



This is what I want!









For the right of intervention! I suggest that the concept be extended to countries which, quite knowingly, poison their own population. For the umpteenth time, this story has made me cry out in anger. The scandal comes, one might almost say as usual, from Costa Rica and from the banana sector. This country, which proclaims itself the champion of biodiversity and environmental preservation, is once again in the media spotlight after derivatives of Mancozeb, a fungicide used at high doses to combat banana black leaf streak, was found in the urine of pregnant women. We are regularly alarmed by massive sanitary scandals. And while it is at present Costa Rica which is implicated, we should make no mistake, all the production zones are marked with the seal of infamy. And there are very few in this chain of dishonour who can escape the blame: the producer treating without thinking; the phytopharmaceutical company selling its products without monitoring their use or long-term toxicity; the importer which, despite its over-certification, closes its eyes; the supermarket which sells without seeking to understand; the national authorities of the importing countries, which under the pretext of national sovereignty, refrain even from asking themselves the question; and the consumer, programmed simply to purchase based on the principle "perfectly formed plastic fruit at the cheapest price". And since introspection has to begin in-house: what about agronomic research? It has sometimes lost its soul, sometimes closed its eyes, sometimes refused to get involved. We might even think that in part it has taken the right path, toward ecological intensification. For the rest, money will do its best to ease the physical and moral pain. Costa Rica, again, has decided to compensate the medical expenses incurred by the 12 000 banana plantation workers and their families exposed to Nemagon, a sadly notorious nematicide developed in the 1970s by the firms Dow Chemical and Shell Oil. But the announcement says nothing about all those whom the poison has already killed. There are rumours of possible free renovation of their graves...

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$\mathsf{C}_{\mathsf{ontents}}$

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Cover photograph: © Clio Delanoue

Banana

September 2014

Although all the sources began their seasonal increase, the market supply remained moderate, and all the European markets maintained a sound balance in September. Costa Rican imports started to grow, peaking at the end of the month at higher levels than in previous years. Ecuador was slightly down from August, maintaining moderate levels, while Colombia, despite a slight rise, remained well in shortfall (- 25 %) due to climatic problems back in May. Elsewhere, the French West Indies also began their seasonal increase in early September, with levels 12 % above average, whereas African volumes, climbing from the middle of the month, remained near average for the season due to production losses in Côte d'Ivoire (floods in July). Meanwhile, demand on the various markets was dynamic and in step with the available supply from late August, thanks to the end of the summer holidays and to promotions in the distribution sector. In Northern Europe, sales underwent a seasonal rise similar to 2013. In Southern Europe, demand was above all stimulated by promotions. Conversely, the East European markets were more difficult, because of excessively high prices, despite a moderate supply. In Spain, the increase in Canaries platano volumes from mid-September, with levels back to average, drove prices down. In Russia, despite a very limited supply, the weak demand contributed to the deterioration of the market. In France, the increase in green banana prices which had begun in late August continued, and rates stabilised from week 37 at levels 14 % above average.

NORTHERN EUROPE — IMPORT PRICE				
September	Comparison			
2014	previous	average for		
euro/box	month	last 2 years		
13.21	+ 2 %	- 2 %		



■ The banana: changing how you eat it. The objective of the banana industry professionals collaborating within the association AIB (Assoban, the banana section of CSIF, UFMB, UNCGFL, UNFD and FCS) is to revitalise banana consumption in France. Indeed, at just 8.5 kg/capita/year, France is a banana under-consumer compared to its European neighbours, who gulp down on average 12 kg/capita/year. Hence after more than two years of work orchestrated by AIB, several documents aimed at consumers and industry professionals have been released, for the purpose of better acquainting consumers with the banana, better safeguarding quality at all stages of the industry and better promoting the product in the distribution sector. This is the first initiative bringing together so many links of the industry in France, and the first Europe-wide initiative since the Banana Group in the United Kingdom in the 1990s. On Wednesday 8 October 2014, the Lyon-Corbas wholesale market hosted the test operations kick-off meeting — consumer information actions aimed at the point of sale and catering establishments — and the presentation of the compendium of data sheets on banana quality, developed with CIRAD and the support of ODEADOM, aimed at industry professionals. Quantitative monitoring will be performed, as well as a qualitative study conducted by CTIFL among a group of 30 consumers, in order to measure the impact of the test operations. The results will be available at the end of the year.

