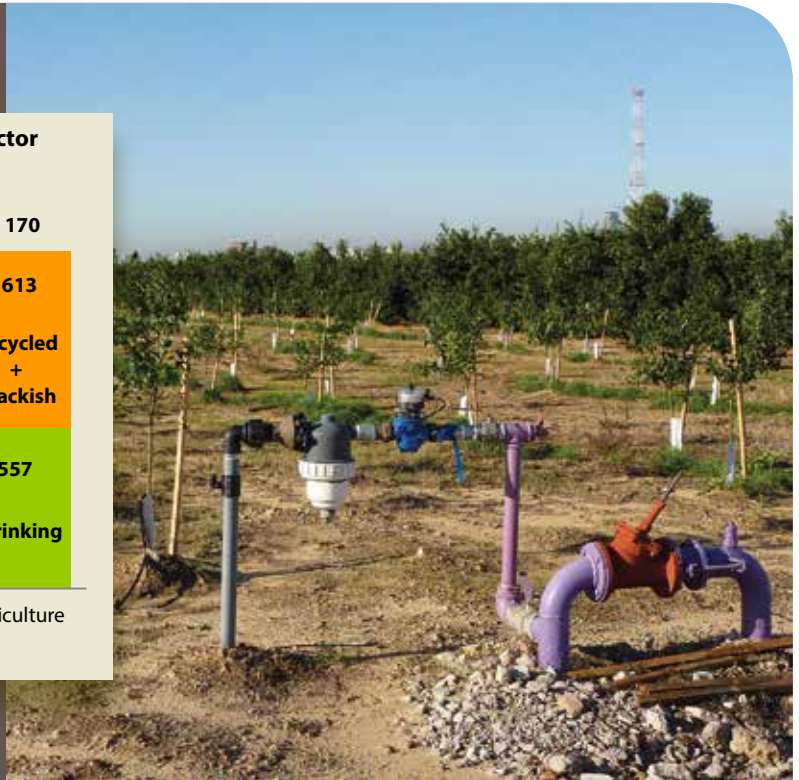
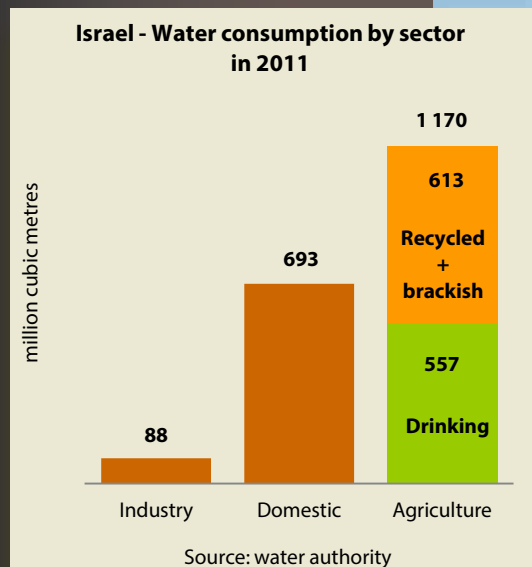


A long dark spell between the early 1980s and the beginning of the new millennium

"Jaffa": this Israeli umbrella brand was such a vital player on the European markets during the 1970s that it was very much synonymous with citrus for many consumers. At this time, Israel was the world's third biggest exporter behind Spain and the United States, with volumes of between 650 000 and 700 000 t per season, mainly intended for Europe. This was a real feat if we bear in mind that two-thirds of the country are classified as an arid or semi-arid zone. But the skies gradually clouded over during the 1980s and 1990s.

Competition in Europe saw constant growth, with in particular the entry into the Common Market of big producer countries like Spain. In addition, the availability of certain major production factors became scarce. Hence the citrus growing industry entered a period of outright recession, with the cultivation area gradually shrinking, down from 42 000 ha at its peak in the late 1960s to 17 500 ha in 2003. The country's specialties, which had enabled the Israeli citrus growing boom but had become unprofitable, were the hardest hit by this uprooting trend. The most iconic of them, Shamouti, and more generally oranges as a whole, paid the heaviest toll. The cultivation area of this varietal group went from more than 24 000 ha in the late 1970s to 4 000 ha now (just under 1 500 ha for Shamouti). The white grapefruit also bore the consequences of this rationalisation trend, uprooted or replaced on a large scale by Sunrise (Star Ruby).





Solutions for better access to key production factors

Two major challenges needed to be faced before things could start to pick up. The drastic fall in agricultural water allocations was definitely the most concerning point. A trend attributable to the deterioration of annual rainfall since the late 1990s and to increasing demand for drinking water, with the population having more than doubled between 1970 and today (5 million more inhabitants). It was desalination and above all recycling of household wastewater which enabled things to be turned around. Currently, re-use of nearly 80 % of the country's wastewater (100 % in the Tel Aviv region) covers over one quarter of the overall requirements, and provides more than 50 % of agricultural water, at a price practically less than half the rate of drinking water.

The shortage of agricultural labour is the other black spot which Israeli producers had to face from the early 1990s, especially after the closure of the territories from where many of the agricultural labourers came, following the two intifadas. The problem was resolved by bringing in foreign workers, primarily from Thailand.

**Citrus – Israel – Planted area census**

Citrus species	hectares	Share by species
Easy peelers	9 417	48 %
Or	> 5 000	
Orange	4 000	21 %
Grapefruit	3 300	17 %
Lemon, lime	2 144	11 %
Various	600	3 %
Total	19 461	

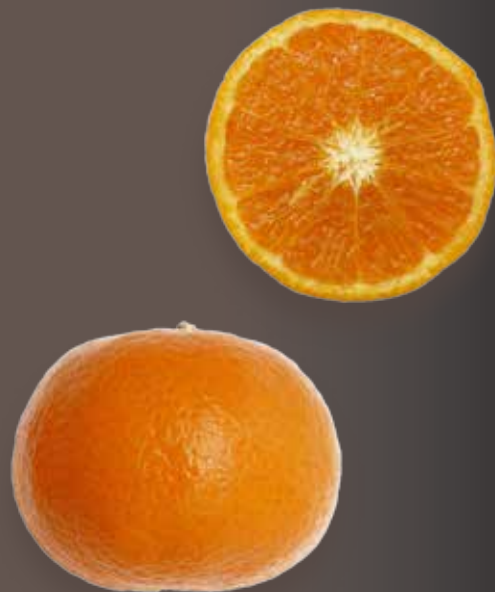
Source: Plant Board 2014

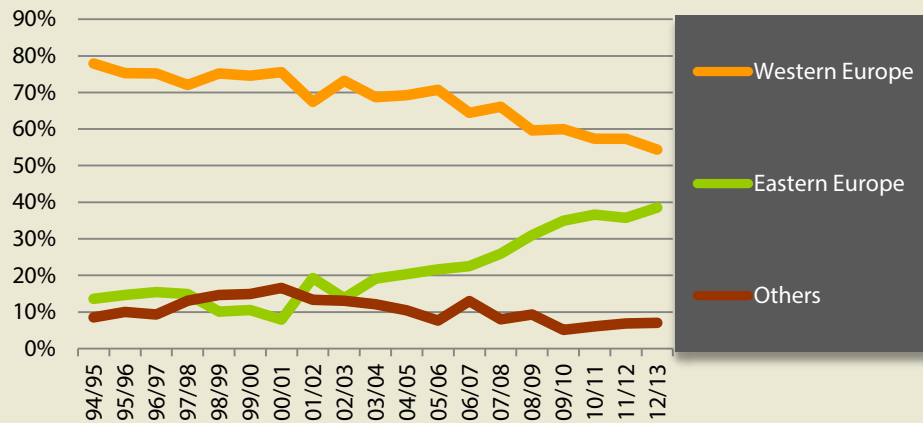
Stock reconstruction based on easy peelers as radical as it was redeeming

