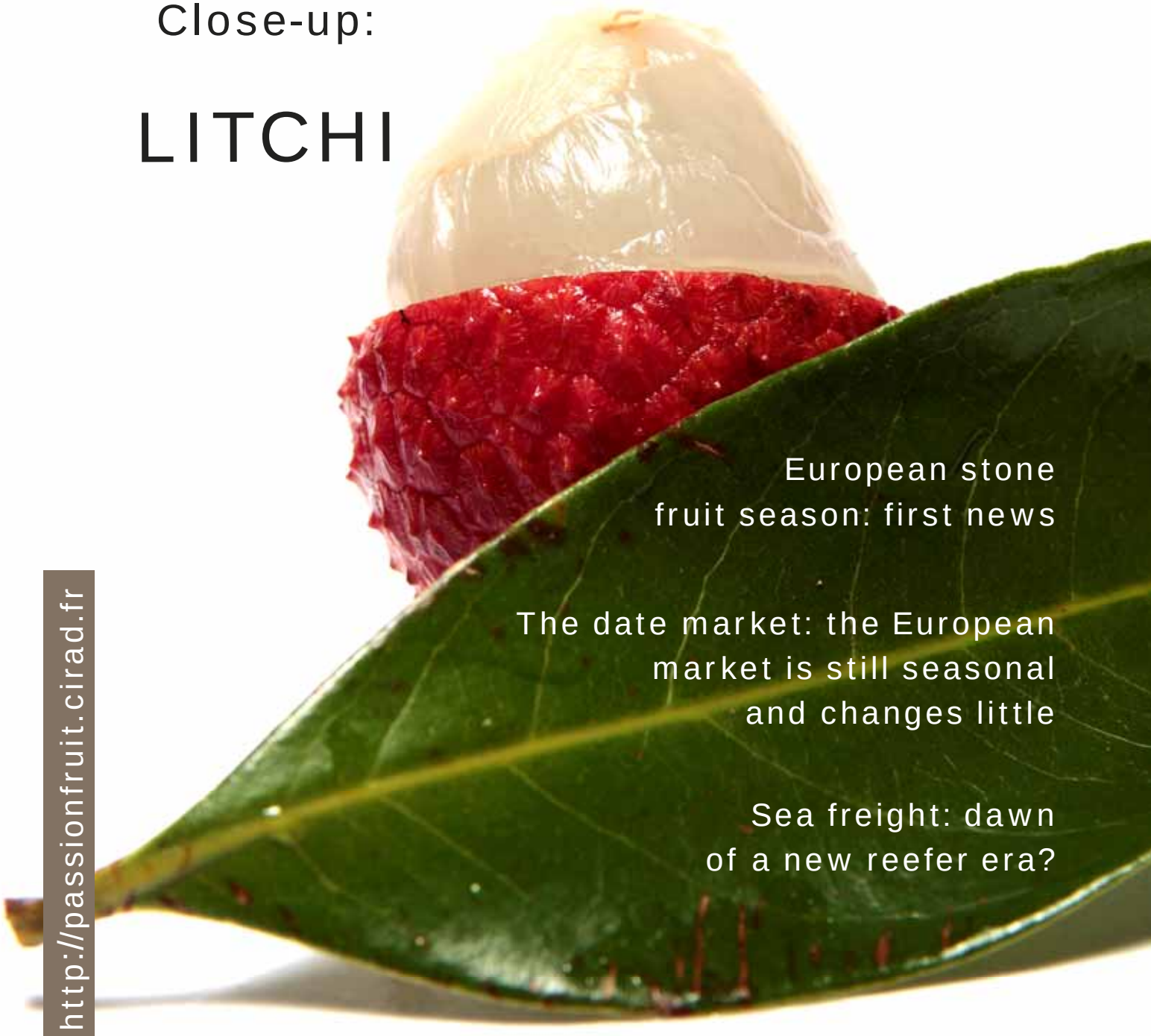
May 2013 - No. 211

FRuiTROP

English edition

Close-up:

LITCHI



European stone fruit season: first news

The date market: the European market is still seasonal and changes little

Sea freight: dawn of a new reefer era?

http://passionfruit.cirad.fr

cirad

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'Do you prefer 'Camembert de Normandie' or processed cheese?'. *This is a serious question as the French do not joke about food. People with no taste, demolishers of ancestral traditions and the global agrifood industry must not pass! Camembert is made in Normandy from unpasteurised milk. If not, it's not real Camembert. This is the very expression of French culinary awareness, a feature shared by other countries such as Spain and Italy. However, this fight to protect traditions also has a natural aversion to the principle of standardisation. The modern world is considered to be too standardised, governed and policed and this is gradually eroding the fundamental values of European societies, capacity for innovation and possibly individual liberties. In a role that can be summed up by the dictum 'Be courageous. Let's run away', national politicians criticise the anti-democratic centralised mega-structure, in other words the European Commission, that wants to stop us from peacefully force-feeding our geese, from eating cheese made from unpasteurised milk or drinking real rosé wine. The expiatory victim, the European Commission, and its weapon, standardisation, are all there! It is probably ineffectual as well because beef lasagne is now horse, Brie is from Tataooine and imported organic foods are somewhat suspicious. Victims of disinformation, European citizens merrily mingle standards, control and traceability. And meanwhile they forget the substantial decrease in the number of cases of food poisoning in Europe that has resulted from the promotion of good practices and also the forbidding of bad ones by means of strict standardisation. Discuss it with Chinese parents obliged to make massive imports via the local e-bay of perfectly standardised baby milk from our old and decadent democracies. Standardisation is their dream.*

Denis Loeillet

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FRuiTROP

Contents

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Banana

April 2013

Supply continued to increase. The upward momentum of shipments from the French West Indies Antilles took the volumes to 15% above the average. The seasonal increase in shipments from Côte d'Ivoire continued, with a figure close to average and volumes from Cameroon remained very large (+ 33%). Only Ghana still displayed a slight shortfall. In dollar bananas, overall volumes were close to average with Ecuador still down by 25%, compensated by Colombia (+ 20%), and volumes from Costa Rica were normal.

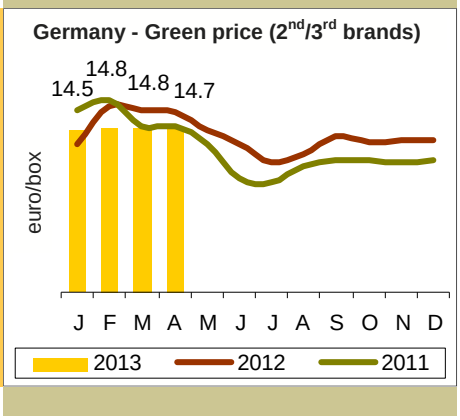
School holidays and short weeks (Easter) also slowed sales somewhat. But the very marked absence of seasonal fruits, the setting up of retail promotion operations and weather favourable for banana consumption, kept sales running well on the various markets. Re-exports to Eastern European markets were also very active thanks to improved demand (better weather with the end of the snowfalls and higher temperatures). France, Italy and Germany thus maintained a degree of balance. Green prices hardly changed in comparison with the previous month and were slightly lower than normal for the season.

In Spain, shipments from the Canary Islands started their seasonal increase and volumes 20% larger than average weighed on a market whose conditions soon worsened.

The Russian market had displayed better balance since the end of March but gradually deteriorated as arrivals were still at record levels. CIF prices started to fall again in Week 16.

NORTHERN EUROPE — IMPORT PRICE

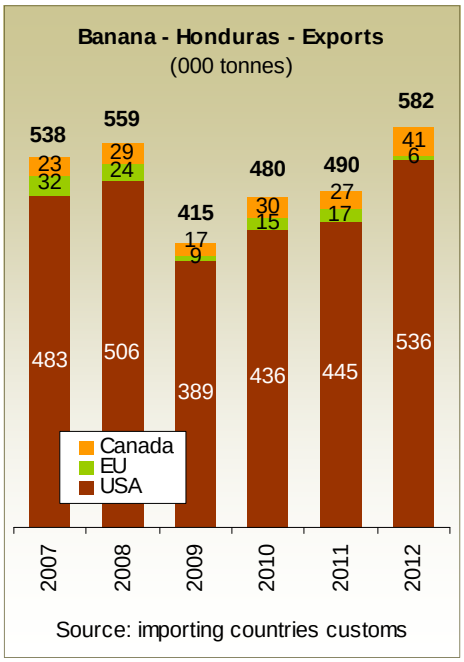
April 2013 euro/box	Comparison	
	previous month	average for last 2 years
14.70	- 1%	- 5%



EUROPE

■ Honduran bananas: the increasing power of the multinationals. According to the president of the banana producers association, volumes from independent growers have halved in the past decade and now stand at only 3 million of the 27 to 29 millions boxes exported from Honduras each year. The reasons are shortage of capital, poor productivity and the increasing certification requirements of the international markets. Dole and Chiquita now control more than 80% of the land under banana—estimated at 18 000 ha. The banana industry is the country's second largest source of income and has generated USD400 to 440 million in foreign currency earnings in the last two years, trailing far behind coffee with its USD1.4 thousand million.

Source: Reefer Trends



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■ The Swiss are the champions of fair trade. A study conducted by the Max Havelaar Foundation shows that Swiss consumers are the fair trade champions of the world! Every Swiss is reported to spend an overage of CHF 50 per year on fair trade products sold in the country, with these totalling some 2 000. This is an increase of more than 14% in comparison with 2011 and the Max Havelaar Foundation considers that this can be doubled within a reasonable period of time. Bananas and flowers form 44% of the business concerned with 28 000 t and 80 million units respectively sold in Switzerland last year. This shows that you can have little secrets and a big heart!

Source: Max Havelaar Foundation

EUROPE — RETAIL PRICE

Country	April 2013		Comparison	
	type	euro/kg	March 2013	average for last 3 years
France	normal	1.59	- 2%	+ 2%
	special offer	1.40	- 4%	+ 5%
Germany	normal	1.36	0%	+ 4%
	discount	1.23	- 1%	+ 6%
UK (£/kg)	packed	1.17	- 1%	- 4%
	loose	0.74	- 5%	- 9%
Spain	plátano	1.82	0%	+ 1%
	banano	1.33	- 1%	- 5%

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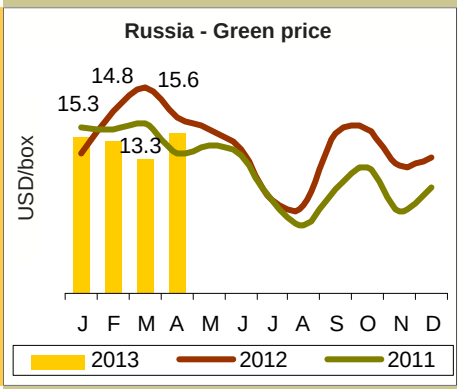
Banana

UNITED STATES

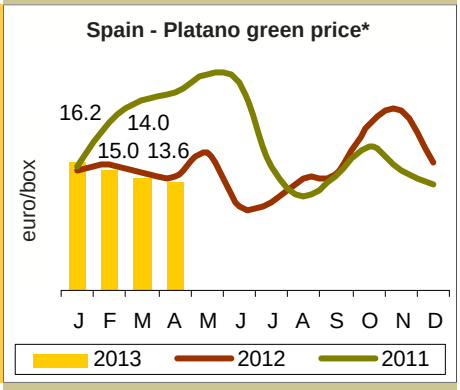
USA — IMPORT PRICE		
April 2013 USD/box	Comparison	
	previous month	average for last 2 years
15.80	- 1%	- 12%

RUSSIA



RUSSIA — IMPORT PRICE		
April 2013 USD/box	Comparison	
	previous month	average for last 2 years
15.60	+ 18%	+ 1%

CANARIES



CANARIES — IMPORT PRICE*		
April 2013 euro/box	Comparison	
	previous month	average for last 2 years
13.60	- 3%	- 31%

* 18.5 kg box equivalent

■ First quarter banana supply positive in both the EU and the USA. After two positive months, supply went into the red again in March, decreasing by 2% in comparison with 2012 and running 5% less than the 3-year average. Imports from the dollar zone, especially Ecuador (- 29 500 t) and Colombia (- 4 600 t), displayed a downwards trend while shipments from Costa Rica, Panama and, to a lesser extent, Mexico and Guatemala, were up in comparison with March 2012. No problems for ACP sources, at least as regards volumes. All suppliers except Ghana (- 1 800 t) increased their shipments in March 2013, sometimes strongly (Cameroon: + 5 800 t). European production increased well, especially in the West Indies (+ 15 to + 16% in comparison with March 2012), but fell in the Canaries (- 10%).

In spite of this poor performance, the first quarter balance is positive, 2% up on 2012. Dollar sources displayed a very slight increase (+ 1%), African ACPs were well up (+ 13%) and European shipments decreased (- 4%) with smaller shipments from the Canaries and Martinique but an increase from Guadeloupe. Cameroon took over the position as leading ACP source, ahead of the Dominican Republic and Côte d'Ivoire. In the dollar zone, Mexico increased its shipments five-fold thanks to its tax-free quota. Performance was the same but for different reasons for exports to the United States. Peru returned to a calmer growth rate of about 4% while shipments from the Dominican Republic stabilised.

The United States recorded growth as usual in a positive first quarter taking 5% more than in 2012 and 7% more than the 3-year average. Shipments from Ecuador decreased strongly (- 7%).

Source: CIRAD

■ Erratum: French banana market. In contrast with our report last month, supply of the French banana market increased slightly in the first quarter of 2013. The French customs reported a mistake in figure for re-exports from France and this rectification swung the market into the green, with among the largest supply totals of the decade (slightly over 47 000) in February. Caution is still necessary but the figure for March fell to 41 000 t. Finally, Q1 consumption reached 131 000 t, a slight (5 000 t) increase in comparison with 2012. Supply displays a 4% deficit over a 12-month period.

Source : CIRAD

Banana - January to March 2013 (provisional)				
tonnes	2011	2012	2013	Difference 2013/2012
EU-27 — Total supply	**1 307 171**	**1 320 743**	**1 342 035**	**+ 2%**
Total import, of which	1 168 342	1 163 816	1 191 983	+ 2%
MFN	938 308	943 620	953 969	+ 1%
ACP Africa	128 812	117 857	132 687	+ 13%
ACP others	101 222	102 339	105 327	+ 3%
Total EU, of which	138 828	156 927	150 052	- 4%
Martinique	30 109	40 036	39 225	- 2%
Guadeloupe	10 224	13 333	14 279	+ 7%
Canaries	93 233	98 296	93 043	- 5%
USA — Imports	**1 039 890**	**1 059 434**	**1 109 618**	**+ 5%**
Re-exports	41 832	40 009	43 239	+ 8%
Net supply	998 058	1 019 425	1 066 380	+ 5%

EU sources: CIRAD, EUROSTAT (excl. EU domestic production) / USA sources: US costums

EUROPE — IMPORTED VOLUMES — APRIL 2013			
Origin	Comparison		
	March 2013	April 2012	cumulated total 2013 compared to 2012
French West Indies	↗	+ 15%	+ 4%
Cameroon/Ghana/Côte d'Ivoire	↗	+ 8%	+ 15%
Surinam	↗	+ 9%	+ 4%
Canaries	↗	- 8%	+ 1%
Dollar:			
Ecuador	↗	- 22%	- 22%
Colombia*	↗	+ 13%	+ 11%
Costa Rica	↗	+ 5%	0%

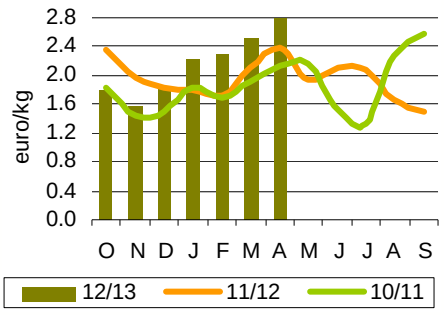
Estimated thanks to professional sources / * total all destinations

Avocado

April 2013

The market has performed well again even though 'Hass' supply was still substantially above average. Exports from Spain and Israel were strong and arrivals from the southern hemisphere—mainly from Peru— were large. However, volumes were well distributed among the various EU markets. In addition, the supply of green varieties was very small from both the northern and southern hemispheres. Prices of 'Hass' therefore held at a very good level, although the situation worsened for small fruits (22/24) that were numerous in most of supply in the second half of the month. Green varieties shipped mainly to northern Europe sold well.