More information at: www.labananechange.fr

Sources: AIB, CIRAD







EUROPE - RETAIL PRICE					
	Septem	September 2014		nparison	
Country	type	euro/kg	August 2014	average for last 3 years	
France	normal	1.50	- 5 %	+ 3 %	
	special offer	1.24	- 5 %	+ 4 %	
Germany	normal	1.16	- 11 %	- 3 %	
	discount	1.14	- 2 %	+6%	
UK (£/kg)	packed	1.14	- 1 %	- 5 %	
	loose	0.76	+1%	+6%	
Spain	platano	2.05	+ 10 %	+9%	
	banano	1.26	+1%	-6%	

2



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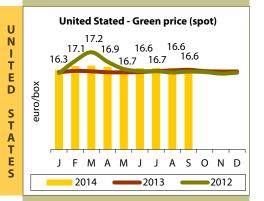
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Banana



UNITED STATES - IMPORT PRICE				
September 2014 USD/box	Comparison			
	previous	average for		
	month	last 2 years		
16.60	0 %	+ 3 %		



RUSSIA - IMPORT PRICE			
September	Comparison		
2014 USD/box	previous month	average for last 2 years	
14.30	+ 55 %	+ 20 %	



CANARIES - IMPORT PRICE*				
September	Cor	nparison		
2014	previous	average for		
euro/box	month	last 2 years		
21.00	+ 26 %	+ 49 %		
* 10 C lee herrestriesleet				

■ Banana: world consumption still set fair. European banana imports rose in August 2014 (+ 3 % from August 2013). Although a moderate rise (+ 11 000 tonnes more), this was for the third month in a row. Over the first eight months of 2014, it was the 7th month to register an increase, with only May exhibiting a very slight shortfall. On the dollar side, Ecuador and Costa Rica climbed steeply, whereas the Colombian shortfall widened. handicapped since spring by serious climatic vagaries. Over the first eight months, all the dollar sources turned up the pressure on the European market, but it is Ecuador and to a lesser degree Panama which will finish the year with a big surplus. For Ecuador alone, an additional 100 000 tonnes were put on the market compared to the same period of 2013. As for the ACPs, Cameroon was practically balanced over the eight months, though it was down in August. The effects of the flooding in Niéky are now telling on the Ivorian export figures, with 4 500 tonnes fewer in August, after a fall of 1 700 tonnes

in July. The Dominican Republic is maintaining its high growth tempo: + 3 000 tonnes in July and + 7 400 tonnes in August! The European banana supply is rising as rapidly as imports: 12 % in August and + 5 % over the first eight months. Over this same period, Guadeloupe led the way (+ 15 %), ahead of Martinique (+ 4 %) and the Canaries (+ 3 %). If we add European banana production to imports, we get an evaluation of net consumption for the EU-28. Over the last 12 months (September 2013 to August 2014), consumption appears to have risen by nearly 320 000 tonnes, reaching the record figure of 5.523 million tonnes. According to forecasting models, we will end the year 2014 at just over 5.6 million tonnes, which would be an absolute record.

The trend from the United States is for stability. Consumption was up 1 % over the first eight months of the year, at 2.723 million tonnes. All the sources climbed except for Honduras (- 3 %), Colombia (- 17 %) and Mexico (- 3 %), which bucked the general trend.

Source: CIRAD

Banana - January to August 2014 (provisional)					
000 tonnes	2012	2013	2014	Difference 2014/2013	
EU-27 — Supply	3 469	3 577	3 759	+ 5 %	
Total import, of which	3 054	3 187	3 347	+ 5%	
MFN	2 410	2 509	2 635	+ 5%	
ACP Africa	312	349	373	+ 7%	
ACP others	333	329	339	+ 3%	
Total EU, of which	415	391	412	+ 5%	
Martinique	121	120	124	+ 4%	
Guadeloupe	41	41	47	+ 15%	
Canaries	238	220	227	+ 3%	
USA — Import	2 938	3 055	3 094	+ 1%	
Re-exports	339	359	371	+ 3%	
Net supply	2 599	2 697	2 723	+ 1%	