Yet it was also the launch of Or, the premium easy peeler variety developed locally by the Volcani Center, which helped Israeli citrus growing to bounce back. This term is no exaggeration since surface areas, which had fallen to 17 500 ha in 2003, have started growing again, now registering a level of approximately 19 000 ha. This variety is to this day a benchmark on the late easy peelers market. On its own it represents more than a quarter of Israel's cultivated surface areas, nearly 50 % rebuilt on easy peelers, a varietal group providing the high economic returns essential to citrus growing under the constraints inherent in Israel. Traditional varieties such as Minneola, Nova (Suntina) or Ortanique (Mandora/Topaz) represent less than 7 % of surface areas. Oranges come in second position, with just over 20 % of surface areas. There too, the traditional varieties (Shamouti, Valencia or Jaffa Late) are diminishing in favour of early Navel (Newhall) and late Navel. The grapefruit still represents 17 % of surface areas (30 % white and 70 % coloured), and the lemon, aimed at the local market – apart from exceptional exports – approximately 11 %. Hence the cultivation stock in the hands of Israel's 2 800 citrus producers is young (three quarters of the trees were planted after 2000), and completely restructured.

The easy peeler variety 'Or'

'Or' is a hybrid of 'Temple' and 'Dancy' and was bred by the Volcani Center in Israel. It is a medium-sized fruit recognisable by fairly marked grooves running from the base of the peduncle and the occasional presence of a small fruit embryo. The skin is fairly pale orange, of medium thickness and is easily removed. The segments are soft and juicy with few pips. The flavour is very pleasant thanks to a good sugar:acid balance.



Citrus - Israel - Shares of the different export markets

Source: Customs



Reducing dependence on the European market

The industry has also worked downstream to reduce its heavy dependence on the Community market. Three quarters of Israeli exports were intended for the Old Continent in the early 2000s. Their share in recent seasons has barely exceeded 50 %. Trade diversification efforts have mainly focused on the East European markets. Russia is currently Israel's leading market, ahead of the United Kingdom and France. Exports intended for these countries, combined with those to Ukraine and the Baltic States, represent more than 20 % of total volumes (mainly easy peelers, including the premium variety Or, and grapefruit). Shipments to Scandinavia are also tending to become significant. Asia remains a strategic avenue, and Israeli exporters have not spared their efforts in getting to grips with the particularly restrictive sanitary protocols demanded by most countries in the zone. In particular, Israel is one of the few countries in the world able to export its produce to Japan without an outgoing inspection by the Japanese sanitary authorities. Nonetheless, sales remain modest.

A new reconversion trend still in progress

As we have seen, Israeli producers have come a long way in the space of around thirty years. However, they must continue to move forward to remain competitive, given the production constraints and the changes both in demand and competition. The number one challenge is now the soaring production costs, which have gone up by approximately 30 % in five years, according to professional sources. They now exceed 10 000 USD/ha. This problem is all the more weighty since the shekel's strengthening against a good many currencies is weighing down on economic returns to producers. The Israeli currency climbed approximately 20 % against the euro and the dollar between 2009-2010 and the beginning of 2014. And now it is the turn of the coloured grapefruit to bear the consequences of a large-scale rationalisation trend. The drastic fall in demand and rise to prominence of competitors such as Turkey have meant that many plantations are no longer profitable. Surface areas, which had seen very considerable expansion after the collapse of Floridian production, are now going the other way: approximately 700 ha were uprooted between 2012 and 2014, i.e. just over 30 % of the cultivation area. Producers hope that this radical fall will be sufficient to restore an economic balance, before resorting to further uprooting if necessary.



Easy peelers still with the wind in their sails, though producers are more cautious



Of course, it is the easy peeler family which has taken advantage of the surface areas vacated by the grapefruit. However, the planting rate has slowed down considerably since 2013. Or remains in favour with the producers, though they are more cautious since the current cultivation area will provide an ample production of approximately 200 000 t by three to four years' time. Furthermore, there is scarcely any alternative in terms of variety. The main new cultivars, on which producers now have some perspective, have their strong points, but are not entirely satisfactory. Tami, a hybrid of Temple and Michal bearing fruit in mid-season, struggles to colour naturally. Odem, derived from a mutation of Orah and Shani, often contain pips. The same observations can be made with the grapefruit: Aliza (hybrid of Orah and Chandler) has some particularly attractive characteristics

(lack of bitterness, low furanocoumarins content making it compatible with statin medications, original orange colour), but large promotion budgets would be required to publicise this very particular fruit. Hence it is primarily on Or that planting efforts should continue to focus for the forthcoming seasons (after completely halting for religious reasons in 2014-15), though still at a moderate tempo.

Nonetheless, there can be no doubt that valuable varieties will emerge in the medium term. Very many cultivars, selected for their regular productivity, being pip-free, their flavour, their resistance to *alternaria* and preservability are currently being tested. Israeli varietal research is among the most creative in the world, particularly thanks to the existing relationship between research (Volcani Center) and private partners, in the framework of varietal development projects. Meanwhile, it is once again on Or that the economic balance of the Israeli citrus growing industry will rest over the coming years ■

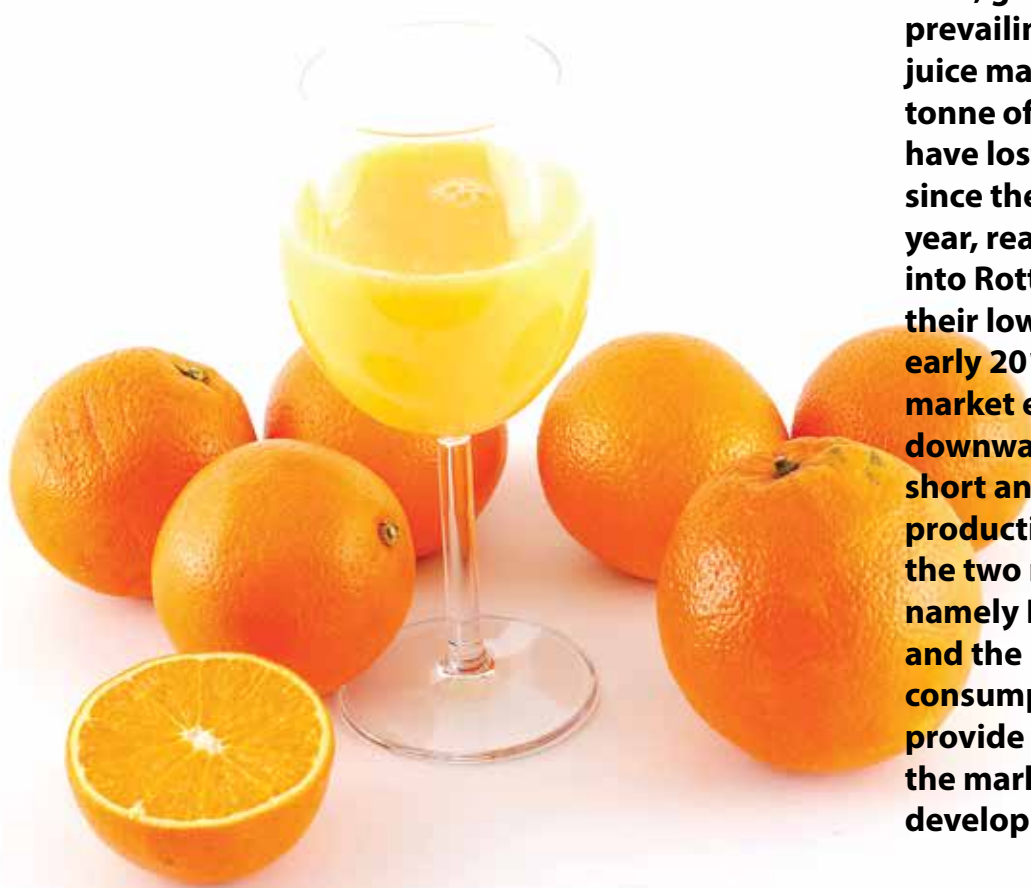
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World orange juice market