Avocado - France - Import price



PRICE

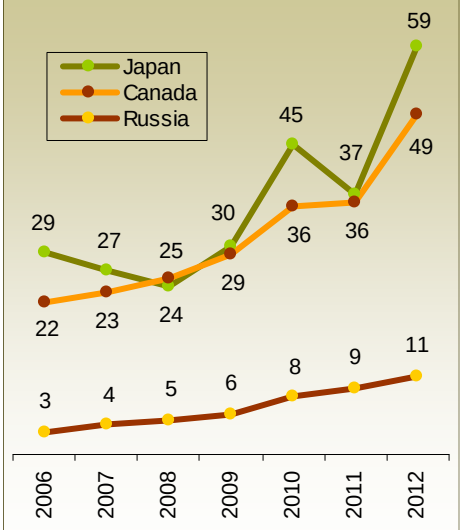
Varieties	Average price in France euro/box	Comparison with the last 2 years
Green	8.25-8.75	+ 39%
Hass	10.50-11.00	+ 8%

VOLUMES

Varieties	Comparison	
	previous month	average for last 2 years
Green	↘↘	- 64%
Hass	↘	+ 36%

■ The 'medium 'markets are growing. Will it soon be the end of a world avocado market centred just on the United States and the European Union? Probably not, but customs figures show that the so-called 'diversification' markets are developing strongly. After remaining at 25 000 to 30 000 t until 2008, Japanese imports practically doubled to nearly 60 000 t in 2012. The same feature is observed in exports to Canada, the fourth largest importer in the world and to which shipments increased from 25 000 t to 50 000 t during the same period. This is not a coincidence but rather the results of work by Mexican exporters, the leading suppliers of these countries, which have invested in retail promotion campaigns. Hitherto a small market, Russia is also entering the 'medium-weight' group and has become the fifth largest importer, handling more than 10 000 t for the first time. This is the result of natural dynamics and gives an idea of the potential of a market with more than 120 million people and a rising standard of living.

Avocado - Average markets imports
(000 tonnes)



Sources: national customs, Comtrade

Sources: CIRAD, Comtrade, national customs authorities

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■ Colombia: a representative organisation to support the growth of exports. Corpohass is to represent the interests of the leading Colombian 'Hass' avocado exporters on the international market. Its main objective will be to conduct negotiations with APHIS concerning the procedures for a possible entry on the US market. Some 8 800 ha is under 'Hass' in Colombia and is distributed between nine administrative departments: Antioquia, the coffee zone and the more southern Valle and Cauca departments.

Source: infohass.net

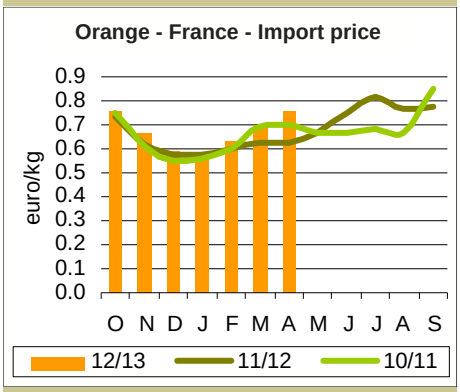
VOLUMES

Source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
	previous month	average for last 2 years		
South Africa	↗	- 24%	Supply of 'Fuerte' very short. Volumes of 'Hass' larger than average but very moderate until the end of the month.	- 10%
Peru	↗↗	+ 13%	Arrivals larger than average in spite of very limited volumes of green varieties. Large arrivals of 'Hass'.	+ 5%
Israel	↘	- 20%	Season losing momentum distinctly from the beginning of the month onwards. Very small volumes of green varieties but significant supply of 'Hass' until the end of the month.	- 4%
Mexico	↘	na	Small but steady supply of 'Hass' throughout the month after a total absence in the last two years.	+ 168%
Spain	=	+ 10%	Strong presence of 'Hass' throughout the month.	+ 12%

Orange

April 2013

The market remained very satisfactory. Demand held at a level distinctly greater than average thanks to cold weather that favoured sales and smaller supplies of competing fruits than in previous years. Prices of 'Navelate' continued to firm, reaching a good level at the end of the month. On the juice orange market, 'Valencia Late' took over from 'Salustiana' in the second part of the month. The prices of these varieties were also distinctly higher than average. Supply was completed by a few batches of 'Maroc Late' and the last batches of 'Maltese' from Tunisia.



PRICE

Type	Average monthly price euro/box 15 kg	Comparison with average for last 2 years
Dessert oranges	10.50	+ 4%
Juice oranges	10.00-10.50	+ 6%

VOLUMES

Type	Comparison	
	previous month	average for last 2 years
Dessert oranges	=↘	+ 14%
Juice oranges	=↗	+ 22%

VOLUMES

Varieties by source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
	previous month	average for last 2 years		
Navelate from Spain	=↘	+ 14%	Decreasing volumes, especially in the second half of the month, but supply was larger than the average.	+ 18%
Valencia Late from Spain	↗	+ 15%	Very gradual start to the season and then rocketing volumes at the end of the month.	+ 7%
Salustiana from Spain	↘	+ 29%	Prolongation of the season. Volumes at a good level in the first half of the month.	+ 10%

■ **Brazilian orange juice: sad record...** At slightly more than 1.1 million tonnes, Brazilian concentrated orange juice stocks are estimated by FoodNews to be the equivalent of slightly more than a year's export consumption. This figure illustrates the crisis experienced by small growers who depend on the spot market and whose fruits are no longer taken by the large juice companies. According to a farmers' union representative, 2 000 farmers have ceased their activity in the central part of Sao Paulo state in the last two years and lease their land to sugar cane producers. The Brazilian government has been asked once again to continue to subsidise the minimum price of BRL10 per box (40.8 kg) in 2013-14 and to exempt domestic sales of pure orange juice from two federal taxes in order to stimulate Brazilian consumption that is still small at 15 million litres per year.

Source: FoodNews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© Eric Imbert

■ **Egyptian citrus at the gates of the United States market.** Forbidden since 2002 because of the presence of two types of fruit fly (Mediterranean fruit fly and peach fruit fly), easy peelers and oranges from Egypt could reappear in US shops. Access would probably require the application of a sanitary protocol using disinsectisation by cold treatment. The procedure is at the public enquiry stage until 17 June 2013.

Source: APHIS

■ **Doubly positive performance of the Tunisian 'Maltese' season.** Orange exports exceeded 20 000 t, a 14% increase in comparison with the last season, in spite of a 7% decrease in production. The shipments consisted practically only of 'Maltese', with more than 90% shipped to France (about 1 000 t exported to Algeria). The average price calculated by our market watch also shows a 10% increase in comparison with the 4-year average.

Sources: Reefer Trends, CIRAD

Their attitude will change their childrens' future

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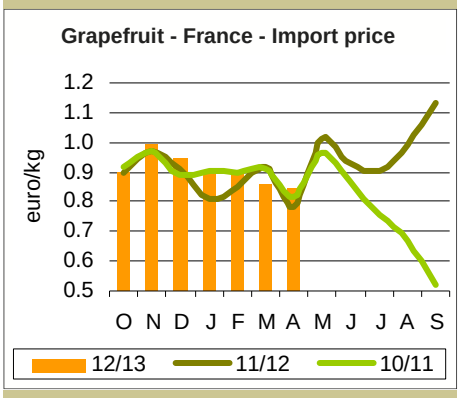
Grapefruit

April 2013

Market performance remained mixed in spite of modest supply and a favourable context as regards competing fruits. Mediterranean supply was distinctly smaller than average. The Spanish and Turkish seasons ended early while shipments from Israel were somewhat small. Prices firmed but returned to only an average level for the season. Supply from Florida was larger than in preceding years, with a return to a normal supply calendar after a truncated 2012-13 season. However, the acceleration of demand was small as the quality of certain brands was only medium. Prices remained stable and average. French supply was completed by 'Star Ruby' from Corsica.



■ California citrus: Chinese torture... Another blow for the California citrus sector. And it's Chinese again, like greening that appeared in California in early 2012! This is ironic as the know-how of the first Asian immigrants in questions of citrus production and storage made a substantial contribution to the California citrus industry at the end of the nineteenth century. China has closed the doors to Californian exporters with surprising brutality. The sanitary problem in question, that is to say *Phytophthora syringae* that causes a rot, had never been the subject of any warnings by the Chinese authorities until now and application of the decision was immediate. The United States exported 50 000 to 65 000 t of citrus to China, worth USD 30 to 34 million, from 2010 to 2012. Consisting mainly of oranges and lemons from California, the volumes form 5% of total citrus exports from the USA.

Source: Reefer Trends

© Régis Domergue

PRICE

Type	Average monthly price euro/box 17 kg box eq.	Comparison with average for last 2 years
Tropical	16.50	- 1%
Mediterranean	12.00-12.50	+ 3%

VOLUMES

Type	Comparison	
	previous month	average for last 2 years
Tropical	↘↘	+ 50%
Mediterranean	↗	- 11%

Citrus — USA — Exports to China

tonnes	2008	2009	2010	2011	2012
Orange	35 470	36 196	44 663	55 988	44 737
Lemon	2 759	3 262	5 662	4 821	4 310
Grapefruit	546	499	1 152	381	496
Easy peelers	-	68	88	318	4
Other citrus	9	101	23	2 876	891
Total	**38 783**	**40 128**	**51 588**	**64 383**	**50 439**

Source: US customs

VOLUMES

Source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
	previous month	average for last 2 years		
Florida	↘↘	+ 44%	Substantial arrivals until mid-month and total supply larger than average. Return to a normal supply calendar after a shortened season in 2012.	- 2%
Israel	↘	- 15%	Significant volumes until the end of the month but the level was distinctly lower than average.	+ 87%
Turkey	↘↘	- 61%	Early end of the season. Tiny volumes in April.	- 15%
Spain	=↘	- 58%	Steady but limited volumes smaller than the average during the month.	- 17%

Pineapple

April 2013

Demand decreased after Easter and continued to do so throughout April. Sales of 'Sweet' were difficult, mainly because supply was large because of late arrivals of ships and unbalanced as there was a large proportion of small fruits for which there is little demand. Arriving batches were side by side with stored fruits sold at clearance prices lower than those shown below. However, a more marked fall in prices was prevented by a number of promotion operations. Supply of 'Sweet' increased but unevenly. Operators holding too many fruits had to lower their prices strongly while others with lighter stocks purchased fruits to meet demand from a number of their customers. The lateness of the season's fruits (about three weeks) resulted in the maintaining of a degree of interest in pineapple.

Supply of 'Smooth Cayenne' was very small throughout the month. The few boxes released on the market sold quickly at fairly strong prices.

The situation was fairly difficult for pineapple shipped by air. The market was clogged by poor Easter sales during the first three weeks of the month and the stocks available had to be managed. Operators thus had to lower their prices and even sometimes sold their fruits on a commission basis to shift their stocks. Sales were affected mainly by quality problems at the end of the month, especially in fruits from Benin. The quality of supply from Cameroon was more regular and so the fruits sold better. Sales were fairly fluid on the 'Sugarloaf' market at between EUR 1.85 and 2.00 per kg throughout the month.

Supply of 'Victoria' was small. Fruits from Réunion were the least represented on the market and this justified their high prices, while overall demand was not very brisk.

Mango

April 2013

The decrease in demand at the end of March, after Easter, did not cause prices to weaken. Shipments from Peru decreased at the end of the season and so prices remained fairly stable and firm in the first half of April. The shortage in the second half of the month caused by a rapid decrease in volumes from Peru and the late start of shipments from West Africa caused a distinct rise in prices. A speculative approach resulted in some transactions at the end of the month being concluded at prices higher than those mentioned below. The same trend was observed for the other sources. Thus 'Tommy Atkins' from Brazil, shipped mainly to Northern Europe, sold at prices rising from to EUR 5.50-6.00 per box at the beginning of the month EUR 6.00-8.00 per box at the end of the month. A few batches of 'Keitt' from Puerto Rico changed hands on the same basis. 'Tommy Atkins' and 'Keitt' from Costa Rica moved at slightly lower prices as quality was uneven. Deliveries from Brazil, Puerto Rico and Costa Rica did not fill the gap left by Peru. Stable demand in the second half of the month was particularly beneficial for mangos because of the lateness of seasons that generally compete with each other during this period.

After sales of very ripe fruits at low prices at the beginning of the month, the air market soon cleared. Fruits from Peru that were firmer than those in previous shipments sold at rising prices as only limited quantities were available. Marked under-supply caused a strong firming of prices in the second week of the month. The first deliveries from Mali and Burkina Faso compensated the deficit only partially, especially as the fruits did not always match demand ('Amélie' and 'Valencia' often with barely sufficient colour and ripeness). However, they profited from the shortage of produce and sales were completed at fairly firm prices. The first 'Kent' from Côte d'Ivoire did not reach the market until the end of the month and were sold at the same price as the last batches from Peru in spite of lack of colour and ripeness. A few complementary batches of 'Zill' from Côte d'Ivoire sold at around EUR 4.00-4.50 per kg. 'Smith', 'Palmer' and 'Irwin' from Mali were difficult to sell well as the quantities were small, quality uneven and the fruits often did not match buyers' requirements (EUR 3.00-3.50 per kg). Small complementary batches of 'Springfield' arrived from Burkina Faso (EUR 3.00-3.50 per kg).

EUROPE

MANGO — ARRIVALS (estimates)
Tonnes

Weeks 2013	14	15	16	17
By air				
Peru	30	20	10	10
Mali	8	15	15	20
Burkina Faso	15	20	15	20
Côte d'Ivoire	-	-	-	100
By sea				
Brazil	1 300	900	750	790
Peru	1 600	1 030	1 300	550

MANGO — IMPORT PRICE ON THE FRENCH MARKET — Euro

Weeks 2013		14	15	16	17	Average april 2013	Average april 2012
By air (kg)							
Peru	Kent	3.80-4.00	4.00-4.50	4.50-5.00	5.00-5.50	4.30-4.75	4.10-4.60
Mali	Amélie	3.50	2.80-3.20	2.80-3.20	-	3.00-3.30	2.70-2.85
Mali	Valencia	3.00-3.80	3.00-3.50	3.50	3.00-3.50	3.10-3.55	2.90-3.45
Burkina	Amélie	3.50	2.80-3.20	2.80-3.20	2.50-3.00	2.90-3.20	2.60-2.65
Burkina	Kent	-	-	-	4.50	4.50	3.60-3.90
Côte d'Ivoire	Kent	-	-	-	5.00-5.50	5.00-5.50	4.25-4.65
By sea (box)							
Peru	Kent	5.50-6.50	5.50-6.00	6.00-7.00	6.00-8.00	5.75-6.85	4.00-5.40
Puerto Rico	Keitt	-	6.00	6.00	6.00-7.00	6.00-6.30	nd

EUROPE

PINEAPPLE — IMPORT PRICE

Weeks 14 to 18	Min	Max
By air (euro/kg)		
Smooth Cayenne	1.70	2.00
Victoria	3.00	3.80
By sea (euro/box)		
Sweet	7.00	9.00

PINEAPPLE — IMPORT PRICE IN FRANCE — MAIN ORIGINS

Weeks 2013		14	15	16	17	18
By air (euro/kg)						
Smooth Cayenne	Benin	1.70-1.90	1.70-1.80	1.70-1.85	1.75-1.85	1.70-1.85
	Cameroon	1.70-1.90	1.65-1.80	1.70-1.90	1.70-1.90	1.70-1.90
	Ghana	1.80-1.90	1.70-1.80	1.75-1.90	1.75-1.85	1.75-1.90
Victoria	Réunion	3.30-3.50	3.50-4.00	3.50-3.80	3.50-4.00	3.50-3.80
	Mauritius	3.00-3.30	3.00-3.30	3.00-3.30	3.00-3.30	3.00-3.30
By sea (euro/box)						
Smooth Cayenne	Côte d'Ivoire	7.00-9.00		7.00-8.00	7.00-8.00	7.00-8.00
Sweet	Côte d'Ivoire	8.00-9.00	7.50-9.00	6.50-8.00	6.50-8.50	6.50-8.50
	Cameroon	8.00-9.00	7.50-9.00	6.50-8.00	6.50-8.50	6.50-8.50
	Ghana	8.00-9.00	7.50-9.00	6.50-8.00	6.50-8.50	6.50-8.50
	Costa Rica	7.00-8.50	7.00-8.00	6.50-7.50	6.00-7.00	6.50-8.00

Sea freight

April 2013

Fears that the charter market would take a post Marketing Order plunge proved to be unfounded, largely due to the need for additional tonnage to cover the effects of the container port strike on Chilean fruit exports. Reefer operators were justified in believing that if the TCE average could be maintained during the dip in demand for capacity between the end of the Chilean season and the start of the southern hemisphere citrus season then there would be a significantly stronger than usual start to the off-season.

And while it is true that in chartering more specialized reefer capacity the Chilean strike helped to prevent the traditional decline in rates, in reality no more than 6-8 vessels were added or withdrawn from Spot positions to fulfill the extra requirements to the USEC and Europe. Markets can be built or fall on such tiny margins!

Key to prolonging the appearance of a strong market between May and September is an ability to keep vessels away from Cristobal. This is not only because Ecuadorian banana voyages tend to define the weekly Spot average TCE yield but also because they determine the temperature of the market in general.

With operators re-positioning vessels for the citrus season coupled with the long-anticipated increase in the volume of Ecuadorian bananas, by the end of the month the supply of tonnage had tightened to a point where box and TC rates had started to rise. Going forward, the early availability of excess bananas east of the Panama Canal and the occasional Spot citrus charter should continue to underpin demand pressure on capacity.

However demand for bananas in the trading markets of the eastern Med and Black Sea is lower than last year and continuing to shrink for various reasons. This, coupled with the advent of warmer temperatures and summer fruit means the trading risks for the Med operators are suddenly very high. How any of the intermediary stakeholders will make money with Ecuadorian bananas when the reference price is USD 6, local on-costs USD 2.20 per box and freight at USD 6-8 in a period when the market returns no more than USD 10-12 per box is a mystery.