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

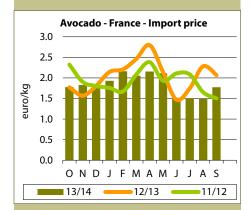
EUROPE - IMPORTED VOLUMES — SEPTEMBER 2014					
	Comparison				
Source	August September 2014 cumulative total 2014 2013 compared to 2013				
French West Indies	7	+ 57 %	+8%		
Cameroon/Ghana/Côte d'Ivoire	7	-6%	+ 3 %		
Surinam	=	- 27 %	- 8 %		
Canaries	7	+ 3 %	+ 3 %		
Dollar:					
Ecuador	4	+ 32 %	+ 38 %		
Colombia*	7	- 28 %	- 17 %		
Costa Rica	77	+ 121 %	+ 78 %		

Estimated thanks to professional sources / * total all destinations

Avocado

September 2014

The market managed to get back on its feet, though very gradually. From the beginning of the month the supply returned to a more moderate footing, though still well above average for both Hass and green varieties. However, the Chilean season started late and gradually, in view of the big production shortfall this season. However, Peruvian imports remained close to their high-season tempo, while South African imports, although waning, proved to be above average. Some batches from Kenya and Mexico rounded off the Hass supply. Furthermore, demand proved rather slack. Hence the price rise was only very gradual, particularly for the small sizes, with significant movement only making itself felt at the very end of the month.



P R I	Varieties	Average monthly price euro/box	Comparison with the last 2 years
E	Green	6.50 - 7.00	na
	Hass	6.50 - 7.50	- 7 %

V O L U		Comparison		
	Varieties	previous month	average for last 2 years	
M E	Green	7	+ 18 %	
s	Hass	7	+ 17 %	



■ Avocado: growth at half-mast in the United States in Q2. Avocado sales in the United States shrank by 1.5 % from 2013, after a 10 % rise in Q1. Happily, this dip in performance does not mean US consumers are starting to become disenchanted with Hass. As proof, prices are registering a parallel growth of nearly 16 %. It is the supply which is lacking, especially for large fruits, and above all because of the scarcity of Californian production.

Source: HAB

■ Mexican avocado: set for one million tonnes of exports to the United States in 2019? That is the prediction made by APEAM (the Mexican Association of Avocado Producers and Exporters). According to this body, shipments to its big neighbouring market,

which registered a level close to 520 000 t in 2013-14, should more than double by the end of the decade: a projection based on a growth rate of 15 % per year, in line with the average recorded since 2006-07. Is this hypothesis overly ambitious? Will the East Coast markets be sufficient growth relays to make up for the stabilisation trend of the West Coast markets, which seem to have reached maturity? The question has been asked, and the answer had better be in the affirmative. Since in any case Mexico should have the fuel to drive this trend, given the annual planting rate of around 10 000 ha since 2010-11. Nearly an additional 11 000 ha of cultivated land in Michoacán has been approved by APHIS for the 2014-15 season, taking the total surface areas authorised to export to the United States to 89 000 ha.

Source: APEAM

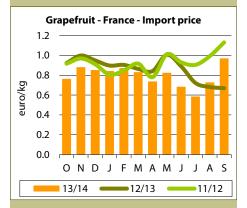


		Comparison			Cumulative total /
V 0 L	Source	previous month	average for last 2 years	Observations	cumulative average for last 2 years
Ū M	South Africa	Ä	+ 13 %	Season ebbing away in line with normal calendar (fall starting from beginning of the month), though volumes 10 to 15 % above average both for Hass and green varieties.	+ 23 %
E	Peru	=4	+ 28 %	No significant decrease, and volumes very high all month.	+ 20 %
_	Chile	7	- 50 %	Late and very gradual start to the season, in view of the production shortfall.	- 50 %
	Kenya	22	- 35 %	Season ebbing away early. Hass volumes very limited from the beginning of the month.	- 3 %

Grapefruit

September 2014

Finally! The market is registering an average price above average level, after a period of twelve months of practically uninterrupted depression. Demand, slowed down by temperatures maintaining practically summer levels, did not prove particularly dynamic. However, the late grapefruit supply from South Africa was considerably below average. Similarly, Mexican volumes were rather short for fruits originating from Michoacán, and even more so from Yucatán. Some Israeli batches topped up the supply from the middle of the month. Prices continued to strengthen throughout the month, registering a level far above average.