A fall in rates against the trend?

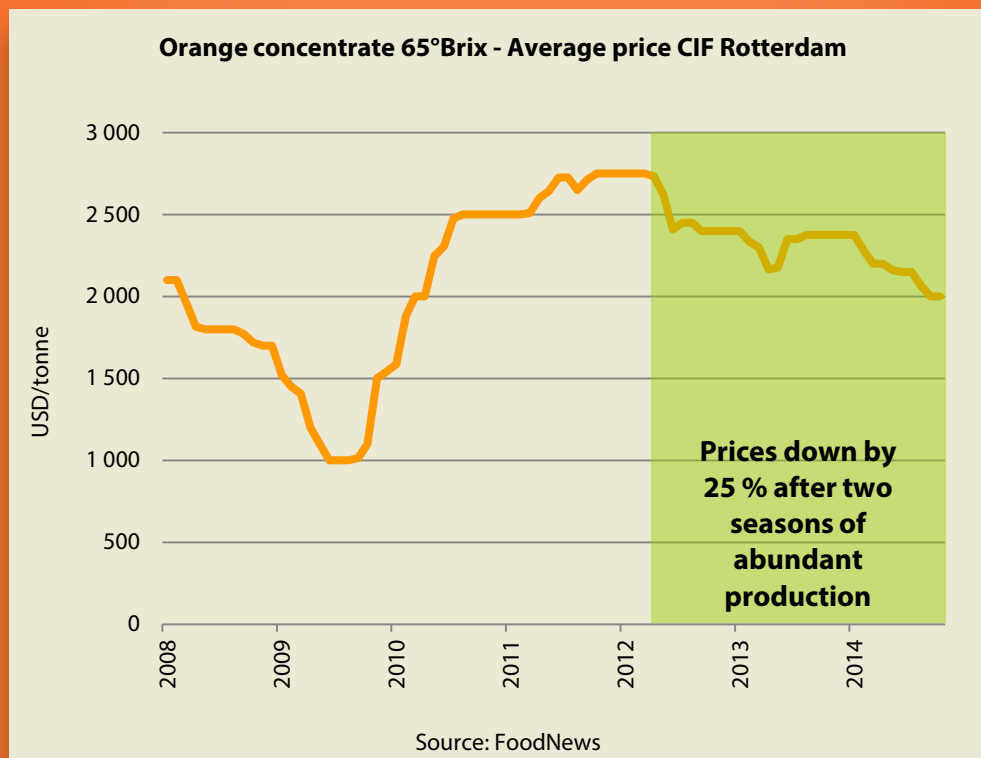
After several years of near bliss, gloom is once more prevailing on the orange juice market. Prices per tonne of concentrated juice have lost nearly 400 USD since the beginning of the year, reaching 2 000 USD into Rotterdam in October, their lowest level since early 2010. Has the market entered another downward spiral? The short and medium-term production forecasts of the two main protagonists, namely Florida and Brazil, and the latest worldwide consumption statistics, provide a clearer picture of the market's medium-term development.

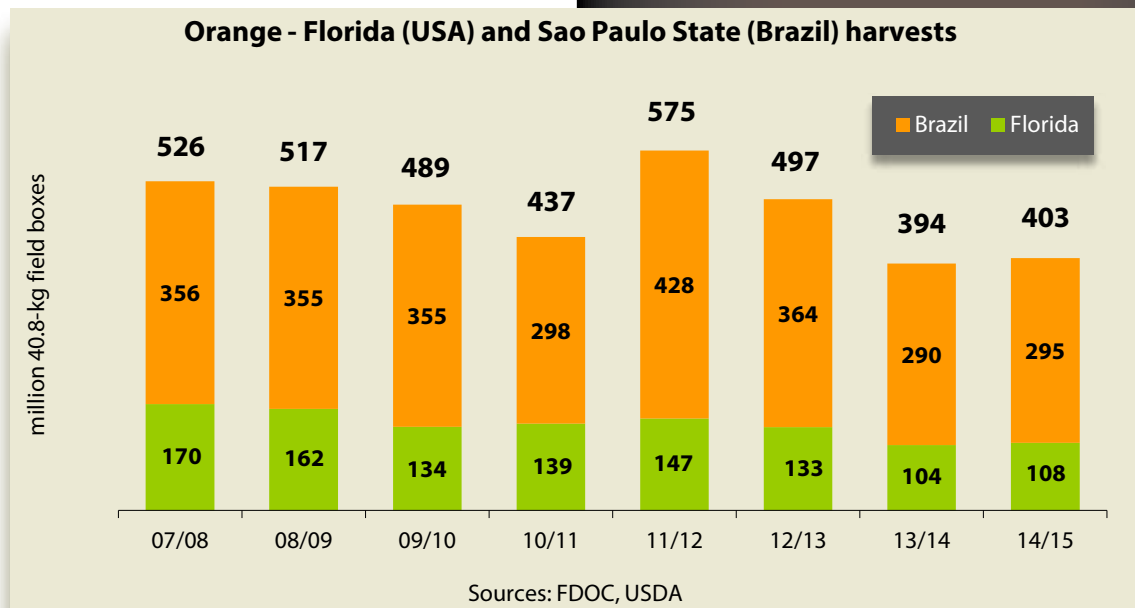


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Floridian production at its lowest level for 50 years