Away from the charter market the biggest news story was in South Africa where for the first time NYKCool (or any of its previous incarnations) will not be involved in a standalone or VSA citrus service to N Cont. While citrus shippers may moan at NYKCool for withdrawing from the trade lane or accuse Seatrade of ruthlessly leveraging its position, the real story is about the mode. Both NYKCool and Seatrade will admit that the service between South Africa and Europe has not been profitable in recent years, largely because a critical mass of fruit has defected to the lower-cost container lines. Over the past 12 months NYKCool has shed tonnage and must prioritise profitability on its remaining vessels. While NYKCool will doubtless be embarrassed by its enforced exit from the trade, at the same time it cannot escape from the new commercial reality.

The South African citrus industry has no right to blame NYKCool – it is the shippers, after all, who are responsible for the position in which they find themselves. It is a little ironic, but also a sign of the times that in the week that NYKCool 'abandoned' South Africa it increased its profile in Latin America where it estimates that it will handle a record volume (160,000 pallets) of Argentinean citrus into N Cont, Russia and the Med this year.

■ Larger supplies of organic/fair trade Peruvian fruits in the pipeline? This is what is recommended by the Peruvian national export promotion agency. OCEX highlights in particular the potential of the US market for organic/fairtrade pineapple and the conclusive trials made by Peruvian banana producers. Peru is the second largest exporter of organic/fair trade bananas in the world after the Dominican Republic.

Source: Reefer Trends

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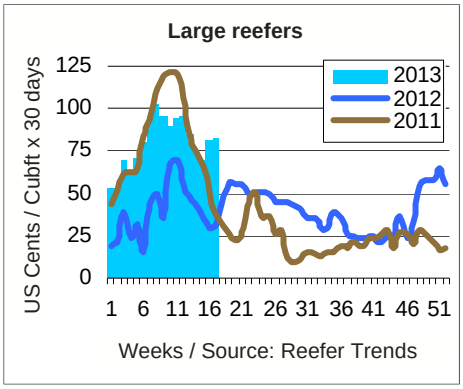
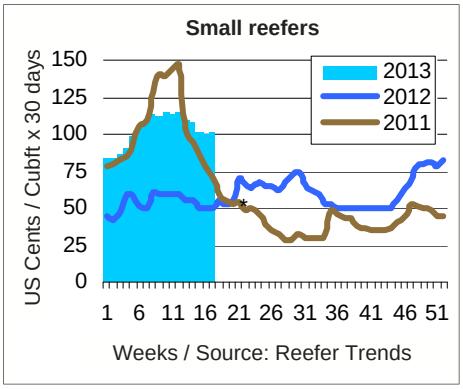
REEFER

MONTHLY SPOT AVERAGE

USD cents/cubic foot x 30 days	Large reefers	Small reefers
April 2013	77	100
April 2012	34	51
April 2011	56	78





European stone fruit season

First news

The European harvest forecasts released at the EuroMéditerranée (Medfel) in Perpignan in April confirmed the impact of the cold, wet weather, with late fruit maturity and decreased production. This is the case for apricot in particular with a harvest that could be down by about 17% in comparison with 2012, with the smaller harvest affecting the whole of Europe. The effects are more mixed for peaches and nectarines and the European harvest could be average (+ 4%). However, the decrease may be some 2 to 6% in France, Greece and Italy, while production should increase by about 20% in Spain.

Peach and nectarine — European Union Production of the main producer countries			
tonnes	2013	Comparison	
		2012	average 3 last years
Italy	1 498 600	- 2%	0%
Spain	956 126	+ 20%	+ 19%
France	256 561	- 6%	- 14%
Greece	301 200	- 3%	+ 3%
Total	**3 012 487**	**+ 4%**	**+ 4%**

Source: Medfel / Processing: INFOFRUIT

Spain leads in flat peaches

The 2013 peach and nectarine season promises to be somewhat chaotic. It should be good overall but the crop will be late in most production regions. Some damage has been sustained in the early zones but production will be substantial from June onwards.

Production (except for clingstone peaches) should therefore be large in Spain at 956 000 t, exceeding the record 886 000 t of 2011. This is the result of an increase in orchard area resulting from a switch from pip fruits to stone fruits and the development of flat peaches and nectarines; these should form as much as 14% of the harvest (132 500 t). Production should be no more than normal in the south (Andalusia, Murcia and Valencia) as the early varieties were hit by cold weather; but quantities should be from 24 to 43% greater than last year's, when there was a shortfall. Volumes could increase strongly again in Estremadura and Aragon (21%) and in Catalonia (14%), after the slight shortage observed last year.

However, production should decrease a little in Italy as a result of grubbing up and cold weather. But the fall should be limited in southern Italy (- 2% in comparison with 2012 and + 10% in comparison with the 3-year average) because of the renewal of orchards in this zone.

Production should decrease by 3% in the centre (- 24% in comparison with the 3-year average) and by 7% in Emilia-Romagna (- 12% in comparison with the 3-year average) and in Venetia (- 15% in comparison with the 3-year average).

Likewise, areas are continuing to decrease in France where the early zones were also severely hit by cold weather. The decrease in comparison with the 2012 crop could reach 5% in Provence-Côte d'Azur and 10% in Roussillon. The trend will be less marked in the Rhône-Alpes region (- 2%).

Orchard area is increasing in Greece but cold and rain have caused a decrease in the harvest of at least 3% in comparison with 2012 (+ 3% in comparison with the 3-year average).

Apricots in trouble

After a record crop in 2012 (604 000 t) apricot could return to the same level as in 2011 when rain had affected fruit setting. Repeated rain, combined with cold, have affected flowering and pollination of most apricot varieties this year.

Production should therefore decrease slightly in Spain in spite of the increase in area resulting

Apricot — European Union Production of the main producer countries			
tonnes	2013	Comparison	
		2012	average 3 last years
Italy	214 100	- 15%	- 11%
Spain	83 118	- 13%	+ 12%
France	160 150	- 13%	+ 1%
Greece	41 500	- 42%	- 36%
Total	**498 868**	**- 17%**	**- 7%**

Source: Medfel / Processing: INFOFRUIT


© Pauline Feschet

from the switch from pip to stone fruits. However, the total could be greater than the 3-year average.

Production should also decrease markedly in Italy in 2013 even though modern varieties have been planted in recent years.

The French harvest should be around average (+ 1%), but with various disparities and especially a fairly marked decrease in Provence-Côte d'Azur which was hard hit by cold (- 8% in comparison with the 3-year average) and by alternate bearing (- 31% in comparison with 2012). The fall should be no more than 5% in Languedoc-Roussillon (- 2% in comparison with the 3-year average). A slight decrease is also expected in Rhône-Alpes (- 10% in comparison with 2012) after last year's large harvest, but production should nonetheless reach nearly 100 000 t (+ 8% in comparison with the 5-year average).

However, Greek growers forecast a strong decrease in the harvest. Early varieties damaged by frost in March will be those most affected but the late varieties were also damaged by the rain and cold that followed ■

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The date market

The European market is still seasonal and changes little

Dates are a staple foodstuff for many populations and consumption is particularly high during Ramadan. European consumption is still increasing slightly but is still timid, with little in common with the large consumer countries. New heavyweight stakeholders are emerging at the world level.

World production continuing to increase

World date production is increasing very strongly and steadily. It has doubled every 20 years since 1950, reaching nearly 8 million tonnes in 2011, double the figure for the 1990s. However, there have been phases of slower growth, as at the beginning of the 1980s and the beginning of the 2000s, after decreases in production in major producer countries that were involved in regional conflicts. But growth has remained strong at + 22% since 2000 and + 131% since 1990.

Traditional production zones

The cultivation of date palms is considered to be one of the oldest forms of agriculture. It has remained very regional, with 96% of the area concentrated in North Africa and the Middle East. Date palms also spread to Asia (China and India) and to the Americas (United States, Mexico, Costa Rica and Peru). However, the crops in these countries are tiny in comparison with those of the major producer countries. Since the 1980s, these have been Saudi Arabia, Iran, Iraq, Egypt, Pakistan, the United Arab Emirates, Algeria and the Sudan.

Iraq dominated world production with nearly a million tonnes until 2000. But the war caused a plunge to 430 000 tonnes in 2007. It has since recovered but has not regained its leading position.

With 1.3 million tonnes in 2011, Egypt has become the world's leading date producer, followed by Saudi Arabia (1.1 million), Iran (1 million), the UAE (900 000 t), Algeria (690 000 t) and Iraq (619 000 t). These six

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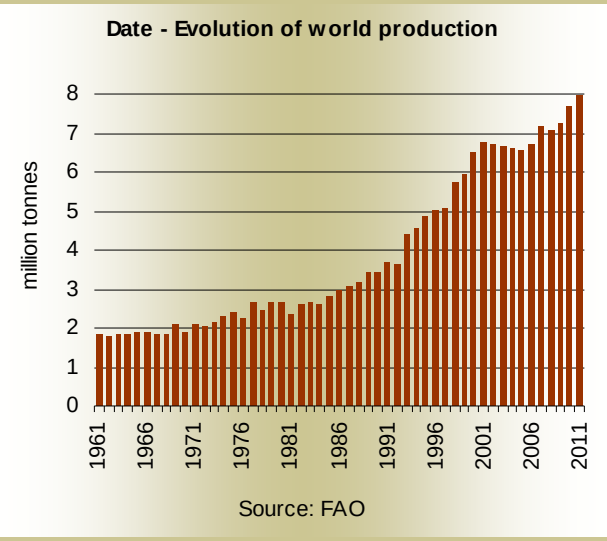
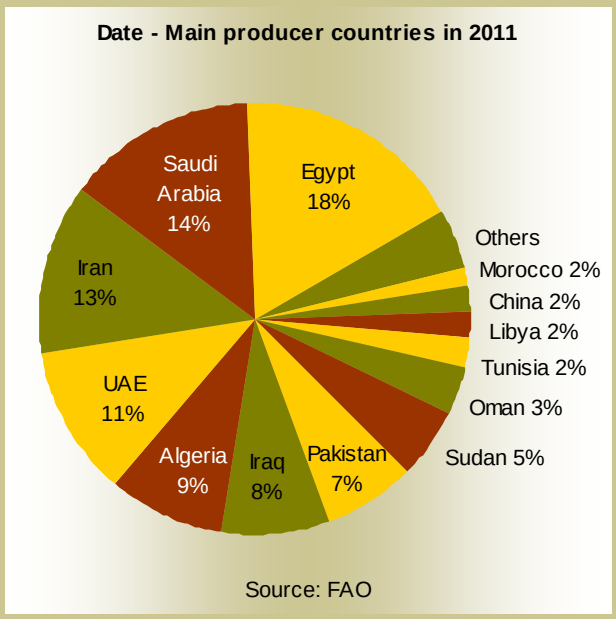


Date — Main producer countries in 2011	
tonnes	**Production**
Egypt	1 373 570
Saudi Arabia	1 122 820
Iran	1 016 610
United Arab Emirates	900 000
Algeria	690 000
Iraq	619 182
Pakistan	557 279
Sudan	431 000
Oman	268 011
Tunisia	180 000

Source: Faostat



countries account for nearly three-quarters of world date production.

The increasing role of China should be noted as production has increased tenfold since the 1990s, taking it to twelfth position in the world classification.

Production in the United States (in California and Arizona) is still increasing but the 30 000 t reached in 2011 is not very significant.

World exports increasing but still very small

Dates are a staple eaten mainly in Muslim countries, especially during Ramadan. The proportion of domestic consumption is therefore very large. It is estimated that only 10% of world production is exported today. Practically the entire Egyptian crop is for domestic consumption as only 1% of the volume is exported. Likewise, only 7% of Saudi Arabian production is exported. The leading exporters are the United Arab Emirates, Pakistan, Iraq, Iran and Tunisia.

The United Arab Emirates are the main date importers, taking 227 000 tonnes in 2010. They now have a key role in the world date trade: 4th largest producer, leading exporter and leading importer! Although domestic consumption is large, the Emirates now serve as a trade hub between the various Middle Eastern countries and the rest of the world. Dates imported by sea, mainly from neighbouring countries (Iraq, Iran, Saudi Arabia, Oman and India) are re-exported to destinations all over the world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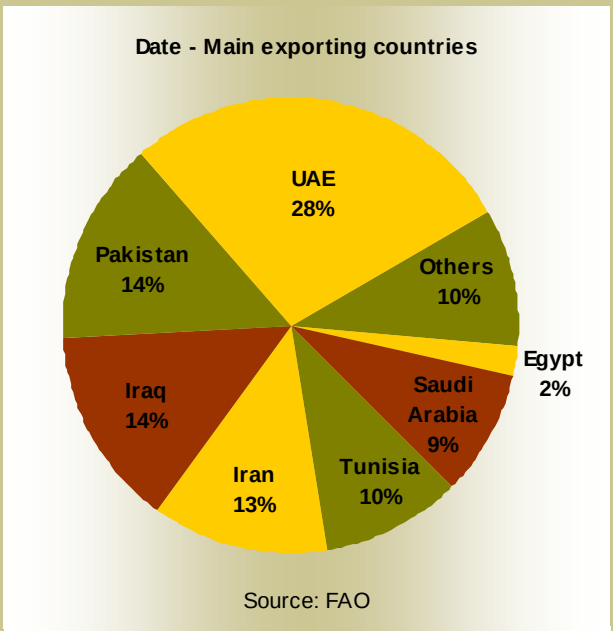
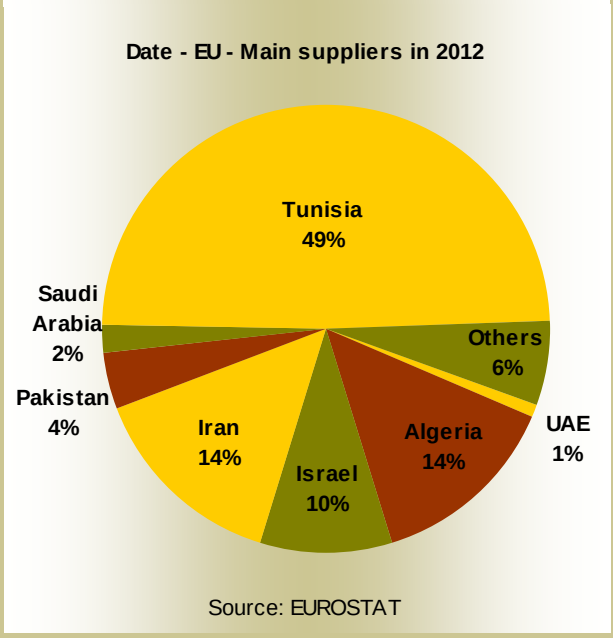


Source: FAO



Source: EUROSTAT

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(Japan, the Netherlands, Australia and Syria among others). Modern infrastructure, a central position and a certain political stability in a fairly unstable region enhance the UAE's role of hub.

India is the second largest date importer with 193 467 t imported in 2010, followed by the European Union (71 497 t) and Morocco (51 500 t).

The EU market is growing but still small

European imports form only 10% of the world date trade today. However, they have increased strongly in recent years, growing from some 50 000 t to 72 000 t in a decade, that is to say 44% growth.

With 28 355 t imported in 2012, France is Europe's leading date importer and plays the role of trade hub. An estimated 40% of the volumes imported to France is re-exported to the rest of Europe. This is explained by the close historic links between suppliers in North Africa and French importers/exporters. Thus 90% of French supply is from Mediterranean countries (Tunisia and Algeria) that benefit from duty-free exports thanks to trade agreements with the EU.

The United Kingdom is the second largest European importer, especially during the Christmas period, followed by Italy, Spain, the Netherlands and Belgium.

Very seasonal imports and stagnating consumption

Monthly French imports figures show that date consumption is markedly seasonal. Two peaks can be seen—one for the Christmas period and the other for Ramadan. Date consumption is therefore still very ethnic and festive.

The five leading European consumer countries are France, the United Kingdom, Germany, Italy and Spain. Apparent consumption has been stable or increased very slightly in recent years. French consumption is estimated to approach 250 g per person, a figure that has remained practically unchanged for several years.