P R I C	Туре	Average monthly price euro/ 17-kg box equivalent	Comparison with average for last 2 years
Е	Tropical	16.50-17.00	+8%
	Mediterranean	15.50	+ 22 %

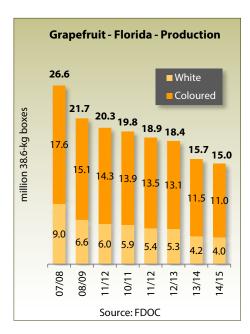
V		Comparison		
O L U	Туре	previous month	average for last 2 years	
M E	Tropical	na	na	
S	Mediterranean	77	- 6 %	

■ Floridian grapefruit: production continuing to ebb. With 578 000 t expected in 2014-15 (i.e. 15 million field crates), Floridian grapefruit production registered a fall of approximately 500 000 boxes from last season. The Sunshine State remains by far the world's leading production region, but its harvest has dropped by 25 % in just five years. And the forecast still needs to be verified! The difference between the initial forecast and actual figure was approximately 2 million boxes over the past two seasons, because of greening and the extent of the resulting autumn and winter physiological dropping. The only reason for good cheer is that the size range, historically low last season, seems to be returning to average. Should we predict a considerable downturn in shipments to the EU-28, especially with the euro's fall against the dollar being an aggravating factor? It is probable, but the downturn should not be all that big. The collapse of shipments to Japan, a highly demanding market in terms of cosmetic appearance and phytosanitary regulations, has helped limit the impact of the fall in production on Florida's shipments to the EU over recent seasons.

Source: FDOC

■ Mediterranean citruses: a big season in 2014-15, despite a small downturn from last season.

After a record 2013-14 season, Mediterranean citrus production should register a considerable fall of 7 % in 2014-15, according to CLAM data. However, this season will still be in the top three, with a harvest of approximately 21 million tonnes. This trend can be explained by a considerable fall of 10 to 14 % in the Spanish and Greek harvests, and above