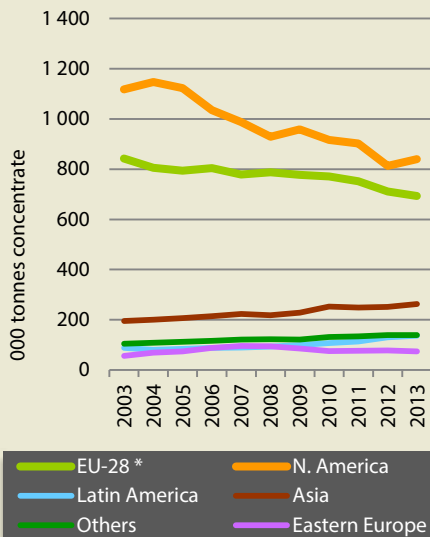
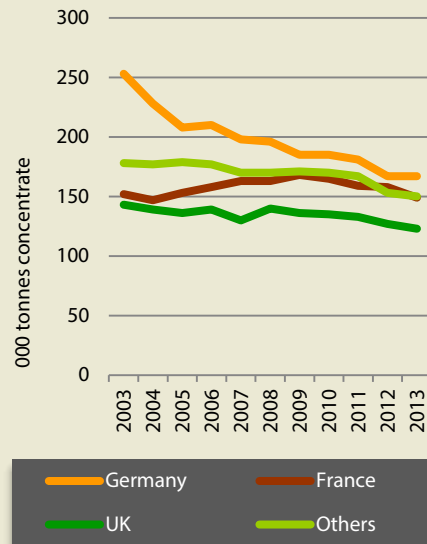
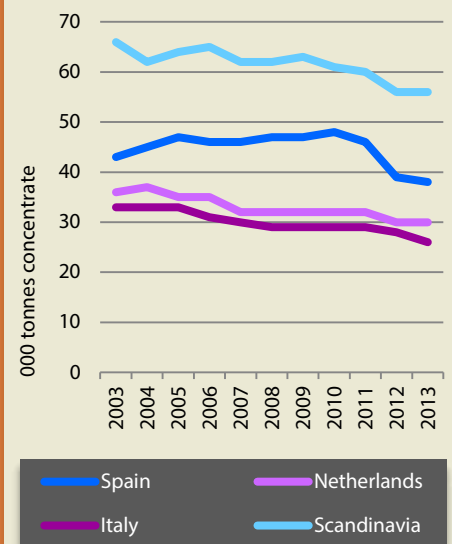
There is no risk of Floridian production, estimated at 108 million ninety-pound field crates (i.e. approximately 4.4 million tonnes) by the USDA, weighing down the market in 2014-15. Despite a slight rise of 3 % from last season, the production of the Sunshine State is still 20 % below average for the past four years, and is even approaching its lowest level for 50 years, a poor record largely due to the increasingly heavy consequences of greening. And the performance of previous seasons is even leading to questions whether this already very gloomy estimate is actually over-optimistic: the differences between initial forecasts and final harvests have exceeded 20 million boxes in recent seasons, because of the extent of physiological dropping occurring during autumn and winter.





Recovery expected in Brazil, at least on paper

The initial forecast distributed by Citrus BR in early May was reckoning on a production from the Sao Paulo region of approximately 309 million field crates (just over 12.5 million tonnes) – nothing to celebrate despite a small increase of 6 % from last season. Firstly, this level is still 10 % below average for the past four seasons. Secondly, it seems increasingly clear that it will never be reached. The drought, deemed “unprecedented” by some, which is ravaging in particular the centre of the Sao Paulo region, could lead to a considerable revision of the forecast, since fewer than 20 % of Brazil’s orchards are irrigated. Furthermore, the GCONCI consultancy group is already reckoning on a reduced harvest of 258 million field crates (10.5 million tonnes). In any case, even in the more than unlikely event of the Brazilian harvest meeting the higher estimate and zero physiological dropping in Florida, the combined production of the two leaders would register a level 13 % below the four-year average!

Orange juice - World Consumption**Orange juice - EU Consumption****Orange juice - Details for other EU countries - Consumption**

Status quo for demand in 2013, a deceptively reassuring year

So it is once more demand that explains the major slide in rates. It is true that the background trend remains very poor worldwide, despite a slight cyclical upturn in 2013. In ten years the market has dropped by 10 %, i.e. approximately 260 000 t concentrate equivalent. The blame lies with the United States, where the 2014 figures have extended the downward sales trend of the past decade, demonstrating that the recovery of 2013 was utterly temporary and fragile. It also lies with Europe, the world's number two consumption market, since the big countries on the Old Continent are without exception exhibiting falling consumption, clearly so in certain cases. Sales have fallen by one third in ten years in Germany, the number one market in the zone. In France, volumes consumed have gone down 10 % in four years, while sales were holding up well until the end of the last decade. As for the United Kingdom, a regular falling trend has brought down the volumes consumed by 15 % in ten years. The Spanish market has literally plummeted since the economic crisis, losing more than 20 % of its volumes in three years, while Italy seems to be following in its footsteps.



Relays for growth, but too small-scale

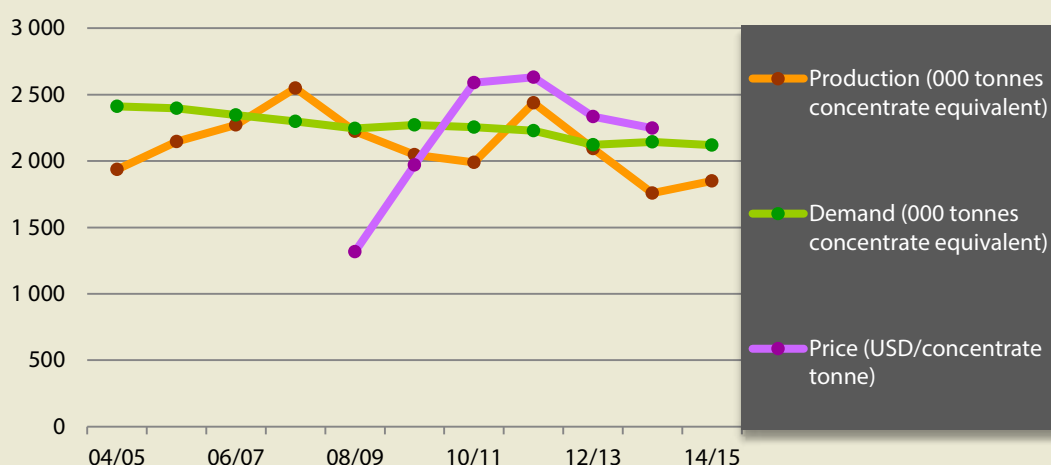


True, the dynamic on certain emerging markets remains lively. Despite falling sales in Japan, Asia is seeing rapid progress thanks to the booming Chinese market. Similarly, the sales invigoration programmes in Brazil are driving the South American market upward, whereas Argentina is rising just as steadily. However, these trends are completely unable to compensate for the decline of the North American and European giants, which on their own absorb 70 % of the world supply. Overall, consumption has been falling steadily by 26 000 t concentrate equivalent per year for the past decade.

Concentrated juice production well below demand one year in every two!

Now it remains to consolidate supply and demand, a complex statistical task given the various sources available and the conversions to make to obtain consistent data, but oh how rewarding in terms of lessons. It appears that juice production exceeded demand just twice in the past ten years (in 2007-08 and 2011-12). There has been a major production shortfall (of between 200 000 and more than 400 000 t concentrate equivalent) one year in every two! The 2014-15 season also promises to be well in shortfall: even if we take the higher production estimates for the two giants, the shortfall would be around 270 000 t concentrate equivalent in 2014-15, assuming demand falling by approximately 25 000 t of concentrate per year (i.e. 230 000 to 280 000 t fresh fruit equivalent, depending on the yield counted).