In contrast, the greatest growth in Europe in the last 10 years has been in Sweden, Denmark and Finland where the quantities involved are still small at between 1 000 and 2 000 t. Even if these mar-

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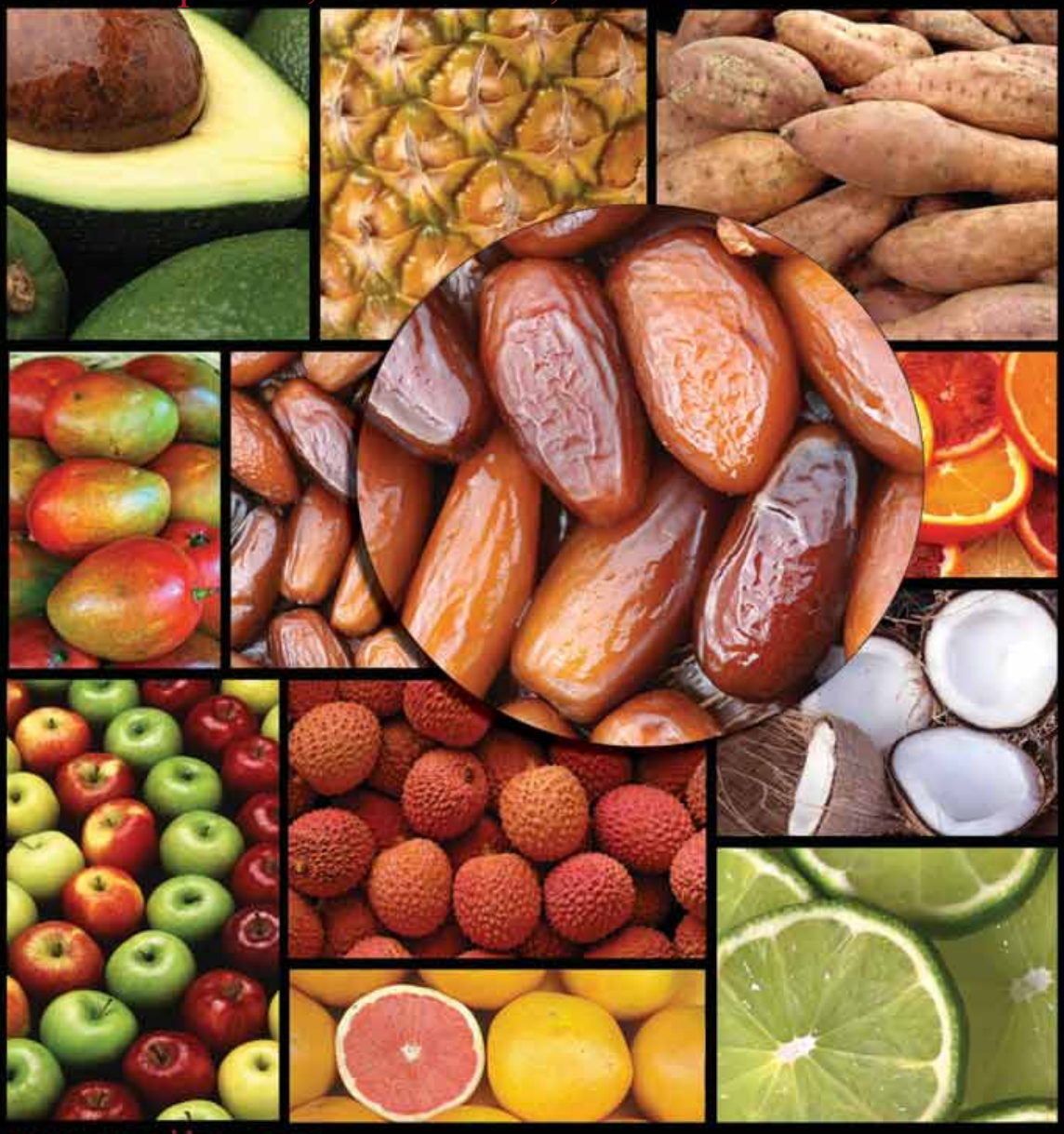

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Looking for a date?

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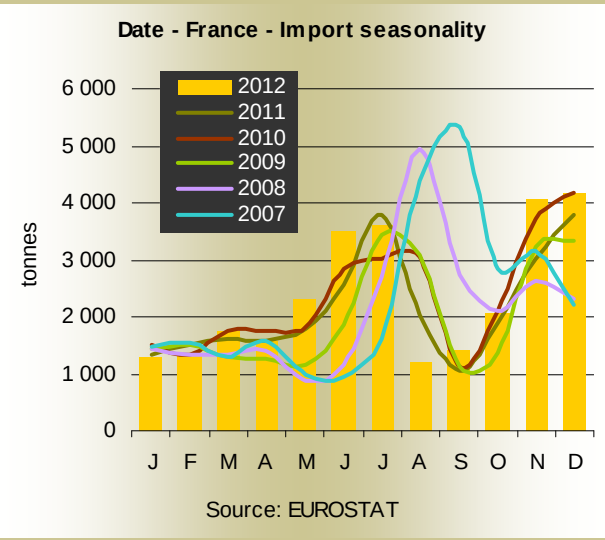
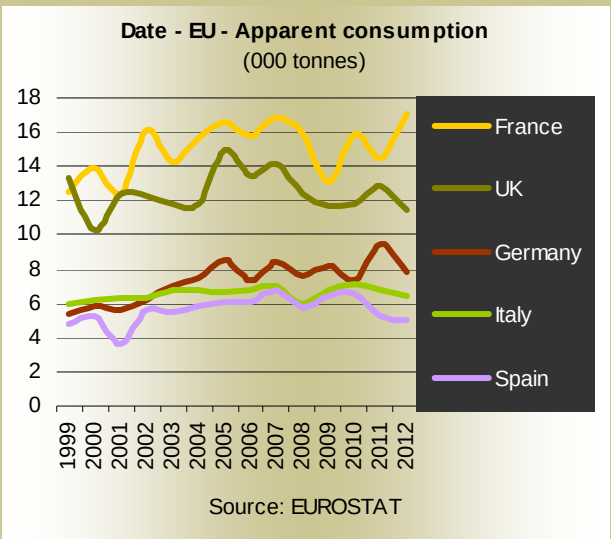
Date — Main varieties marketed in Europe	
Origins	**Varieties**
Algeria, Tunisia	Deglet Nour
Israel, United States (California)	Medjoul
Israel	Hayani
Israel	Bahri
Various origins	Other 'common' dates: Kenta, Allighi, Kouat Allighi, Sayer, Zahidi

Source: from FAO





kets are still modest, their dynamism and strong consumer purchasing power are an advantage for producer countries and may lead European market growth. This is not ethnic consumption but more the discovery of the fruit as a result of tourism and travelling.

Varieties and presentation

Only a limited number of the hundreds of existing date varieties is imported to Europe. The main varieties sold in the EU are 'Deglet Nour', grown mainly in Tunisia and Algeria, and 'Medjoul' from Israel and the United States. Other 'common' varieties ('Kenta', 'Alligh', 'Khouat Allig') are imported to France but mainly re-exported to other European countries where—as in the UK for example—they are mainly used in cooked foods or as ingredients for the food industry.

Dry dates rehydrated and coated with glucose syrup will keep for a fairly long time. These are available in shops practically all the year round, displayed with dried fruits.

Some dates are also frozen immediately after picking. Once thawed, their are refrigerated in the shops and keep for about ten days. This is the case of the variety 'Hayani'.

In contrast, natural dates available during the harvest season (October to January) are generally on the branch and packed directly in boxes with no treatment and are sold as fresh fruits.

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Customs tariffs

The basic customs tariff is 7.7 %. However, other tariffs are in force for countries benefiting from agreements. Iran and Iraq thus have a preferential 4.2% by virtue of the Generalised System of Preferences while Algeria, Israel and Tunisia have total exemption from customs dues.

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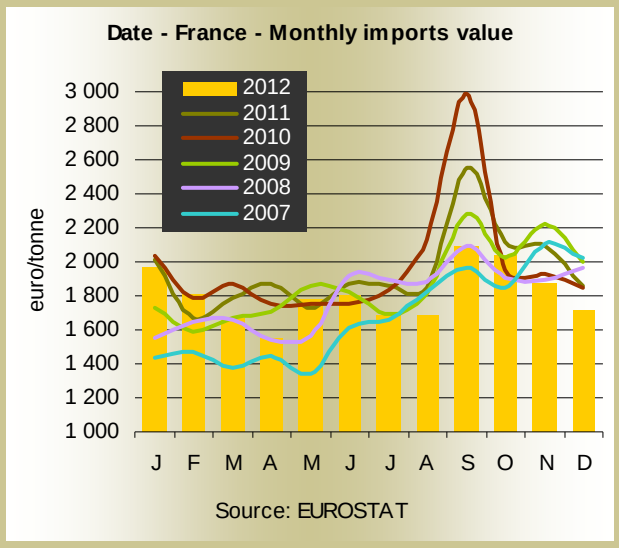

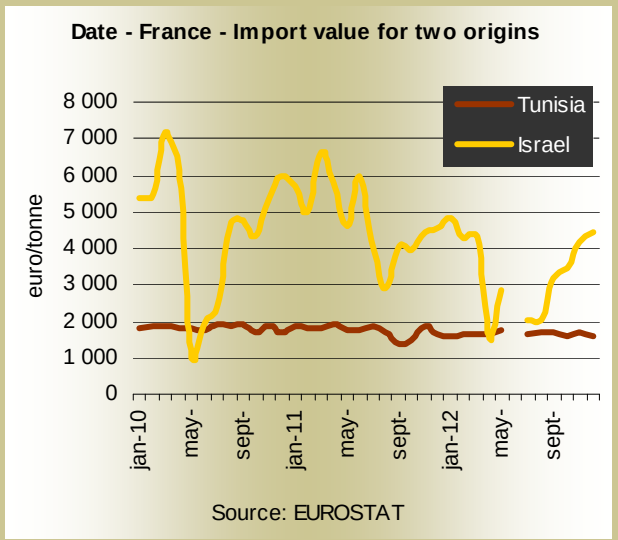

Untreated 'Deglet Nour' dates on the branch are sold mainly to wholesalers, loose in 5 kg boxes. There are also 2 kg and 1 kg boxes and 500 g bunches. The last two packaging types are mainly sold in supermarkets. Loose glucose-coated 'Deglet Nour' in boxes of 5 kg form a small proportion of the volumes imported and are handled by certain wholesalers who specialise in dried fruits. They are generally packed in 250 g and 500 g expanded polyurethane trays.

Stable prices varying little with the season

Analysis of overall import value (customs value) shows that prices are fairly even throughout the year, varying between EUR 1 500 and 2 000 per tonne. A price rise is seen in September at the beginning of the Israeli 'Medjoul' season. The top of the price range is reached during the Christmas period. Consumption peaks observed outside this period would not seem to be related to import prices.

Import values differ considerably according to variety and source. The prices of dates from Tunisia, the main 'Deglet Nour' supplier, are very stable throughout the year. There is no seasonal price feature. A conclusion is more difficult for dates from Israel. Most of supply consists of 'Medjoul', a higher grade variety sold at much higher prices than 'Deglet Nour'. However that may be, the price difference between the two production sources is considerable ■

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Sea freight

Dawn of a new reefer era?

At a figure just below 80c/cbft the TCE average for the first three months of 2013 is approximately double the value of the same period in 2012, which given the extensive demolition in the first half of last year, is probably the very least reefer owners and operators could have expected from the traditional seasonal peak. While taken in isolation it gives the industry some cause for optimism, the figure does not yet compare favourably with the three-digit yields in 2007 and 2008 when all the planets in the reefer firmament were perfectly aligned.

Of course a lot has changed since those heady days: the number of reefer slots available on containerships has increased dramatically as a result of the massive growth in the boxship fleet. Reefer container capacity has increased approximately 41% (to 2.14m TEU) since 2007; with the lines adopting predatory pricing policies to develop their reefer business, specialized reefer operators have struggled to compete. Equally importantly, TCE yields have been hit by the well- documented rise in the cost of fuel over the period.

Despite this, and although the statistics do not yet support the hypothesis, it is tempting to argue that a new era in reefer shipping has indeed begun. On the one hand the specialized reefer fleet has shrunk to manageable proportions, and although this year has demonstrated that there are still too many large and handysize fuel- inefficient units trading for the average TCE to return over 100c/cbft, these will disappear gradually over the next 2-3 years leaving a rump of quality tonnage that if well-maintained, could continue trading long past its historical average lifespan.

Conversely it is abundantly clear that the corner has already been turned in the small segment: at just over 100c/cbft the TCE average is double last year's average but also already on a par with the bumper years. Indeed there must be some real concern going forward for charterers of smaller tonnage – at an average age of 28 years for the 100'cbft-199'cbft units and 23 years for the 200'cbft-299'cbft these ships are the oldest

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and least fuel-efficient of the entire fleet. With no newbuildings in sight, operators are in prime position to leverage their equity.

This 'good news' for the reefer shipping business today is good news neither for charterers nor shipyards in the short term. While reefer owners and operators will be content to milk the equilibrium tilted slightly in their favour in order to recover losses incurred since 2008, the lines have declared a moratorium on any investment in new equipment until rates rise sufficiently to give them an adequate return. Although box rates appear to have risen the increases haven't been as spectacular or as broad-based as had been hoped. It won't be until the end of May until the world hears how successful (or not) Maersk Line has been in implementing its GRI when the line reports its Q1 figures.

More and more containers

The container lines are faced with something of a conundrum: on the one hand they need to raise rates – but on the other, with ever more newbuild tonnage appearing on the market they are under pressure to fill slots. Their task would be made easier if supply of capacity was tight. But it isn't! And with the reefer lessors taking a greater share of the market by commissioning the containers that the lines do not, and with two more reefer container manufacturing facilities due to start work by the end of 2014 this is not going to change in the short to medium term, unless all the facilities work at 25% capacity!

In order to replace de-commissioned reefer containers, factories will have to turn out no more than 100K TEU in 2014 if it can be assumed that a reefer container has a lifespan of 12 years. To put this in perspective the three existing factories delivered 225K TEU in 2013 and a record 305K TEU in 2012. The ironic and slightly bizarre twist to the story is that despite taking up the production slack, the lessors aren't making any money either.

The only choice the lines have is to hope that charterers and cargo interests swallow the argument that rates need to rise for the sake of continued investment and ultimately therefore, their safety. The problem for charterers is that if one line takes the initiative and all the others follow, they have no choice but to accede, even if they don't buy into the rationale - because they have limited alternatives.

While the lines struggle to make sense of reefer, there is growing confidence in the specialized sector. Perhaps the reefer business has finally weathered the storm? If the supply of capacity from both modes remains constant and demand rises, box and reefer rates will also surely rise. However it may be possible to reach another equally significant conclusion – if there is a genuine will among the lines to both raise rates and restrict the supply of capacity then it is also likely to be the case that they view the short term as a period of consolidation – instead of going for greater market share or expanding into new trades they will focus on extracting more value from existing business. If this is true they have, temporarily at least, called a truce in the battle with the reefers and a line in the sand has temporarily been drawn.

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What will be the effect of the widening of the Panama Canal?

Assuming demand for capacity is at least constant there are two factors that can alter the status quo: the first relates to the production of reefer containers. The second is how the lines adapt to the new, improved Panama Canal. A wider, deeper channel will allow larger containerships to transit, and large containerships are more scale-efficient than smaller units. Will this encourage the lines to drop their prices in order to target transatlantic business from those reefer customers on the west coast of South America and New Zealand?

Not necessarily. Just because larger vessels can transit, it doesn't mean they will automatically be able to attract new custom. Until the banana ports of Guayaquil and Bolivar are deepened for example, they will only be able to attend smaller boxships. It will be particularly interesting to follow developments at Maersk and its ambitions to develop its transpacific banana business. What will happen, for example, to the Alinport terminal project in Posorja, Ecuador, into which Maersk has already pumped USD 20m and which was designed principally for Ecuadorian banana shippers?

Further south, Chilean grapes will continue to be shipped in specialized reefers to the US east coast for non-logistical reasons while across the Pacific Zespri is unlikely to make significant changes to its reefer chartering programme for similar, non- logistics-specific reasons.

While larger boxships may be more scale efficient and therefore cost advantageous for the operator, they are scale inefficient for the reefer charterer and cargo interest. This is partly because the majority of larger units will be used in hub and spoke systems, fed by feeders and thus requiring transshipments at one and possibly both ends of the chain. And secondly because larger units tend to have loops with more port calls, slowing a process that for reefer typically demands speed from point A to B.

Forecasts too optimistic?

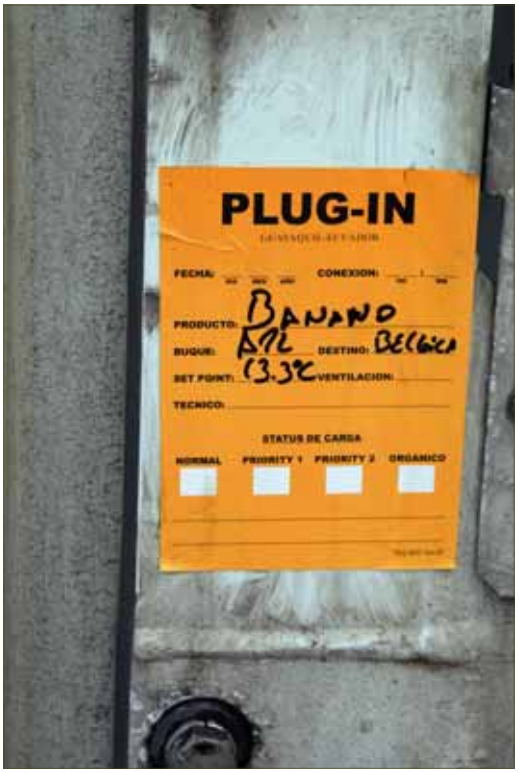
A full examination on the prospects for reefer isn't possible without a picture of potential future demand: according to last year's annual Drewry Report, the foremost authority on the issue, the worldwide perishable reefer trade increased by a whopping 54.5m tonnes between 2001 and 2011 at a combined annual growth rate of 3.9%, with seaborne trade reaching almost 91m MT in 2011. At the time of its publication Drewry was forecasting continued growth in 2012; beyond that, it said population growth levels and GDP levels would see trade increase at an average rate of over 4% a year to 2016. Most interestingly it said that the perishable reefer trade remains resilient to adverse economic conditions and future growth in cargo volumes was 'inevitable'. Really?


© Maurice Marcellin

It will certainly be interesting to see what the figures reveal in this year's Report and whether Drewry has modified this forecast or its sentiment. Drewry should not make the mistake of believing that just because the trade in reefer has grown at a certain rate for a certain number of years the rate of growth, or even the growth itself, will continue. Given the rise in costs of production, fuel and transportation on the one hand and stagnant demand in mature markets for many reefer products on the other, there is an argument to suggest that demand in traditional markets for core products has reached something of a plateau.