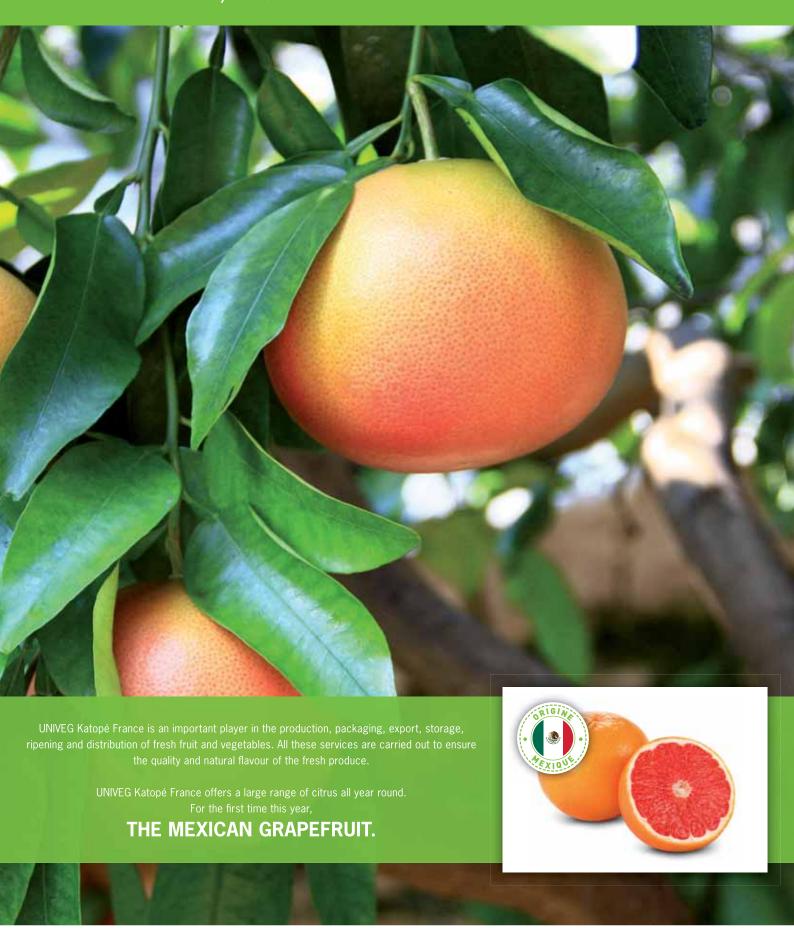


all by a major downturn in Italian production, set to drop by 24 %. The small 4 % rise in the Turkish harvest, and the slightly bigger rise from Cyprus (+ 13 %) and Israel (+ 20 %) should only mitigate the overall fall. The orange family should be the hardest hit, with its production down 10 % to approach the 2012-13 level. Nonetheless, the estimated harvest of 11.4 million tonnes is still set to be among the three biggest ever recorded. There should also be a big fall, of approximately 7 %, for the grapefruit, with the estimated production of 580 000 t reaching its lowest level in recent years because of large-scale uprooting. The lemon harvest is set to be down by 4 %, registering with 2.9 million tonnes a level in line with average for recent seasons. The fall should be minimal for small citruses, of approximately 2%, with production remaining among the biggest ever, at 6.2 million tonnes.

Source: CLAM

	Com	parison		Cumulative
Source	previous month	average for last 2 years	Observations	total / cumulative average for last 2 years
South Africa	'n	- 34 %	Volumes very limited, and well below average for grapefruits originating from the late zones.	- 19 %
Mexico	7	na	Season starting at the beginning of the month. Cumulative imports below average.	na
Israel	77	-6%	Season starting, with some moderate volumes.	- 6 %
	South Africa Mexico	Source previous month South Africa Mexico	South Africa Mexico Total attrage of last 2 years - 34 % na	Source previous average for last 2 years South Africa -34 % Mexico na Season starting at the beginning of the month. Cumulative imports below average.

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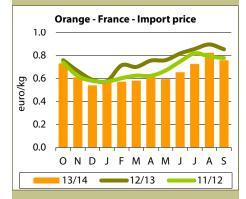
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Orange

September 2014

The end of the Southern Hemisphere season, which appeared well underway, was ultimately more difficult than predicted. The Indian summer weighed down on demand throughout the month. However, the scarcity of South African imports, due to the extreme caution of exporters in view of the new sanitary provisions governing access to the European market, put the market in a state of under-supply, in particular for small-size fruits. Prices strengthened until the middle of the month. Thereafter, the considerable and unexpected rise in incoming Valencia shipments from South Africa caused an abrupt turnaround in the trend, in a context of ongoing slow demand. Rates dropped to reach a level considerably below average at the end of the month.



P R I C	Туре	Average monthly price euro/15-kg box	Comparison with average for last 2 years
Ē	Dessert orange	na	na
	Juice orange	12.00-12.50	0 %

V		Comparison			
O L U	Туре	previous month	average for last 2 years		
M	Dessert orange	7	- 2 %		
S	Juice orange	7	- 7 %		



■ Easy peeler variety of the month: Oronules. Spontaneous mutation of 'Fine' clementine detected in 1970 in Nules, near Castellón in Spain. The peel is an attractive strong orange colour. The pulp is soft, rich in juice and with a good taste. However, the fruit tends to be small, like its parent. Field and postharvest management is fairly delicate.

Source: CIRAD

■ Initial review for summer citruses. With the professional figures, we can draw up an initial review of the summer citrus season. The fall is set to be just as radical as predicted for Argentina, and approximately 40 % from last season. This cyclical collapse should of course be marked against the lemon, with its 50 % fall in exports seemingly just as great as the predicted fall in production. Small citruses and the orange are set to see their shipments shrink by 15 to 20 %. The grapefruit meanwhile has now practically disappeared from the Argentinean export supply, with shipments not yet reaching 50 tonnes. While the season was

particularly difficult for South Africa (reinforced sanitary constraints in the EU, commercial difficulties with the grapefruit, Russian market unappealing), the balance in terms of volumes is no less satisfactory, thanks to the massive work undertaken to develop shipments to Asia. Overall exports were down just 3 % from the record 2013 season. The structural increase in small citrus shipments, the lack of Argentinean lemons and a practically stable Navel market helped make up for the clear drop in volumes of Valencia and above all of grapefruit.