Orange juice - World supply and demand and concentrate price



Sources: USDA, Markestraat, FoodNews

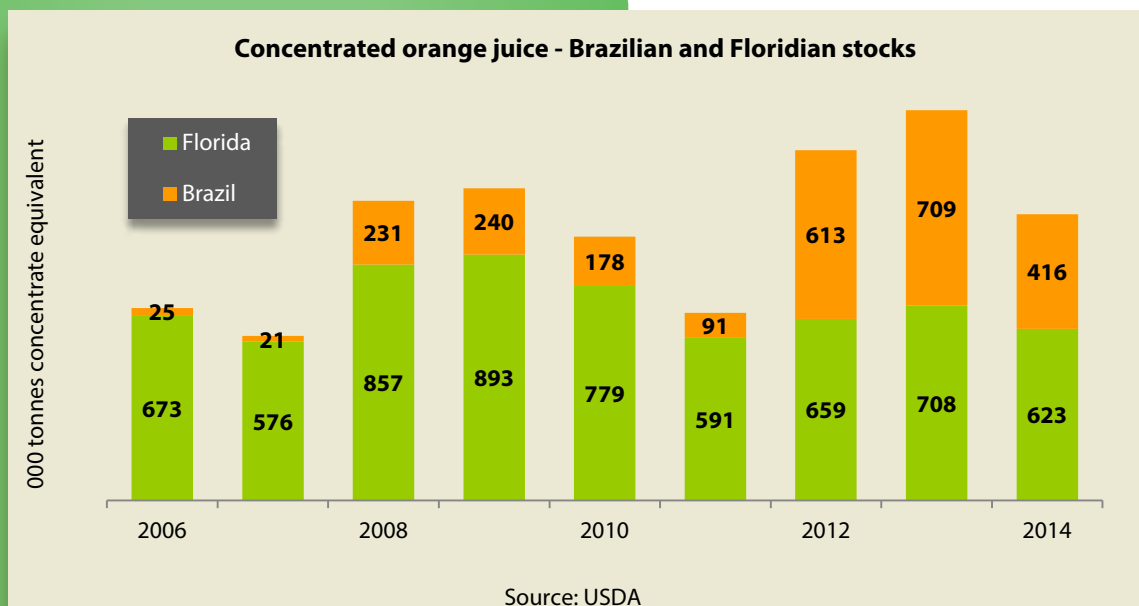
Market still weighed down by heavy stocks

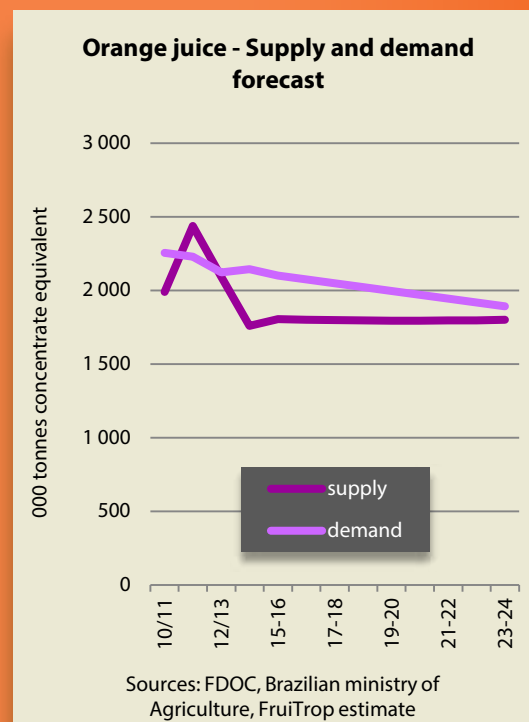
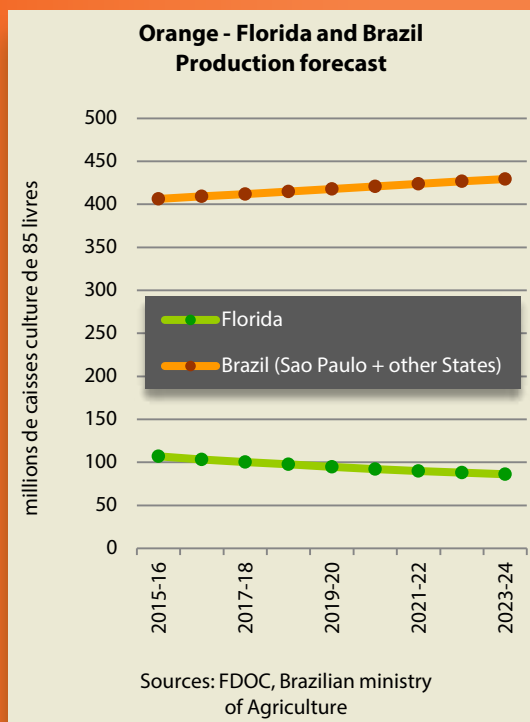
It is the weight of the stocks which explains the sluggishness of the market. For Brazil alone, they amounted to 766 000 t concentrate equivalent in summer 2013, after the country's last two big production seasons (2011-12 and 2012-13): a level corresponding to more than half a year of exports! Nonetheless, the situation seems to be clearing up. Stocks dropped by more than 230 000 t in 2013-14, and should do the same in 2014-15, given the expected production from the two leaders. Several sector analysts are forecasting a level of approximately 350 000 t at the end of the 2014-15 season.

It is difficult in this context to understand the current trend in rates. How can we explain a fall of 15 % since January, and a market continuing to drop over the long term, while a clear shortfall between supply and demand will remain in 2014-15, and the weight of stocks will be considerably eased from last season? It has to be observed that the markets are once more giving much more weight to falling demand, with the message hammered home by most of the professional press, than to the supply. Should we see in this a desire by the handful of sector giants to keep rates low in order to force small producers out of the trade, in order to even further dominate the supply and eliminate the orchards with the lowest sanitary controls? The multi-million dollar takeover bid for Chiquita by the Cutrale/Safra consortium indicates that the business is still highly profitable for the juice manufacturers.

Less and less from Florida, pending the results of the research efforts

The medium-term production projections are clear, showing that volumes available for processing should remain very limited over the next ten years. There is no bounce-back expected in Florida. According to the latest scenario put forward by FDOC, production should continue to drop for the next ten years at least, reaching 86 million field crates in 2023-24 (as opposed to a forecast of 108 million this season). Maintaining a good level of economic returns for the producer has only slowed down the phenomenon of cultivation area shrinkage. The planting rate remains very low (approximately 2 % per year), and half that of cultivation area shrinkage (approximately 3.5 % per year). Yet the major consequence of greening, which has become omnipresent (between 40 and 70 % of trees affected), is the collapsing trend in volumes produced, because of the small fruit size range and a dropping rate which has gone from 10-15 % to 25 %, depending on the varieties. Massive efforts are still being made to find resistant varieties, thanks to massive State budgets (30 million USD programme announced this summer), producers and also the support of big groups such as Coca Cola (500 000 USD per year since 2011). These efforts are starting to bear fruit: five rootstocks exhibiting good resistance in certain soil types (though not the sandy soils of central Florida) were just released in early October by the USDA. However, it will take years before they have been reproduced, planted and have borne their first fruits. Furthermore, the resistance of the rootstock does not mean resistance of the fruit-bearing part.