Drewry does acknowledge that import patterns have changed considerably over the past decade. It says that Western Europe has declined to a 38% share of worldwide imports – although still importing almost 66m MT of cargo in 2011. Eastern Europe's importance has grown from a 10% share in 2001 to a 14% share in 2011 – with cargo tonnage more than doubling over this period. But will the rise in GDP in the developing markets be sufficient and quick enough to offset the increase in cost of delivering reefer products to those markets?

With few exceptions the rate of growth in fruit production in the southern hemisphere for example has slowed or been halted. The volume of deciduous fruit exports from Chile, Argentina, Brazil, New Zealand, South Africa and Australia have slowed or moved into reverse. Investment in new or replacement production has fallen sharply as pricing no longer covers the CIF cost to market. Globally-traded banana volumes have stagnated for a similar reason.



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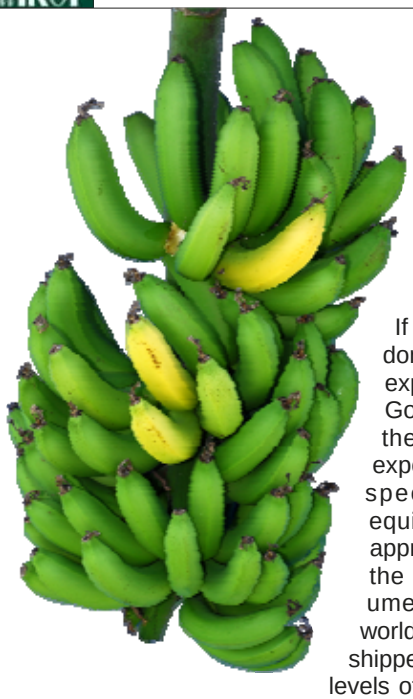
Southern Hemisphere citrus shipments on the other hand will grow as a result of extensive planting out in South Africa between 2004-06. Whether the country can successfully (profitably) ship all its citrus now a new working wage structure has been implemented remains to be seen. Peru is also an obvious exception because of its natural comparative and competitive advantages. The question is whether Peruvian volumes will grow on top of or at the expense of its competitors.

In its 2012 report Drewry was predicting an increase of 18.1m MT in the seaborne perishable reefer trade in the four years between 2012 and 2016, from 94.8m MT to 112.9m MT. Of this total Drewry believes that there will be 2.5m MT more bananas shipped, 1.2m MT more citrus, 1.3m MT more deciduous, 4.2m MT more fish/seafood and 5.1m MT more meat and poultry. Unfortunately the report does not specify from where or to where the additional product will be shipped.

And while it is possible to acknowledge a relationship between per capita GDP and demand for reefer product, it would be interesting to know from where Drewry sources data for the



supply side of the equation. If no-one is planting apple trees for example, how is it possible that more apples will be grown and shipped.

If banana volumes in Ecuador, by far the world's largest exporter, are constrained by Government, from where will the additional 2.5m MT be exported? To put this in perspective, the 2.5m MT is equivalent to 125m boxes – approximately 20m more than the annual Costa Rican volume and Costa Rica is the world's second largest banana shipper! At optimum productivity levels of 3 000 boxes per hectare this total would require a further 42 000 hectares of banana production. Unless the Correa administration reverses its current policy, such an increase in such a short period of time would require production to begin in a completely new origin. On the subject Drewry is not clear.

Is there really the potential to catch 4.2m MT more fish from the oceans or fish farming operations? And within 4 years? How will the extra 5.1m MT of meat and poultry be fed and at what cost?

While the metrics for demand potential are clear, the issue of supply chain costs is also not addressed by Drewry - yet the rising costs of production and transportation must surely ('inevitably') have an impact on demand levels, unless there is equivalent price inflation in the destination markets. With the majority of grocery business in the hands of a few powerful retailers and the world in the grip of a long recession there are two reasons why little will likely change at point of sale - in the short term at least. Low retail prices will inhibit the trade in perishable products.

The importance the Drewry figures carry should not be underestimated: not least when the report states that by 2016 the modal split will be 22:78, specialized reefer:container, changing from an estimated 29:71 split in 2012. The consequence of this shift, according to the report, is that the container lines will be carrying 20.6m MT more reefer product annually in four years time than they are today. 20.6m MT! Based on this forecast it is no wonder that the container lines and lessors are investing so heavily in reefer equipment and equally no wonder why two more reefer container manufacturing plants are being built.

But what if the assumptions behind the numbers are wrong? What if the premises are over-optimistic? In the context of the market position in early-to-mid 2013 the increases Drewry is predicting in demand do look over-stated. Of course it is just as easy to criticize forecasts as it is notoriously difficult to make them in the first place. However developments over the past 12 months, and not least the container lines' epiphany on reefer profitability, should add a few significant variables to the over-simplistic Drewry forecasting model in time for its 2013 report.

If, as seems likely, the lines and lessors persist in commissioning equipment on the basis of the Drewry and other forecasts, and there is no significant uplift in demand it won't be long before the world is awash with under-utilised reefer container capacity. Rates will remain depressed. And therefore for as long as the specialized reefer continues to demonstrate that it can compete on value terms, as it is doing so right now, the lines have a serious problem as they will find it even more difficult than it is today to raise rates. The only incentive the lines can possibly have for investing in reefer containers is for the contribution the boxes generate towards a particular voyage.

Then again, perhaps the reefer service on the menu will not (never?) be priced according to cost? In other words the reefer services offered by the lines become a means to an end and not an end in themselves, which for those reefer charterers and cargo interests that demand certain service levels, will not be enough ■

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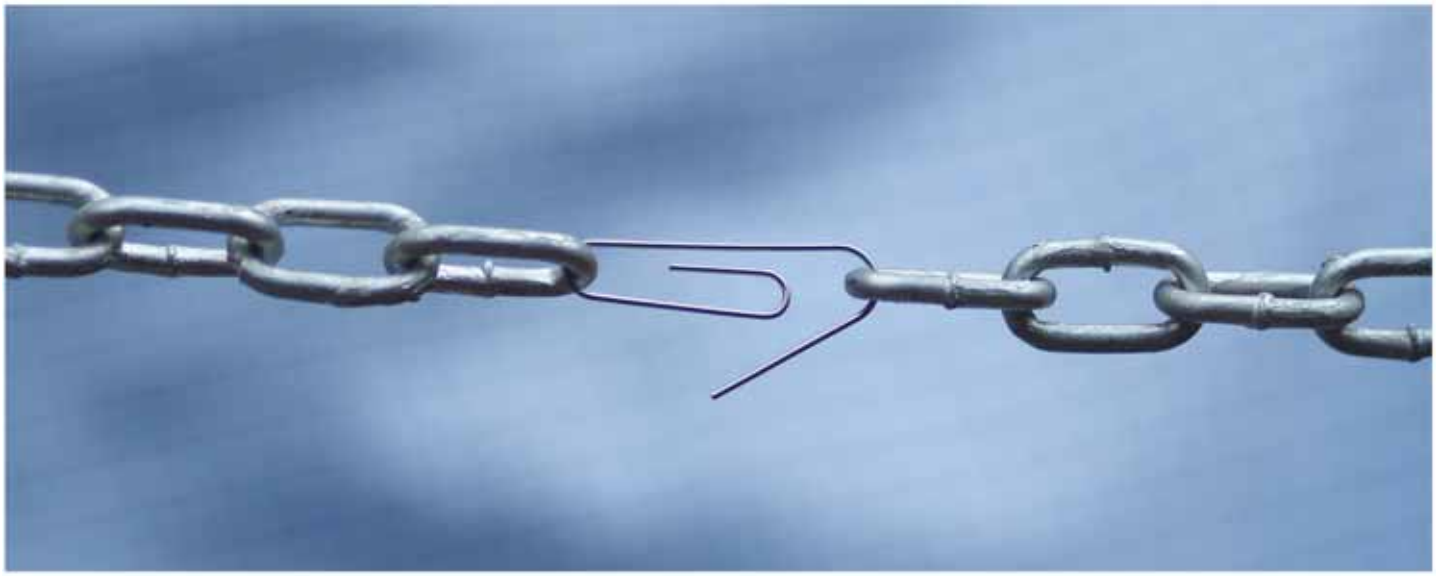
Information... your weak link?



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Litchi

A report by
Pierre Gerbaud

Contents

A few years ago, developing the European litchi market consisted of seeking new sources of supply in order to have a continuous supply of this fruit. Trade using northern and southern hemisphere seasonal features practically succeeded, with just one gap in part of September and October. However, the opposite trend has been observed in recent years with the appearance of gaps in spite of the emergence of new sources. Sales of litchis have now been refocused on the most plentiful period, that is to say from November to February. The sources supplying the European market outside this period seem to be losing ground gradually. Smaller quantities are exported from Israel and Thailand for shorter periods and newcomers such as Mexico, Vietnam and Morocco are having trouble in establishing a foothold. The litchi market is divided between a period of strong consumption at the end of the year, with affordable prices, and a more elitist market for the rest of the year with very small quantities and high prices.

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Litchi from Madagascar in 2012-13

Sunshine in the litchi sector!

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Last year, our report on the Malagasy litchi sales season had the headline 'Madagascar: the best year of the decade?'. This is out of date, given the results of the 2012-13 season. Indeed, the litchi sector in Madagascar displayed excellent performance for the second year running.


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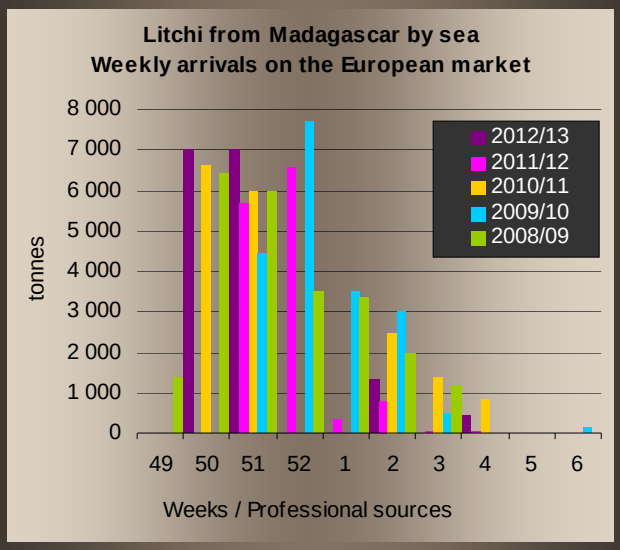
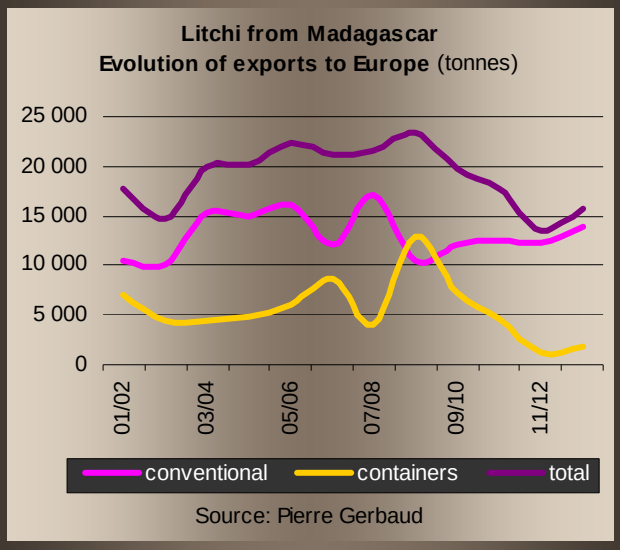




In the 2011-12 season, 14 000 tonnes of litchis was shipped to the European markets, of which 510 tonnes was by air, 12 250 tonnes in conventional ships and 1 280 tonnes in sea containers. Although the total is less than the 17 700 tonnes exported during the previous season, the financial results were clearly better. In 2012-13, Madagascar shipped some 16 220 tonnes: 460 tonnes by air, 14 000 tonnes in conventional ships and 1 760 tonnes in containers. The last season shows the dynamism of the sector by repeating in the success of 2011-12 and adding 2 220 tonnes. It is true that somebody fussy could say that logistic pressure meant that one of the two 2011 conventional ships had reduced forecasts by nearly 800 tonnes and so the increase recorded this year should be reduced. However that may be, the Malagasy litchi sector confirmed significant progress this year.

Forgotten earliness

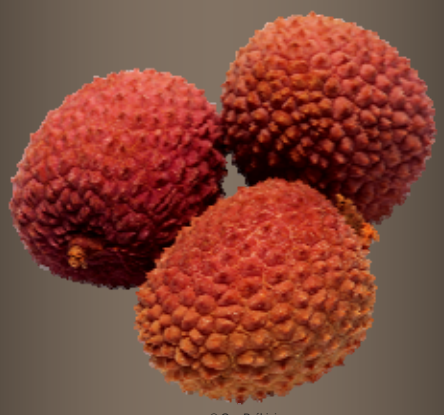
The litchi sales season is special in that every year has its variable factors that partly determine its profile. After a late start three years running leading to the setting up of meticulous logistics to deliver litchis from Madagascar for Christmas, the 2012-13 season promised to be fairly early. Each configuration has its own advantages and disadvantages. Although an early start means more peaceful logistic organisation in terms of loading and the time needed for transport, it is more complex as regards fruit quality aspects and retailing dynamics centred on the Christmas period. The satisfactory results reported by all for the last two seasons are in fact the result of two very different sequences.

A long and ample air transport season

The earliness of the crops in the Indian Ocean sources means the rapid, simultaneous start of the sales season, with large quantities from the beginning of November onwards. The increase in volumes in the first weeks of the season ran up against fairly unfavourable market conditions. Buyers were not particularly receptive as Christmas was still a distant prospect and they were not particularly inclined to buy produce whose retail price was still high. In the second half of November, wholesale markets were saturated by large arrivals from Mauritius and Réunion and this limited sales of Malagasy litchis. These were channelled more towards export markets and supermarket chains.

Although prices were still high, retail sector sales started with a view to the increase in supply by sea announced for Week 50. The strong rate of deliveries from the various sources and poor sales on a still cautious market resulted in the accumulation of stocks and a subsequent fall in prices. In Week 49, strong competition with produce from Mauritius led operators to drastically reduce deliveries from Madagascar. The latter sold slowly, resulting in storage and a decrease in prices that took sales to the limit of profitability, given the high cost of air freight. The reduction in volumes and awakening demand then resulted in the stabilisation of prices and even a slight increase at the end of Week 49, just before the arrival of the first fruits transported by sea. The last batches of fruits shipped by air sold at slightly higher prices at the beginning of Week 50.

In all, about 460 tonnes of litchis were exported by air in 2012, in contrast with 510 tonnes in 2011. The decrease seems to result mainly from the



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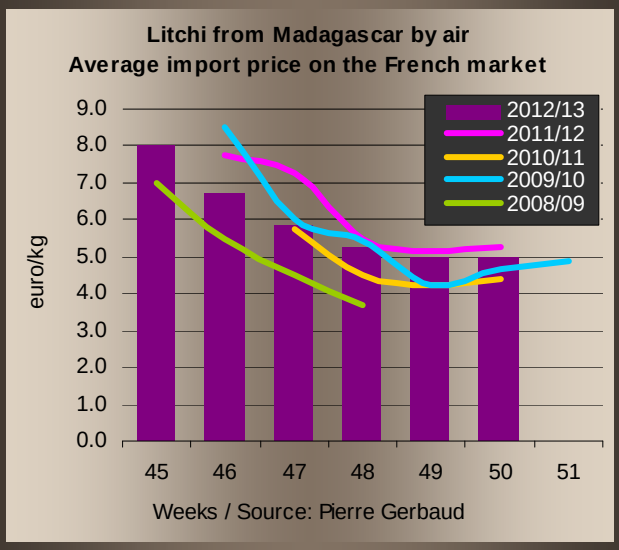

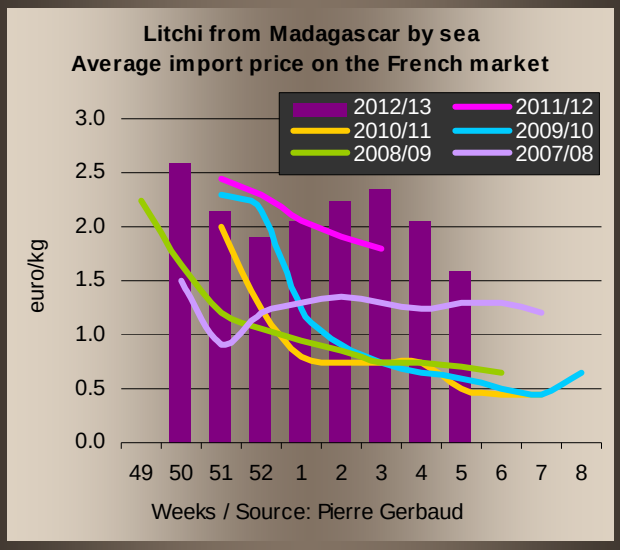

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pressure of the volumes released on the market by the various sources and the variations in competition between them. These fruits kept the market supplied for nearly six weeks, while the air season had lasted for four or five weeks in previous years.