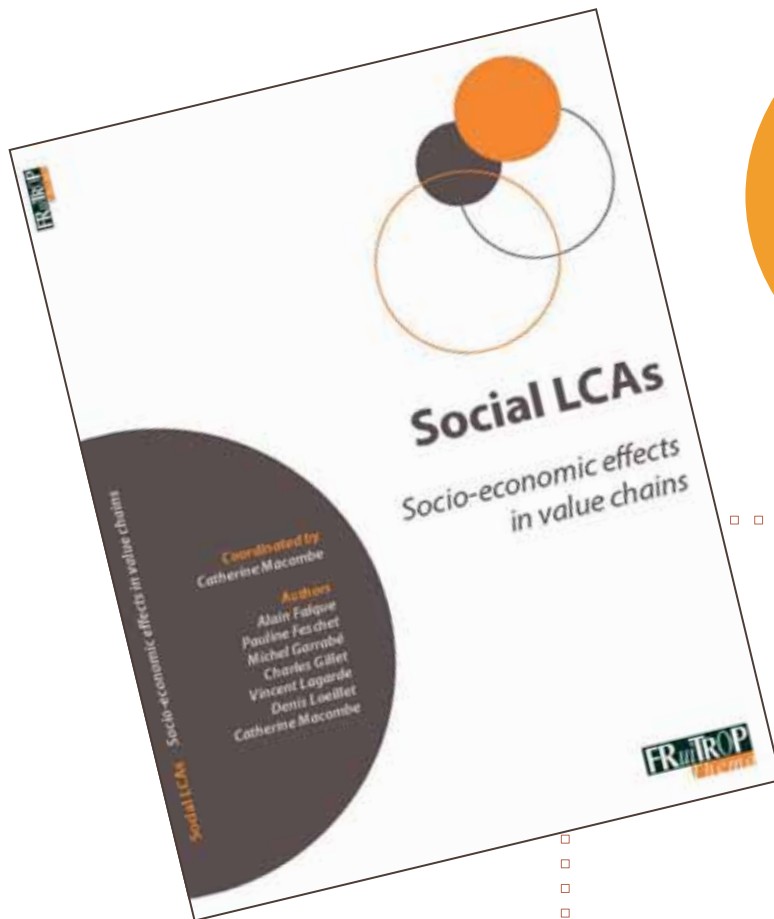
Brazilian production heading for stability as things stand

Brazil's production potential is just as seriously afflicted. The inspection methods developed in recent years are helping contain greening, but the small producers cannot afford them. Hence the latter are continuing to leave the business en masse: reportedly 4 000 in the past two years. Consequently, the cultivation stock lost more than 60 million trees between 2010 and 2013, and is increasingly concentrated in the hands of the big producers (plantations of more than 200 000 trees reportedly represent more than 40 % of total surface areas). In this context, the ten-year production projection, just issued by the Brazilian Agriculture Ministry, is reckoning on only a slight production rise of less than 1% per year. According to this document, the country's total harvest should hold up at between the 400 million field crates from 2013-14 and the 430 million expected this season.

Juice production to maintain a considerable shortfall in the medium term

If we accept the projections for Brazil and Florida, assuming demand maintaining its very steady rate of fall of recent years (- 26 000 t concentrate equivalent per year), juice production should remain well below world demand. Considering stable production by the rest of the world, it would fluctuate around a level of approximately 1.8 million tonnes throughout the period, with demand gradually waning by 2.1 million tonnes in 2015-16 to just under 1.9 million tonnes in ten years; which is reason to continue large-scale destocking over the coming years. True, these are rough projections, and the Chinese production trend in particular is still to be incorporated (see **FruiTrop** 216). However, they at least have the merit of showing that the balance is, currently and over the coming years, tilting towards a shortfall of fruits for processing than lack of demand, and that the pressure from stocks should automatically ease as time goes on. This hypothesis argues in favour of an upturn in rates! In any event, this is a necessity for Brazil's small and medium producers ■

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- ▶ You are making decisions about the future of industrial sectors.
- ▶ You would like to understand the social consequences of these decisions.
- ▶ You belong to one of the following groups: entrepreneurs, public decision-makers, public authorities, consultants, researchers or students.

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Citrus pests and diseases

There are numerous pests and diseases, which can have serious economic impacts, possibly requiring quarantine (material subject to regulations concerning movement) and the prohibition of exports to other production zones to avoid the spread of harmful organisms. The use of tolerant rootstocks is an effective measure in the control of several organisms, but the choice of variety is often dictated by the market. In addition to the production of healthy plant material, the control of these pests and diseases generally combines genetic, biological and chemical components in an integrated control framework.



Citrus diseases	Tristeza Virus: <i>Citrus Tristeza Closterovirus</i>	Huanglongbing (greening) Phloem: <i>Liberibacter africanum</i> , <i>L. asiaticum</i>	Citrus canker Bacterium: <i>Xanthomonas axonopodis</i> pv. <i>citri</i>
Distribution	All regions except some Mediterranean countries.	Asia, subtropical and tropical Africa, Middle East.	Asia, South America, Florida, certain regions of Africa.
Symptoms	Dieback of varieties grafted on sour orange (except lemon trees), vein clearing and stem pitting.	Shoot yellowing, leaf mottling, small poorly coloured fruits.	Corky pustules on leaves and fruits.
Susceptible species	Lime, orange and grapefruit trees.	Broad host spectrum. Affects orange and mandarin above all.	Broad host spectrum. Above all grapefruit, orange, lime and some mandarins.
Transmission	Aphids (<i>Aphis gossypii</i> , <i>Toxoptera citricida</i>).	Psyllas (<i>Diaphorina citri</i> , <i>Trysoza erytrae</i>).	By air and water.
Economic impacts	Loss of trees and decreased production.	Tree dieback, shorter orchard life.	Harvest loss.
Quarantine organism	Present in the EU.	Not present in the EU.	Not present in the EU.



Citrus pests	Fruit fly Diptera Tephritidae: various species of the genera <i>Ceratit</i> , <i>Anastrepha</i> , <i>Dacus</i> , <i>Bactrocera</i> , etc.	Thrips Thysanoptera: thripidae. <i>Scirtothrips</i> spp. (<i>S. aurantii</i> , <i>S. citri</i> , <i>S. dorsalis</i>)	Diaspine Hemiptera: Diaspididae. Genera <i>Aonidiella</i> , <i>Unaspis</i> , <i>Chrysomphalus</i> , <i>Cornuaspis</i> , etc.
Distribution	American continent: <i>Anastrepha</i> . Africa: <i>Ceratit</i> , <i>Dacus</i> . Asia-Pacific: <i>Bactrocera</i> .	Variable according to the species. Present in the Mediterranean area: <i>Tetranychus urticae</i> , <i>Panonychus citri</i> .	Variable according to the species. Present in the Mediterranean area: <i>Aonidiella aurantii</i> , <i>Cornuaspis bekkii</i> , etc.
Symptoms	Holing caused by females laying eggs in the fruits.	Greyish patches in a ring around the fruit stalk (thrips feeding on young fruits).	Scale on leaves, shoots and/or fruits, trees weakened in case of large populations.
Susceptible species	Mandarin, orange, grapefruit. Mandarins and thin-skinned oranges susceptible.	Orange, mandarin, tangor, tangelo, lemon, etc.	Broad host spectrum.
Economic impacts	Harvest loss.	Deterioration of the external appearance of fruits.	Deterioration of the external appearance of fruits.
Quarantine organism	Not present in the EU.	Not present in the EU.	Not present in the EU.



Citrus cultivation

Photos © Eric Imbert

The world's leading fruit crop grown between the latitudes 40° N and 40° S, citrus fruits were domesticated in Asia. Ancient texts refer to sour citrus fruits in India from 800 BC onwards, and mandarins, oranges and grapefruit in China at the time of Confucius. Trade and military conquests contributed strongly to the spread of citrus. This was first overland via Asia Minor and the Middle East as Roman and Greek influence spread (citron fruit, bitter orange) and then through Islam and the Crusades (sour citrus). The citron fruit was the first species grown in the Mediterranean several centuries before the Common Era. New citrus fruits

*such as sweet oranges were introduced around the Mediterranean basin in the sixteenth Century thanks to Portuguese navigators and the possibility of direct maritime trade with the Far East and China. These species were then disseminated in Africa and America. The first mandarins were introduced in the Mediterranean region much later. The fruit is mentioned at the beginning of the Nineteenth Century in Italy and not until 1850 in North Africa. However, the Mediterranean has been an important diversification zone for the three most important economic species—orange, mandarin and lemon. The grapefruit, *C. paradisi*, a natural hybrid of shaddock, is one of the few commercial citrus fruits to have originated in the Caribbean.*

Agronomy

The most suitable soils for growing citrus are slightly acidic and well-filtering. The choice of rootstock is one of the essential factors for success, giving tolerance or resistance to biotic (soil pests and diseases, degeneration diseases) and abiotic constraints (acidic or alkaline soils, salinity, reaction to cold or drought, etc.). It strongly influences factors such as vigour, the start of production and fruit yield and quality. The risk of contamination by tristeza has led to favouring *Poncirus* hybrids (Citrange, Citrumelo) as a replacement for sour orange. Disease-free plant material must be used. Today, new rootstocks are bred by hybridisation or the use of biotechnologies.

Certification plans have been set up in many countries. They combine the use of healthy plant material and prevention of possible recontamination by inoculum or a disease spread by an insect vector by siting outdoor nurseries in clean zones or by sheltered production in risk zones. The rootstocks are sown, replanted and then shield budded or chip budded, using a bud from a shoot of the desired variety.

It is recommended that the base of the trunk should be set in a slightly raised position at planting to limit attacks by *Phytophthora*. Tillage is reduced after planting so as not to damage the surface roots. The base of the trunk must be weeded. The maintenance technique used (permanent plant cover, chemical or mechanical weed control) depends on soil/climate and economic constraints.

Preliminary pruning is performed in the early years. Annual maintenance pruning then balances and aerates the foliage and ensures the renewal of fruit-bearing shoots. Irrigation is essential in dry areas and can be in the form of subfoliar sprinkling or trickle irrigation (soakers, drip, etc.). Fertilisation can be combined with irrigation in this case (fertigation) to save inputs and ensure steady mineral nutrition.

Mineral fertilisation must make up for losses via fruits and pruning and ensure the growth of the vegetative organs. Fertilisation includes nitrogen, phosphorus and potassium. Trace elements are sprayed on the foliage. Fertilisation is based on the results of mineral analyses of leaves and soil.

Among growth regulators, gibberellic acid improves the setting of clementines and synthetic auxins increase fruit grade.



The influence of climatic conditions

Citruses originated in south-east Asia. The climate there is equatorial, tropical or subtropical according to the latitude and always strongly marked by a monsoon regime. The year features a hot, humid season (the monsoon season) and a fairly rain-free, often cooler season. The developmental cycle of citrus is keyed into these seasons. The hot, humid period is one of intense physiological activity, with shoot and fruit growth. Vegetative growth halts in the cool, dry period, a feature all the more marked when drought is severe or temperatures low. A marked halting of vegetative growth is essential before any flowering of certain citruses such as mandarin, orange, grapefruit and shaddock. Others with repeat-flowering such as citron, lemon and lime have less strict requirements but react to the same phenomena.

Temperatures between 21 and 30°C are optimum for physiological activity. This is strongly reduced when the temperature is lastingly and significantly higher than 35°C or lower than 13°C. Citrus growing is in fact limited by threshold and ceiling temperatures. Citrus trees are partially or totally destroyed at temperatures lower than 0°C. The extent of the damage depends firstly on frost duration and intensity and secondly on the susceptibility of plant parts and the type of citrus. Thus flowers, young leaves and fruits are more sensitive than branches and trunks. Citron, lime and lemon are more sensitive than mandarin, orange and grapefruit. Temperatures lower than -7°C are generally lethal for citrus trees. Temperatures higher than 50°C also cause damage.



Strong insolation is also better tolerated when the water supply is satisfactory. Irrigation must be used in citrus growing in arid or very dry regions. Plant water requirements are directly correlated with the climatic parameter total radiation (the main feature) related to insolation, temperature, wind, relative humidity, etc. These parameters are used in water requirement models and irrigation management tools.

Temperature plays an important role in the changes of fruit pigmentation as maturity approaches. Temperatures lower than 15°C cause the disappearance of chlorophyll pigments from the epidermis. This reveals carotenoid pigments. The synthesis of carotenoids (yellow and orange) and lycopene (red, specific to shaddock and grapefruit) is enhanced by a temperature of between 15 and 35°C. Red anthocyanin pigments (blood oranges) require lower temperatures but still higher than 12°C.

The synthesis and senescence of the various pigments are thus strongly affected by ambient temperature. In the tropics, the absence of low temperatures means that chlorophyll pigments do not disappear and the fruits remain green. Anthocyanin synthesis does not take place for the same reason and blood oranges remain blonde. In contrast, the red pigmentation of grapefruit is more intense. The alternate high daytime temperatures and cool nights in Mediterranean zones create an optimum environment for the breakdown of green chlorophyll pigments and the synthesis of the yellow, orange and red pigments of the various types of orange, mandarin and lemon. The external colour of the fruits is thus very well expressed.



Main citrus varieties

photos © Régis Domergue

Easy peelers

Clementine

This group of varieties is probably the result of hybridisation of *Citrus deliciosa* and an orange. Its success — considerable around the Mediterranean — is related to the useful fruit characteristics (seedless in pure plantations, good colour and flavour) combined with a long sales period. Indeed, clementines are present on markets in the Northern Hemisphere from the end of September to the end of February thanks to the different cultivars (Marisol, Oroval, Oronules, Nules, Common or Fine, Hernández, Nour, etc.).



Nova

Present on markets from mid-November to January, this medium-sized fruit is the result of a cross between common clementine and Tangelo. It has useful qualities: marked skin colour, a deep orange tender juicy seedless pulp, and sweet flavour with low acidity. The fruits must nevertheless be picked rapidly to prevent swelling of the peel. It is widely grown in Spain (Clemenvilla), Israel (Suntina) and Morocco.