Pressure from demand in December and a rise in prices in January

The earliness of the crop in Madagascar partly governed the pattern of the 2012-13 season. The official start of the harvest for exports by sea was set as 17 November, nearly ten days earlier than in 2011 (26 November). The ten extra days gave more scope for operators to prepare and pack fruits. It also meant that loading conditions were good and voyage times could be calculated for the release of fruits at suitable dates before Christmas. The 2012 calendar was also favourable. Christmas and New Year's Day were on Tuesdays and so litchis could be sold for the two weekends before these dates. These weekends when supermarkets are open are generally excellent for sales of Malagasy litchis, often with promotion operations for the occasion. The 2011 season did not have this advantage as the fruits carried by the first ship were not released on the market until the beginning of Week 51, with Christmas being the following Sunday.

The first of the two conventional ships scheduled for the season sailed from Tamatave on 21 November and docked at Zeebrugge on Tuesday 11 December. Unloading was performed satisfactorily in half a day. A large fleet of lorries assembled for the occasion took the fruits to the various European countries. Selling prices for the first batches were set at around EUR 2.70 per kg. This fell slightly to EUR 2.50 after a few days. Most of the cargo carried by the first ship was shifted quickly as demand was strong from supermarket chains by virtue of the schedules drawn up beforehand with consignees. Sales of Malagasy litchis at wholesale markets was more difficult because of higher prices (EUR 2.80 to 3.00 per kg) and competition from fruits imported by air from Réunion, Mauritius and South Africa which go for this market segment more readily. Pressure from demand enhanced by sales of fruits at more attractive prices in supermarkets resulting in the clearance of practically the whole of the cargo carried by the first ship before the arrival of the second.

The latter arrived in Zeebrugge on Monday 17 December. As for the first ship, unloading was fast and completed at midday on Tuesday 18 December. Operators agreed to lower prices for this delivery in order to maintain interest from retail distributors and consumers (EUR 2.00 to 2.35 per kg). These prices favoured the running of promotion operations during the last weekend before Christmas in order to stimulate sales that were slower than forecast. Demand ran out of steam a little after Christmas but remained strong. The fruits that arrived in the second ship sold more slowly and prices weakened further to around EUR 1.80 to 2.00 per kg. The remains of the second load made it possible to continue sales until the arrival of goods in containers expected in the middle of the second week of January.

The unforeseen factor that often has a positive or negative effect on the Madagascar litchi season came into play at this point. Late delivery of litchis

from South Africa, which was approaching its peak season, left fruits from Madagascar with no competition. Anticipation of the dip in supply made it possible to sell them better and prices recovered in the first week of 2013 to around EUR 2.00 to 2.10 per kg. The first containers from Madagascar were also late. The price recovery trend was confirmed and was even accentuated in the second week of January for good quality produce (EUR 2.20 to 2.30 per kg). A few batches of fruits of more delicate condition were sold at lower prices. The arrival of the first containers in the third week of January filled the supply gap of the first half of the month. Although demand continued to decrease gradually, sales were brisk and arriving fruits sold at high prices (EUR 2.20 to 2.50 per kg). A few containers of fruits in less than perfect condition were sold at lower prices and this modulated the overall results for the season. The end of the season was early, like the beginning, given the moderate tonnages shipped in containers. The last two weeks of sales first featured broadening price ranges and then a marked overall decrease in prices because of worsening fruit quality.

A proven strategy

In addition to the unforeseen price recovery in the first half of January resulting from the late arrival of containers from South Africa a d Madagascar, enhancing the financial results of the season, it has to be admitted that the strategy used by the litchi sector has paid off. The satisfactory 2011-12 season had rightly encouraged operators to use the same organisation in the 2012-13 season. This option was clearly positive.

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The method used for the last two years consists of a large number of measures that govern the structure of the season. They are based on both previously used and new factors. Matching the volumes exported to the capacity of the European markets was doubtless the first feature decided by professionals and this resulted in steadier, more profitable sales. The work started many years ago on the certification of export businesses was also intensified as 80 to 90% of these companies now have GlobalGap certification. This was initially purely a marketing approach but is now becoming a process for the organisation of companies. Increased surveillance of fruit treatment procedures and increased analyses of sulphur residues also form noteworthy progress. Investment by operators in substitute procedures or at least the accompaniment of traditional sulphur treatment is also an aspect of the consolidation of the litchi sector. Greater attention paid to harvest to treatment times and treatment to chilling times also improves produce quality and thus enhances the professionalisation of sector players. Logistic and trade aspects are also in the forefront. These efforts are praised by the European Union in the light of the results achieved in the last two seasons, highlighting the cohesion of the organisation that has been set up.

But nothing is final and the improvement of the quality of litchis from Madagascar is still an ongoing quest. Many possible lines for improvement have only been glimpsed or lightly touched on so far. But given the results, it is difficult to imagine sector professionals not using this unanimously appreciated organisation in the next season ■

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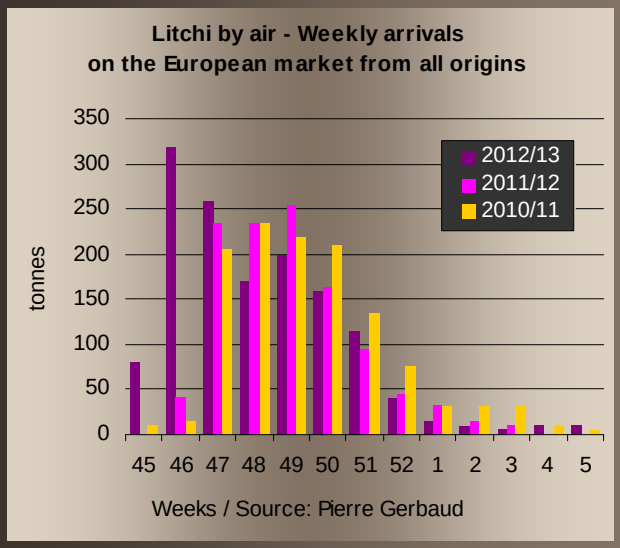
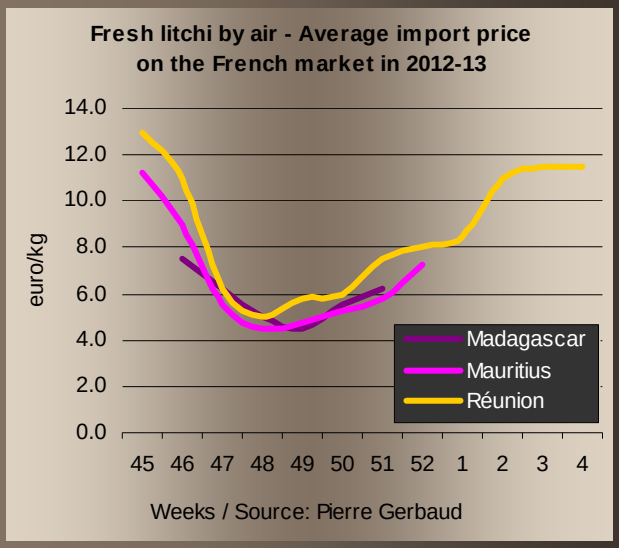
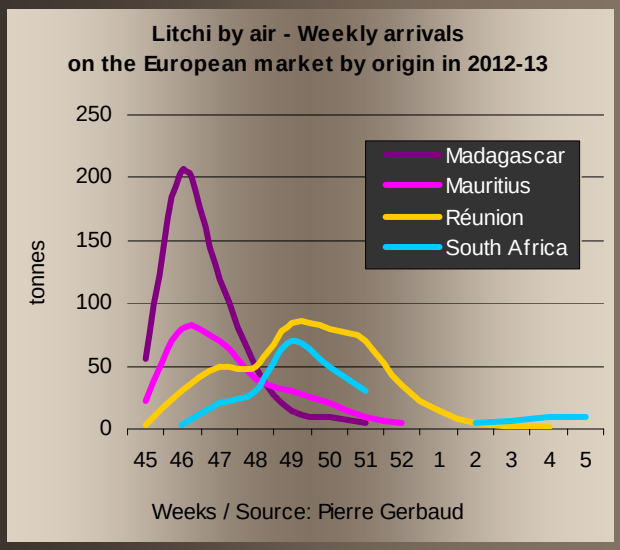
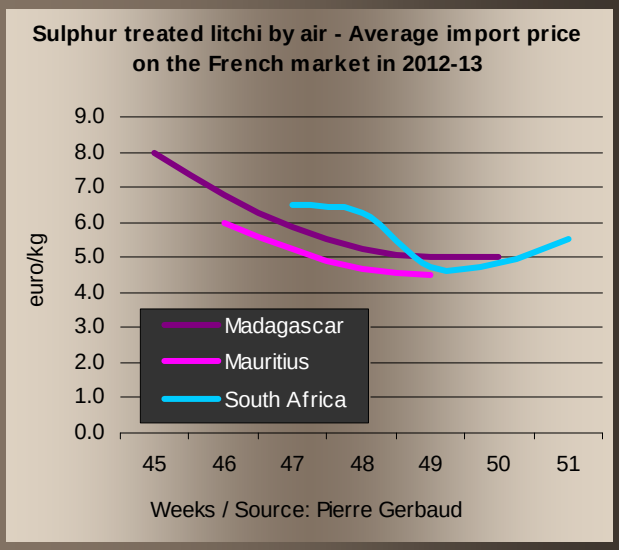
Summary of the 2012-13 air litchi season









2012-13 litchi season

The other Indian Ocean sources

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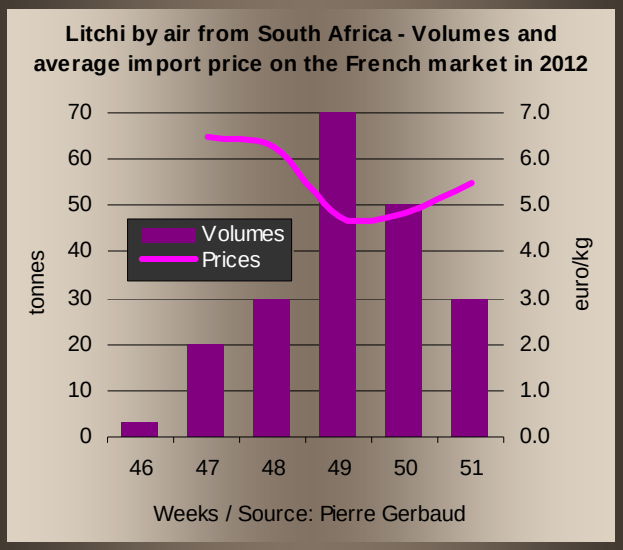
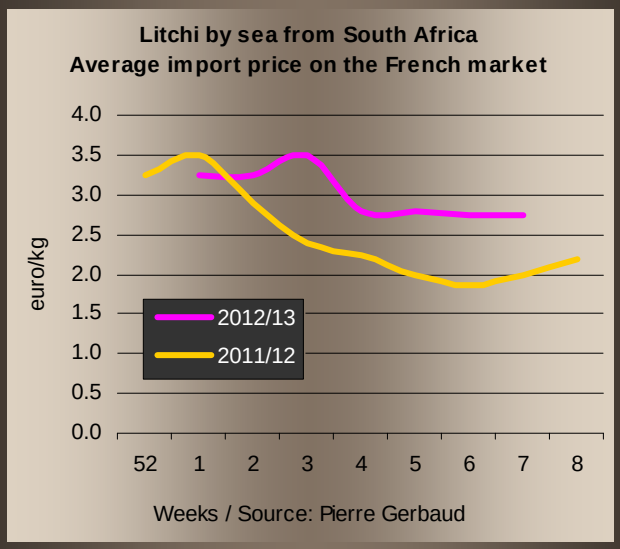
South Africa, Réunion and Mauritius are still complementary sources, shaded by the giant, Madagascar, during the main season for litchi on the European market from November to February. Although the volumes exported from these minor sources are much smaller, they are important in terms of market segmentation. They thus use outlets that are parallel to supply from Madagascar thanks to a varying degree of competiveness and specific features of the fruits (fresh produce, size grading, etc.). A competitive advantage is also observed especially during the first part of the season when shipment is by air only.





South Africa

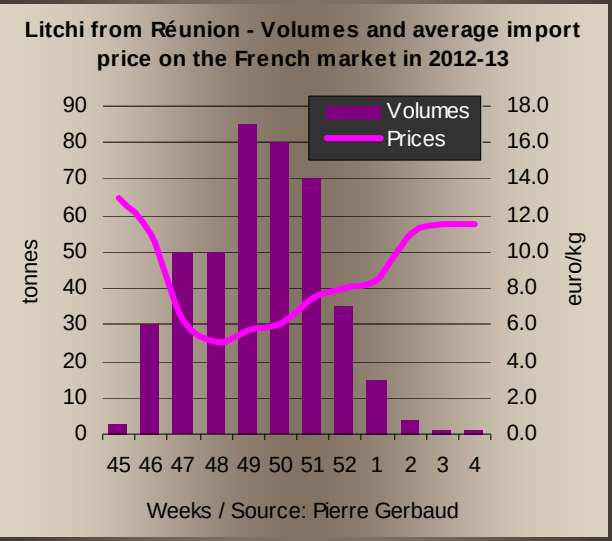
Irregular deliveries and quality problems

The South African season was a little later than the others, starting with small air shipments in Week 46. Volumes did not increase until the following week. South African exports peaked in Week 49 but without equalling the volumes shipped at the same time in 2011. Competition from the other sources doubtless limited South African exports even though the produce was not aimed at the same clientele.

After fetching higher prices in the first weeks of the season, the prices of South African litchis shifted to approach those of the competition. As in previous years, these better graded fruits with good organoleptic qualities sold well, mainly on wholesale markets. Sales continued after the arrival of the first shipments by sea to meet specific traditional trade demand. A few batches shipped by air arrived in January. These were treated and untreated 'Mauritius' fruits, thus diversifying supply from South Africa. Although litchis from this source have a good image, quality was fragile this season with frequent fungal attacks that reduced the selling price of certain batches.

The sea transport season started later than planned. Initially set for the last week in December, the first containers did not arrive in Europe until the second week of January, thus increasing a dip in supply that benefited fruits from Madagascar that had arrived in the second conventional ship. South African deliveries were fairly irregular, making customer fidelity difficult. The litchis shipped in containers also displayed quality problems that sometimes obliged operators to make price concessions or discard the worst batches. However, good quality fruits sold well at distinctly higher prices than those of the preceding season. The crop in South Africa was somewhat later, depending on the production region, and the season continued after the end of sales of fruits from Madagascar. In February, South Africa was the only supplier of litchi to the European market and so prices were firm and stable. Demand for South African produce also increased again in the first half of February with the Chinese New Year celebrations. The export season finished in the second half of February with a few batches of Red McLean sold at EUR 3.00 to 3.25 per kg.

In spite of irregular deliveries, the volume exported from South Africa totalled around 3 600 tonnes, a substantial increase on the total of some 2 000 tonnes in the previous season. South Africa is thus still the second largest exporter after Madagascar. It contributes a signifi-



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cant complement by the segmentation of the range with strict selection of fruits and fruit size.

Réunion

A substantial and difficult season

After the record volumes (more than 400 tonnes) shipped during the 2010-11 season, Réunion reduced its exports considerably in the 2011-12 season as a result of the small crop caused by poor weather. Quantities were large again in 2012-13 at 420 tonnes, beating the record set in 2010-11. Like most of the sources in the Indian Ocean, Réunion benefits from good natural conditions resulting in an early harvest and large production. Although this is a positive factor, it applied to the whole of the Indian Ocean and, resulting in particularly fierce competition.

The first litchis from Réunion appeared on the French market at the beginning of November. The symbolic quantities concerned fetched very untypical prices (EUR 13.00-14.00 per kg). Prices decreased considerably in the second week of sales first because of the massive increase in the total quantities available and secondly because of the poor receptiveness of the market. At the beginning of the season, consumers were little inclined to purchase fruits of a festive nature at particularly high retail prices. The decrease in prices was confirmed in Week 47 and became more marked. They decreased daily, and in the end lost 50% (EUR 5.50 to 7.00 per kg). Prices then differed according to the presentation of the fruits. Destemmed litchis were at the bottom of the ranges observed and bunches at the top. Fruits on the branch fetched intermediate prices. This trend continued throughout the season, with an increase in the difference between minimum and maximum prices.

The market was over-supplied in the second half of November and reached its lowest level, resulting in the accumulation of stocks that affected fresh fruits most because of their perishability. The trend reversed at the beginning of December as a result of the strong decrease in deliveries from Madagascar and Mauritius and also because of an increase in demand at the approach to the Christmas period. The arrival in Week 50 of the first litchis shipped by sea changed the profile of the market again. This produce was little sold on wholesale markets, leaving more scope for untreated fruits that were more at home there. Prices recovered markedly in the two weeks before Christmas while the volumes received increased. How-

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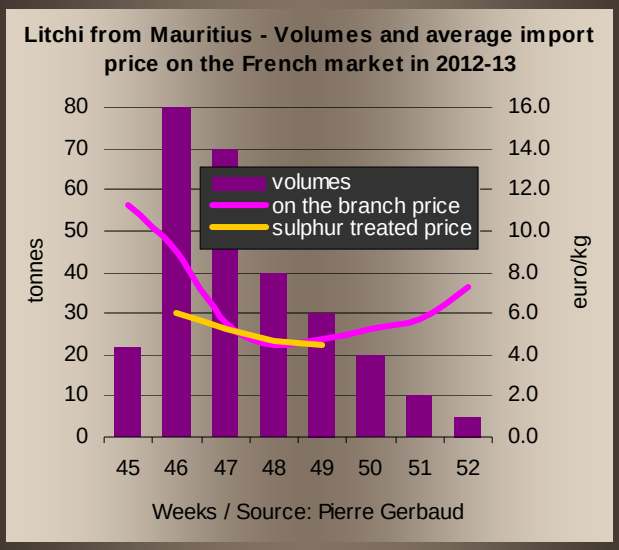


© Philippe Cao Van

ever, the price difference between destemmed fruits and bunches became lastingly marked: the former fetched EUR 5.00 per kg while the latter were sold at EUR 7.00 to 10.00 per kg. The volumes shipped from Réunion fell by half after Christmas, allowing prices to hold and even increase.