Minneola

A hybrid between tangerine and grapefruit, this large round fruit is characterised by a pronounced stem-end neck. The peel is a particularly strong reddish orange colour. The pulp, with few seeds, has a very special flavour. The variety is grown mainly in Israel and Turkey.



Orange

Valencia late

Originating in the Azores, Valencia is the most commonly planted variety in the world. This medium-sized variety is round and slightly oblong. The peel is thin, well-coloured and slightly grainy. The flesh is very juicy, with 2 to 4 seeds. It is also known as Maroc Late (from Morocco) and Jaffa Late (from Israel).

Navel

A round to oval dessert orange with a strongly developed navel. The peel is grainy, thin and fairly well coloured. The flesh is crisp, fine and not very juicy. Early cultivars (Naveline) and late cultivars (Navelate, Lane Late) in the Navel group are available on Northern Hemisphere markets from October to May.

Maltese

This high-quality well-coloured orange is grown almost only in the Cape Bon region of Tunisia, where conditions bring out its full potential. It is medium-sized and slightly oval. The soft peel is slightly grainy and easy to remove. The tender, juicy flesh is little coloured for a blood orange. The flavour is particularly pleasant with sweetness balanced by a good level of acidity.

Salustiana

Very popular in Spain, this blonde juice orange is medium-sized to large. The peel is of medium thickness with fine granulation. The flesh is delicate and sweet with a very pleasant taste. It is also seedless.



Lemon

Eureka

This variety, little planted in the Mediterranean, forms the greater part of world production. It is widespread in the Southern Hemisphere. The fruit is of average size, elliptic to oblong in shape with a medium-sized apical nipple that is slender at the base. The peel is fine to medium thick. The pulp is generally seedless and rich in juice with high acidity.



Fino

This cultivar dominates Spanish production and is much grown in the Murcia region. The fruit is a regular spherical or oval shape. The nipple is shorter than that of Verna. The peel is thin and smooth. The pulp contains 5 to 8 pips and is juicier than that of Verna.



Verna

The fruit is medium to large with a pronounced, broad-based nipple. The rough epidermis is fairly thick. The juice has high acidity but only a medium extraction yield. One of the main Spanish varieties.



Limes

The Tahiti lime (*Citrus latifolia*) is a triploid variety and is the most widespread of the sour limes. The peel is green/yellow to pale yellow and contains an essential oil with a very characteristic odour. The pulp is generally seedless, yellowish green and rich in very sour juice. Another variety, Mexican lime (*Citrus aurantifolia*), is little exported as it contains a large number of seeds.





Citrus harvesting and storage

Citrus fruits are not climacteric, so their quality does not improve after harvesting. Suitable storage can slow their development: an appropriate positive temperature, 85 to 90% relative humidity and ventilation. Fruits must be harvested at a stage of maturation close to optimum ripeness—and hence optimum quality. Quality is characterised mainly by the juice content, the dry extract/ acidity ratio and flavour. Fruits must be handled with care during the harvest and not be wetted, so as to limit subsequent risks of physiological deterioration or the entry of pathogens. Transport to the packing stations must be carried out as soon as possible.

Degreening and storage

As fruits approach the ripe stage, green chlorophyll pigments disappear gradually, revealing the other yellow, orange and red epidermis pigments. This change requires cool temperatures lower than 13°C. These temperature conditions are not found in the tropics or in a Mediterranean climate in early autumn when the early varieties are picked. The fruits therefore remain green or are poorly coloured. Degreening is possible if significant breakdown of chlorophyll pigments has started naturally. Degreening is performed by placing the fruits in a chamber with a controlled atmosphere containing 1.0 to 5.0 ppm ethylene. The temperature is set at 22 to 25°C for oranges, and at a lower temperature for lemons, with relative humidity of 85 to 90%. The technique reduces storage time since ethylene stimulates senescence in citrus fruits. The duration of chilled storage can be lengthened by the application of wax or a stretch film reducing respiratory exchange and water loss. In contrast, controlled atmospheres have little or no effect.

Physiological deterioration

This is caused mainly by impacts in the orchard that are revealed later or during storage.

Frost: in the orchard or after the harvest. The skin looks wet and translucent and the segments dry out.

Chilling injury: exposure to temperatures that are above freezing point but lower than the optimum storage temperature. They cause the bursting of the essential oil glands, resulting in the burning of tissue and the appearance of small sunken brown spots on the peel; these may become coalescent. Fungal damage may subsequently occur.

Oleocellosis: caused by temperature variations in the field or bruising during harvesting or storage. Symptoms are very similar to those of chilling injury.

Abrasion by brushing: caused by skin fragility, the use of brushes that are too hard or by too high a brushing speed. The upper layers of the skin are eroded, resulting in dry patches of varying width and flow of essential oil that burns the tissue.

Fungal damage

More than 75% of postharvest citrus rots are caused by two *Penicillium* moulds (*P. italicum* and *P. digitatum*). Some rots should not appear during storage if harvesting is performed carefully:

- bitter rot caused by *Geotrichum candidum* affects fallen fruits or fruits soiled with earth;
- *Cladosporium herbarum* causes symptoms similar to those of *Alternaria citri*. Contamination by rotting, infested plant wastes occurs during harvesting;
- black mould rot of peel caused by *Aspergillus niger* affects wounded or damaged fruits stored at a temperature of over 15°C;
- infection in the orchard by *Botryosphaeria ribis*, *Physalospora rhodina* or *Diaporthe citri* causes a brown and then blackish rot of the skin and the underlying tissues in the stalk zone during storage. It is controlled by orchard or postharvest treatments.

Post-harvest diseases	Blue mould <i>Penicillium italicum</i>	Green mould <i>Penicillium digitatum</i>	Black rot Anthracnose <i>Alternaria citri</i>	Brown patch <i>Glomerella cingulata</i> (= <i>C. gloeosporioides</i>)	Brown rot <i>Phytophthora sp.</i>
Symptoms and part of fruit affected	Paling and softening of the skin; white down (mycelium) then appears; covered with blue spores; pulp affected simultaneously.	Slight paling and softening of the epidermis; then bright white down grows in circular layers, covers with green spores from the centre. The entire fruit (peel, pulp) is finally affected, fruit cannot be eaten from the beginning.	Black rot on columella and segments, and/or peel.	Spotting of unripe fruits developing into brown patches that become soft with ripening and then affect the pulp. Marked odour. Degreened fruits very susceptible.	Start: spotted discoloration of peel and then spread of the patches; variable colour with brown patches and finally fruit disintegration. In storage: fine white mycelium with brown areas; characteristic odour.
Infection pathway	Spores on intact epidermis, fruit to fruit contamination.	Spores on wounded epidermis.	Wounds, penetration by the navel and the style scar.	Fruits wounded in the field.	Spores on intact epidermis.
Site of infection	From packing to consumption.	In the orchard, but above all from picking to consumption.	Orchard and warehouse.	Orchard.	Orchard: splashing with water. Packing: contaminated washing water. Storage: fruit to fruit contamination.
Species and varieties susceptible	All varieties.	All varieties.	Navel orange, madarin, lemon.	All varieties, but above all mandarins.	All varieties (orange more susceptible).