The Réunion season started earlier and ended more rapidly than in other years. It continued until the third week of January but with only marginal volumes. Prices continued to increase, nearly reaching the levels observed at the beginning of the season. At the end of January, the last shipments were disturbed by cyclone Dumile. However, it seems that this did not directly affect the litchi production zones.

Réunion anchored its position once again in a particularly competitive context in which supply from most Indian Ocean sources converged on Europe simultaneously. It is true that the fact that only fresh fruits are exported from Réunion is a definite advantage as exports are focused on the traditional quality market. However, the market is no proof against competing produce whose omnipresence weighs on selling prices. The early start of the season well before the Christmas period complicated the sale of produce whose retail price is high. Litchi from Réunion seems to find its place on the market just before the holiday period in a fairly narrow distribution channel. The difference in selling prices according to presentation (destemmed, on the branch, bunches) is a clear illustration of customer segmentation. This feature is probably more marked during the current period of economic stagnation.

Mauritius

Large volumes but a difficult market position

Litchi exports from Mauritius during the 2012-13 season totalled some 270 tonnes, a record for a source that generally ships 120 to 150 tonnes. The record is particularly important as it came after the serious shortfall in 2011-12, when the total for the season was hardly 110 tonnes. Mauritius has a difficult position every year. It has the capacity to kick off the Indian Ocean season with early fruits but is exposed to frontal competition from neighbouring sources with greater production potential. This season again, Mauritius suffered from sales conditions on the European market. The 'early fruit' aspect was wiped out by the earliness of the harvest in the main supply sources. Indeed, the first batches from Mauritius reached Europe at the same time as the larger volumes from Madagascar.

© Clio Delanoue

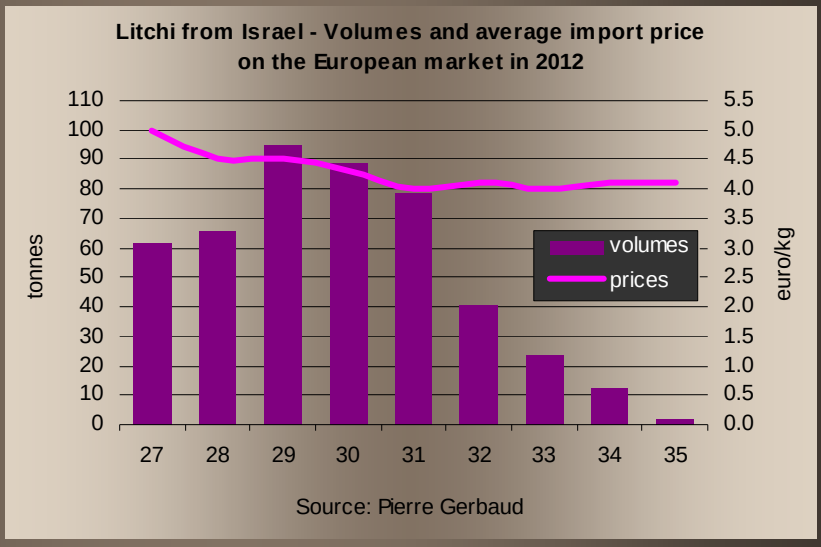
Israel

A recentred season

After a longer 2011 season with large volumes shipped (620 tonnes), Israel seems to have refocused on the summer litchi market. The some 470 tonnes exported in 2012 is the same as the figure for 2009, which marked the decline of a country that shipped 600 to 800 tonnes at the beginning of the 2000s. The 2011 season held a glimpse of a renewal of the interest in this fruit. The last season seems to indicate the opposite, unless the reasons were conjunctural. It is true that the litchi market is far from dynamic in the summer. However, supply at other times of the year maintain a current of business and satisfy a small number of customers, an important feature for anchoring an exotic fruit in European markets.

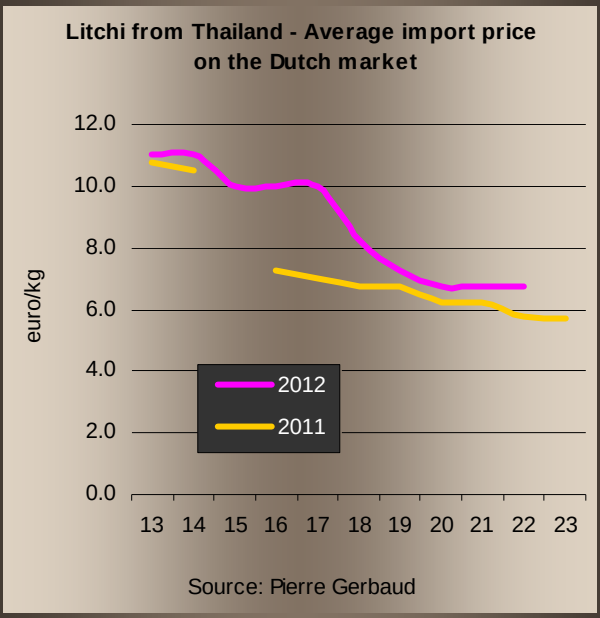
The 2012 Israeli season is hinged mainly on the 'Mauritius' variety, with the first batches arriving in Europe at the beginning of July, as in most previous seasons. With an asking price of around EUR 5.00 per kg, the first shipments were shifted without great enthusiasm as cheaper seasonal fruits were available. Prices then fell as supply increased, peaking in the second half of July. Prices were down to EUR 1.00 per kg at the beginning of August. They stabilised at this level until the end of the season in the last week of August, with the volumes released decreasing strongly.

The maintaining of comparatively stable prices during the season appears to show that the volumes shipped roughly match natural market demand, strengthening the trade position for the produce. The larger volumes shipped during the previous season had sent prices down more markedly, with selling prices of EUR 3.00 to 3.50 per kg. Shipments were recentred on a shorter period making sales stronger and avoiding the low prices of poorer fruits at the end of the season. However, this source has certainly lost some of its originality by seemingly abandoning its varietal diversification with 'No Mai Chi' (seedless) and 'Yellow Red', that had extended Israeli exports until practically mid-October in 2011.



Thailand
Stagnation

Thai litchi exports to the European market were estimated at 500 to 600 tonnes in 2011. The 2012 season seems to have been about the same, with slightly more than 600 tonnes. The Thai season is a short one, running from April to June and generally stopping when the first Israeli litchis arrive. This confirms the difficulty of selling produce whose peak consumption is at the end of the year at lower prices. The meteorological problems that affected the country at the end of 2011 may also have reduced production. Export of litchis is just one market segment from this source, where a substantial processing industry is developing, producing canned litchis in particular. The decrease in its supply in recent years is keeping Thailand in the trade segment of exotics shipped by air and sold at high prices.



The usual week or two weeks with no real competition allowing the sale of the limited quantities available at high prices were not there this season. However, Mauritius has the advantage of being able to adapt supply by adjusting shipments of fresh and treated litchis in the light of sales conditions. This facility was also well supported by excellent air freight rates—half the figure applied to competing sources. The limiting of approach costs made up for the higher cost of labour in Mauritius than in Madagascar for example.

Nevertheless, the price of litchis on the branch from Mauritius fell during the first week of sales under pressure from the cumulated tonnage reaching the European markets. Offered at EUR 13.00 per kg at the beginning of Week 45, they changed hands at EUR 10.50 to 12.00 per kg at the end of the week. The price fell from EUR 10.00 to 7.00 per kg during the following week and the trend continued until Week 49 when the level stabilised at between EUR 4.00 and 5.00 per kg. The reduction of the tonnages shipped from both Mauritius and Madagascar favoured a firming of prices. This was confirmed just before the holidays (EUR 5.00 to 6.50 per kg) as demand was brisker. In the last week of the year, which marked the end of the season for Mauritius, prices increased to EUR 7.00 to 7.50 per kg for very limited quantities.

Exports of treated fruits were more concentrated in time. Operations started in Week 46 and finished in Week 49 just before the arrival of the first ship from Madagascar. The price movement displayed a fall from EUR 6.00 to EUR 4.00 to 5.00 per kg, much the same as the price of competing produce. The prices of treated and fresh fruits matched in Weeks 48 and 49, a feature rarely observed. The fall in the price of fresh fruits was probably speeded up by their greater fragility and shorter shelf life in a context of massive supply causing the accumulation of stocks.

The loss of the early fruit position at the beginning of the season as a result of the earliness of all the Indian Ocean harvest considerably hindered the sale of litchis from Mauritius. The substantial supply from the various sources aggravated the worsening of market conditions in a context that was little favourable for the sale of fruits at high prices. The twin position of Maurice with treated and fresh fruits possibly prevented disappointing sales. The competitiveness of Mauritian fruits is a strong point for a source whose production is still smaller and more fragile than that of the other sources in the region. It made it possible to maintain market presence during the peak air freight supply period ■

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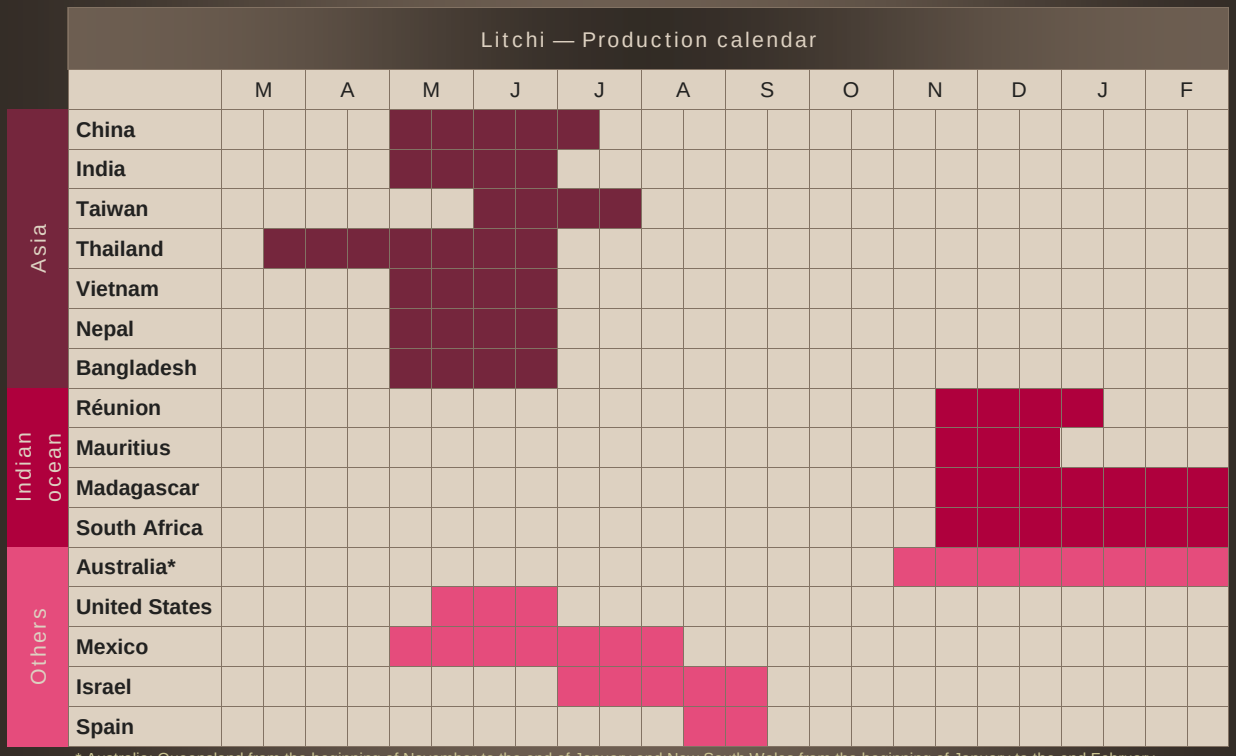
Litchi, tamarind, cashew apple, jackfruit, sapotilla — European Union imports (estimates)					
Tonnes	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**
Total	**31 041**	**26 753**	**22 852**	**19 807**	**23 682**
Total extra-EU, of which	**29 625**	**26 580**	**22 162**	**17 866**	**21 121**
Madagascar	24 286	18 877	16 039	12 800	13 709
South Africa	1 516	3 490	2 871	2 554	4 416
Mauritius	173	168	225	89	286
Thailand	2 050	2 130	1 550	1 185	1 430
Bangladesh	290	239	398	351	358
India	83	141	11	13	44
Pakistan	14	404	10	4	18
Israel	1 066	903	755	730	732
China	148	228	305	139	127
EU production Spain	**1 416**	**173**	**690**	**1 941**	**2 561**

Source : Eurostat - code 08109020 (litchi, tamarind, cashew apple, jackfruit, sapotilla) then code 08109020 (litchi, tamarind, cashew apple, jackfruit, sapotilla, carambola, passion fruit, pitahaya)

Litchi, rambutan, carambola, passion fruit — Japanese imports													
tonnes	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Total	**1 832**	**1 601**	**1 452**	**332**	**891**	**654**	**697**	**581**	**311**	**368**	**524**	**457**	**556**
China	1010	800	1150	178	689	426	569	445	150	209	349	293	408
Taiwan	576	286	187	33	162	199	108	97	124	129	131	137	126
Mexico	29	33	19	32	8	8	17	37	35	30	41		
Thailand	155	349	20	3	0	0	0	0	0				
Australia	52	123	75	84	28	21	1	0	0		1		
Others	10	11	2	1	4	1	2	1	0	0	2	27	22

Source: Japanese customs, code 81090210

Litchi — Production calendar



* Australia: Queensland from the beginning of November to the end of January and New South Wales from the beginning of January to the end February

Litchi quality defects

Photos © Pierre Gerbaud

Ageing fruits – dull appearance – shell browning and drying

Puffy fruits

Fruits picked too early

Ageing fruits – too long a gap between harvesting and sale

Puffy fruits

Unattractive colour resulting from lack of sorting

Oxidation of the shells of non-treated fresh litchis

Aborted and double fruits

Satisfactory colour (for reference)

Uneven colouring resulting from sulphur treatment

Different sizes in the same packaging


Stalk torn off


Moulds (*Penicillium*)


Black rot (*Aspergillus* spp. and *Pestalotiopsis*) and mould


Mould spots (*Penicillium*)


Strong mould attack (*Penicillium*)


Sulphur dioxide burn damage and double fruit


Spread of mould spots (*Penicillium*)


Black rot (*Aspergillus* spp.) and mould


Sulphur burn as the fruits were wet before treatment


Rots and isolated moulds (*Penicillium*)


Black rot (*Aspergillus* spp.)


Burn caused by sulphur treatment and moisture

Cultivation of litchi

by Christian Didier

© Guy Bréhinier

Requirements of litchi

Specific climatic conditions are required for litchi growing but the tree is not very fussy about soils. It is also little susceptible to viral diseases.

Cultivation zones

Litchi requires a warm, humid climate. In order to flower, it needs a vegetative resting period induced by a cool, dry season. A slight fall in temperature and relative humidity may induce flowering in some humid zones. A good supply of moisture is essential from the appearance of the flower spikes until harvesting.

Windbreaks

The position of the land must allow good lighting. Poorly drained low-lying land should be avoided, as should steep slopes that hinder the mechanisation of maintenance work. The land must be sheltered from the prevailing winds and from sea spray near the coast. If there is no natural protection (relief, vegetation), windbreaks are installed around the field and even inside it if it is large or very exposed. Wind breaks consist of fast-growing trees with good anchorage in the ground (filao, shisham, acacia and others) planted in dense rows and require maintenance (fertilisation, irrigation and pruning). They must be allowed sufficient space.

As far as possible, wind breaks should be installed a year before the litchis are planted to give protection from planting onwards. A wind break provides protection for a distance equal to ten times its height. They should be planted closer together in sloping land. They sometimes do not have any effect in extreme cases.

Soils

Litchi adapts to numerous types of soil but prefers slightly acid soils (pH 5.5 to 6.5 and 8 or higher in some parts of India) that are rich in organic matter, deep and well drained. Although it can stand having 'wet feet' temporarily near rivers, prolonged submersion can be harmful. Drainage is all the more important as litchi is grown in zones with high rainfall and often in low-lying areas protected from wind.

The creation of orchards

Soil preparation

Planting in recently cleared land in which stump and root debris enhance the development of root rots should be avoided. If necessary, surface drainage is ensured by levelling and subsoil drainage by a network of ditches. If cultivation can be mechanised, deep subsoiling is followed by ploughing, possibly after the application of manure and phosphate and potassium fertiliser (in the light of the results of soil analysis). When the trees are planted in holes, inputs are applied at this stage.

Plants

Propagation is usually by air layering using trees noted for the quality of their production. The layers obtained during the hot, humid season from branches 10 to 15 mm in diameter and 0.50 to 0.70 m long have a small necrotic root point at the cut that heals quickly. The root system is also better balanced with the aerial part. After separation, the marcots are cultivated in pots in a nursery for 3 or 4 months before being transplanted to the orchard.

Plantation density

The litchi tree displays considerable growth. Today, planting distances are 10 x 10 m or 8 x 10 m, that is to say a density of 100 or 125 trees per hectare. Nevertheless, plantation at 8 x 6 m (208 trees per ha) or 8 x 5 m (250 trees per ha) can be envisaged in more intensive cultivation. Annual pruning is necessary in this case. The orchard can be thinned by gradually cutting back the trees when they begin to hinder each other and then, in the absence of an effective pruning method, by felling one tree in two along the row.

Planting

Planting must be performed with a strict layout and perfectly aligned in each direction. If cultivation is not mechanised, a 0.8 x 0.8 x 0.8 m (500 litres) hole must be dug at the position of each seedling. The soil removed is then mixed with about 2 kg potassium sulphate + 2 kg natural phosphate + 25 to 30 kg well-rotted manure. The hole is then refilled with this mixture. A slight mound is formed as a result of the manure application and the expansion of the soil. The plants are installed in the mound and staked.

Marcots are planted inclined in the opposite direction to the wind and staked. They are thus less exposed to the wind and root better. The plants must always be watered abundantly after planting. In cool zones, they must be sheltered during the winter following planting.

Orchard maintenance

Training pruning

As for other fruit species, it is sought to train the tree on a single trunk with horizontally spaced, regularly distributed main branches. Care must be taken in the early years to prevent the forming of shoots on the trunk or the main branches that have a very closed angle, following the natural tendency of litchi. These shoots are extremely weak points during strong wind.

Soil maintenance

The soil must be bare along the rows or under the foliage in the early years. Spontaneous inter-row vegetation must be kept down. Short-cycle, small growth intercrops can possibly be grown during the first three years and managed in such a way as not hinder the trees.

Irrigation

Litchi is very susceptible to water stress throughout the fruit growth period and the vegetative growth period that follows the harvest. Irrigation is necessary in case of shortage of water. Stress during fruit setting causes substantial fruit drop. Different irrigation systems can be envisaged. Microjet irrigation is satisfactory. At least 200 mm water per month must be applied (according to soil type, the age of the trees, the climate, etc.).

Maintenance pruning

The fruits are in clusters at the extremities of the branches. The latter are broken at harvesting. However, this practice does not enable control of the volumes of the trees. The removal of dead wood, of small inner branches and branches that prevent sunshine from entering the tree is recommended.

Litchi growth is fast and soon becomes exuberant. The trees must therefore be controlled. For this, annual pruning is performed just after the harvest. The trees are usually too dense. The aim is to aerate them by allowing as much light as possible on the foliage and to keep them at a suitable height to make harvesting easier. The final result of pruning should be dome-shaped trees.

Fertilisation

Fertilisation is an important factor. It promotes good vegetative growth after the harvest and makes up for the exporting of minerals in the fruits. After the active vegetative growth period of about four months, litchi needs a short period of stress (nutritional, water, heat or other) to allow flower induction.

Doses are modulated according to the date of application:
- after the harvest: 1/2 of the dose;
- at panicle emergence: 1/4 of the dose;
- after 'June drop': 1/4 of the dose.

Fertiliser is applied to the ground beneath and at the limit of the foliage. Trace elements are applied by leaf spraying at fruit setting (boron, calcium).

Harvesting

Traditional harvesting is performed by hand with 'bunches' of fruits of the branch stored in bales or crates containing 10 to 15 kg only so that the fruits at the bottom are not crushed. These hand-made bales conserve good humidity around the fruits, preventing them from drying out. It is better to use slightly ventilated plastic crates to avoid crushing the fruits. The treatment and marketing of fruits are rapid to avoid the peel discoloration resulting from drying. Litchi is not a climacteric fruit and its biochemical characteristics change little after harvesting, except for gradual deterioration. Fruit maturity is generally appraised on the basis of colour, peel texture and tasting. It is considered that a soluble dry matter/acidity ratio of 2.1 to 2.7 corresponds to optimum quality.

© Régis Domergue

Litchi - Applications recommended
Grams per tree

Years	N	P	K	MgO
1	50	10	40	15
2	80	10	60	20
3	140	30	105	40
4	210	45	160	55
5	230	65	265	80
6	380	85	345	105
7	470	105	430	125
8	570	125	520	155
9	670	150	610	180
10 years and +	920	210	840	240

Pests and diseases

Warning: treatment must be applied in conformity with the regulations in force in the producer country and in the destination country.

Main fruit pests

- ***Cryptophlebia peltastica* and fruitfly**

Cryptophlebia lays eggs on immature fruits. The small caterpillars bore into the fruit to the seed for the nymph stage. The wound opens the way for other pests, especially fungi and fruitflies.

Main foliage pests

- **Scales**

Scales can infest fruits, leaves, stems, branches and the trunk. When numerous, they cause the withering of leaves and shoots. Leaves often display yellow spots where they have been pricked. Scale infestation is often accompanied by sooty mould.

- **Mites:** *Aceria litchi* (Erinose mite)

This is a serious pest in India and China, attacking flowers and leaves. The leaves crinkle and the undersides acquire a brown coating.

Trunk and branch pests

- **Bark-borer caterpillars**
  (*Indarbela quadrinotata* and *I. tetroanis*)

Very common in India. Damage is caused by the larvae that bore into bark and trunk, reducing sap movement and affecting growthssance.

- **Bark borer:** *Salagena* spp.

The larvae feed on the bark and wood of the tree. The tree does not die but the branches wither. Treatment: these larvae can be controlled by stopping the holes with cotton wool soaked in systemic insecticide.

- **Thrips**

Dolicothrips indicus and Magalurothrips usitatus cause damage to flowers. Selenothrips rubrocinatus, Heliothrips haemovoidalis and Franklinella cephalica cause the withering of flowers and leaves.

Diseases

- **Root rot**

This is caused by the fungus *Clitocybe tulescens*. Much damage is reported in Florida. *Botryodiplodia theobromae* can cause sudden death of the tree (Australia).

- **Aerial system**

Leaf necrosis caused by *Gloeosporium* spp. This is observed in certain poorly managed orchards.


© JF. Vayssières

C. Peltastica


© Christian Didier

Fruitfly


© Christian Didier

Leaf-borer caterpillar


© JF. Vayssières

Bark borers


© Christian Didier

Anthracnosis

Post-harvest and sulphur treatment

A feature of litchi is that it does not ripen after picking and so it is essential to harvest the fruit when it is fully ripe. However, it deteriorates very rapidly at ambient temperature. The shell browns, dries and becomes brittle in two or three days. Loss of colour results from the oxidation of anthocyanin pigments, an irreversible reaction. The fruit is then more subject to bursting and secondary contamination by fungi.

To prevent senescence before the fruit is sold, litchi can be fumigated with sulphur dioxide; this inhibits respiration and thus conserves texture and organoleptic qualities for several weeks. Sulphur has a fungicidal, anti-oxidant effect that keeps the shell flexible. This treatment can be applied to destemmed fruits or bunches that are sound, ripe, free of spotting, insects pricking and free of traces of damp on the shell. Sulphur is burned in a closed chamber containing the fruits. It causes the shells to turn yellow, whereas they are naturally pinkish red when the fruits are ripe. The fruits are then sorted again and packed. They remain yellow for as long as they are kept chilled. The colour gradually changes to pink ochre or purplish red when they are under warmer, moist, ventilated conditions allowing the elimination of the sulphur.

Sulphur treatment is the cornerstone of litchi marketing insofar as it lengthens conservation time, giving access to sea transport and hence large-scale exports. The procedure is used for several other fruits such as table grapes and dried fruits and it is also used for wines. The main difference is that litchi shells are not edible. Sulphur treatment is permitted in Europe under certain conditions. Consumer health protection regulations stipulate that the residual sulphur content must not exceed 250 mg/kg in the shell and 10 mg/kg in the fruit pulp. Numerous experiments have been conducted to define treatment procedures so that these limits are respected. Both professionals and the European authorities pay close attention to the question. Numerous control operations are performed throughout the life of the fruit in order to ensure that the regulations are respected. The gradual setting up of certification by operators should enhance product traceability and the mastery of treatment operations.

The continuation of use of sulphur is called into question from time to time. Indeed, with the general evolution of regulations towards the protection of consumer health, there is a great risk of heading towards a reduction in residue levels at best and at the worst the forbidding of treatment. One of the role of the sector us therefore to pay great attention to changes in the regulations concerning this point. A search for new conservation methods can also be an important approach. Unfortunately, litchi does not have sufficient economic weight to mobilise the resources required for such research, as is the case for other fruits.

Temperature during storage and transport is another key component in maintaining fruit quality in time. Indeed, chilling after harvesting, treatment and packing is performed by the transport facilities used. Here, it will be noted that litchi is one of the few tropical fruits that can withstand low temperatures (1°C ± 0.5°C). The combination of sulphur treatment and chilling allows good conservation of litchi. Fast chilling to the heart of the fruit is important for maintaining quality. Chilling must then be maintained to ensure as long a life as possible for the fruits. Any change in temperature may cause fruit deterioration and senescence.

before sulphur treatment

after sulphur treatment

© Christian Didier

Litchi varieties

by Christian Didier

Litchi sinensis Sonn.
Sapindaceae
Origin: Southern China (Canton region)

A great number of varieties exist around the world. Only those seen on export markets are mentioned here.

© Cirad Réunion

Shahi (Muzaffarpur)

The fruits are medium-sized (20 to 25 g), bright pink and in clusters. The pulp is sweet. This is the most common variety in Bihar State in India. It is of very good export quality but susceptible to cracking and sun-scorch. The trees are vigorous with steady production (80 to 100 kg per tree).

© Cirad Réunion

Kwaï mi (Mauritius, Tai So)

The fruits are medium-sized (22 to 25 g) and bright red in clusters of 12 to 30. Fruit quality is good. This is the most widespread variety in the Indian Ocean. Production is steady with little alternate bearing. The trees are of medium vigour slender.

© Cirad Réunion

Rose scented

The fruits are medium-sized (16 g), globular and heart-shaped. The pulp is very sweet with an aroma of roses, whence its name. The variety is grown mainly in Uttranchal in India.


© Cirad Réunion

Haak Yip (Black leaf)

The fruits are medium-sized (20 g), dark red and in clusters of 15 to 25. The peel is smooth and hard. The pits are medium to large. The flesh is good to excellent, sweet and aromatic and forms 70 percent of the fruit. The trees are of medium vigour, compact, straight and bear well.

© Cirad Réunion

Chakrapad (Emperor)

A large heart-shaped fruit (32 g). The skin is thin and flexible, dark red with yellow patches. Moderately juicy, the pulp may remain slightly acid. Fairly large stone. The trees are of average vigour with an erect habit, long branches and dense foliage.

Wholesale market prices in Europe

April 2013

					EUROPEAN UNION — EURO				
					Germany	Belgium	France	Holland	UK
AVOCADO	Air	TROPICAL	BRAZIL	Box			14.00	15.18	
	Sea	ETTINGER	PERU	Box		8.00			
		FUERTE	KENYA	Box	9.13		7.00	11.50	9.81
			PERU	Box				10.00	8.76
			SOUTH AFRICA	Box		8.00	9.25	10.00	
		HASS	BRAZIL	Box	9.75		10.25	11.50	
			COLOMBIA	Box			10.25		
			ISRAEL	Box	10.25				
			KENYA	Box	7.50		6.75	9.00	
			MEXICO	Box			7.38		
			PERU	Box	9.00		8.75	11.00	
			SOUTH AFRICA	Box			8.88		
			TANZANIA	Box	7.75				
		PINKERTON	SOUTH AFRICA	Box			9.25	10.00	
	Truck	HASS	SPAIN	Box	9.75	7.75	11.55		
BANANA	Air	RED	ECUADOR	kg				4.88	
		SMALL	COLOMBIA	kg			6.70	6.52	
			ECUADOR	kg		5.67		5.17	
	Sea	RED	ECUADOR	kg				2.29	
		SMALL	ECUADOR	kg			1.70	2.00	
CARAMBOLA	Air		MALAYSIA	kg		4.58	4.89	5.04	
CHAYOTE	Sea		COSTA RICA	kg			1.50	1.43	
COCONUT	Sea		COTE D'IVOIRE	Bag		10.87	12.75	10.89	
			DOMINICAN REP.	Bag				19.00	
			SRI LANKA	Bag			13.50		
DATE	Sea	MEDJOOL	ISRAEL	kg			8.00	7.55	
		NOT DETERMINED	TUNISIA	kg				1.88	
DURIAN	Air		THAILAND	kg				8.00	
EDDOE	Sea		COSTA RICA	kg			2.00	1.57	
GINGER	Sea		BRAZIL	kg	1.27				
			CHINA	kg		0.92	1.37	1.14	
			THAILAND	kg			1.80	1.44	
GUAVA	Air		BRAZIL	kg			4.59	7.40	
			THAILAND	kg		7.38		4.83	
KUMQUAT	Air		ISRAEL	kg					5.84
LIME	Air		MEXICO	kg			4.05		
	Sea		BRAZIL	kg	1.78	2.00	2.53	1.50	1.77
			MEXICO	kg			2.75		
LONGAN	Sea		THAILAND	kg				3.92	
MANGO	Air	AMELIE	MALI	kg			3.00		
		KENT	COTE D'IVOIRE	kg		4.25			
			MEXICO	kg		4.25			
			PERU	kg		4.25		5.00	
		NAM DOK MAI	THAILAND	kg				7.60	
	Sea	ATKINS	BRAZIL	kg				2.13	
			ECUADOR	kg		1.63			
		KEITT	PERU	kg			1.63		
		KENT	BRAZIL	kg		1.75			
			PERU	kg	2.13		2.00		
		PALMER	BRAZIL	kg				2.00	

					EUROPEAN UNION — EURO				
					Germany	Belgium	France	Holland	UK
MANGOSTEEN	Air		THAILAND	kg			9.50	7.93	
MANIOC	Sea		COSTA RICA	kg			1.20	1.01	
MELON	Sea	CANTALOUP	COSTA RICA	kg				1.50	1.40
			GUATEMALA	kg					0.55
			HONDURAS	kg				1.55	1.72
		CHARENTAIS	MOROCCO	kg			1.50		
		GALIA	COSTA RICA	kg				1.60	
			HONDURAS	kg					1.63
		HONEY DEW	COSTA RICA	kg	0.95			1.13	1.25
			PANAMA	kg					1.27
		PIEL DE SAPO	BRAZIL	kg					1.52
			COSTA RICA	kg				1.13	1.04
		SEEDLESS WATER	COSTA RICA	kg				1.13	
		WATERMELON	COSTA RICA	kg	0.90			1.00	0.63
			PANAMA	kg				1.13	
PAPAYA	Air	FORMOSA	BRAZIL	kg			3.00	3.25	
			THAILAND	kg				4.81	
		NOT DETERMINED	BRAZIL	kg		3.43	3.40	3.80	4.01
			ECUADOR	kg			3.00		
	Sea		ECUADOR	kg				2.43	
PASSION FRUIT	Air	NOT DETERMINED	COLOMBIA	kg	5.00	5.00	6.00	6.04	
		PURPLE	KENYA	kg		4.00		5.00	
			SOUTH AFRICA	kg			6.50	5.50	
			ZIMBABWE	kg				5.54	
		YELLOW	COLOMBIA	kg		8.38	8.50	8.72	
			ECUADOR	kg		8.25			
PHYSALIS	Air	PREPACKED	COLOMBIA	kg			8.25	8.57	
	Sea		COLOMBIA	kg	5.42	5.83		6.42	
PINEAPPLE	Air	SMOOTH CAYENNE	BENIN	kg			2.10		
			CAMEROON	kg			2.50		
		VICTORIA	MAURITIUS	Box		12.50		13.35	
			MAURITIUS	kg			3.55		
			SOUTH AFRICA	Box	11.00	12.50		11.82	
	Sea	MD-2	COSTA RICA	Box	8.00	6.50	8.06	7.88	9.34
			COTE D'IVOIRE	kg			1.05		
PITAHAYA	Air	RED	VIET NAM	kg		5.83	9.00	6.68	
		YELLOW	COLOMBIA	kg				10.22	
			ECUADOR	kg				9.00	
PLANTAIN	Sea		COLOMBIA	kg			1.00	1.00	
			ECUADOR	kg			0.90	0.91	
RAMBUTAN	Air		THAILAND	kg		7.25		8.00	
			VIET NAM	kg		7.25	9.50	8.00	
SWEET POTATO	Sea		BRAZIL	kg					1.40
			EGYPT	kg			0.95		
			HONDURAS	kg				1.36	1.17
			SOUTH AFRICA	kg					1.52
		PURPLE	CHINA	kg				2.45	
TAMARILLO	Air		COLOMBIA	kg		6.80		6.89	
YAM	Sea		GHANA	kg			1.40	1.40	

Note: according to grade

These prices are based on monthly information from the Market News Service, International Trade Centre UNCTAD/WTO (ITC), Geneva.
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