Professional sources, CIRAD

Citrus - Argentina - Export				
in tonnes	Compared with 2013			
		World	EU-28	
Lemon	152 000	- 46 %	- 48 %	
Orange	43 000	- 46 %	- 17 %	
Easy peelers	81 000	- 9 %	- 14 %	
Total	276 000	- 39 %	- 41 %	

Professional sources

Citrus - South Africa - Export				
million boxes	By Oct. 17 th	Compared with 2013		
	2014	World	EU-28	
Lemon	12.9	+ 23 %	+ 29 %	
Navel	26.1	+ 2 %	- 14 %	
Valencia	44.6	- 5 %	- 14 %	
Easy peelers	9.6	+ 15 %	+ 2 %	
Grapefruit	14.8	- 17 %	- 33 %	
Total	108	- 2 %	- 14 %	

Source: CGA

	Varieties	Com	parison		Cumulative total /
V	by source	previous month	average for last 2 years	Observations	cumulative average for last 2 years
U M	Argentinian Valencia	7	-25 %	Imports maintaining a below-average level.	-17 %
S	South African Valencia	7	-5 %	Marked late increase in volumes, so incoming shipment shortfall registered smaller than in previous months.	-16 %
	South African Navel	22	-2 %	Some very limited last imports.	-11 %

Pineapple

September 2014

In early September, the reduction in the Sweet supply, which began in August, started to take effect. Over the first half-month, the supply was often less than demand. The market seemed more vigorous, since the operators had a bit more difficulty procuring fruits. In addition, the supply seemed unbalanced by a smaller presence of large-size fruits, which were accordingly valued higher. This trend was confirmed during the second half-month. Nonetheless, rates did not take off, though sales were made at stronger prices. It was the established brands with smaller quantities of fruits that were able to come out better placed, with rates constantly growing throughout the month.

The extremely restricted Cayenne supply was only available during the second half-month.

Throughout the month, the air-freight pineapple market supply was fairly small. This situation enabled operators to readily sell off those fruits in their possession, at rather strong basic prices. Over the first half-month, the scarcity of the supply was due to concerns in the production zones, especially in Cameroon, which was the most affected. Over the second half-month, the reduction in the supply was mainly down to strike action by Air France. Fruits from Benin were more limited. The fear seizing the markets at the beginning of the month (due to the risk of application of customs fees for not signing the APE agreements) regarding Cameroonian and Ivorian exports proved short-lived.

The Sugarloaf supply sold well, at between 1.80 and 2.05 euros/kg, depending on the volumes brought to market.

The more substantial Victoria supply, especially from Reunion, struggled to sell since purchasers were not really interested in the fruit. However, rates remained stable.

	PINEAPPLE —	- IMPORT P	RICE			
E U	Weeks 36 to 39	Min	Max			
R	Air-freigl	nt (euro/kg)				
P E	Smooth Cayenne Victoria	1.70 3.00	2.10 3.70			
	Sea-freight (euro/box)					
	Sweet	6.00	9.00			

Mango

September 2014

The European mango market received a steady supply from Brazil, with modest quantities, primarily of Tommy Atkins and to a lesser degree Keitt. This merchandise was sold mainly on the North European markets. Brazilian shipments to the European market remained restricted, while they developed more expansively to the North American markets. Israel and Puerto Rico provided a falling supply, heralding the forthcoming end to their season. In the first half-month, the last batches from Senegal were put on the market at waning prices, given the frequent qualitative deterioration of the fruits. In the second half-month, the overall fall in the quantities received, and a slight revitalisation in demand, helped sea-freight mango rates strengthen. Meanwhile, the Spanish Osteen supply picked up steeply, accompanied by a slump in sale prices. This source also shipped small batches of air-freight quality Irwin, well valued on a market lacking top-of-the-range merchandise. At the end of the month, the first Kent shipments began, with values varying with the fruit coloration.

The Spanish supply made up for the scarcity of air-freight shipments, and represented a real alternative to an airfreight supply that was unappealing overall. After the disappearance of the last batches from Senegal in the first half-month, the air-freight mango market remained dependent on Israeli fruits, whose sale prices dipped in the second half-month. Some Kent batches from Egypt supplemented the supply, with fruits of good taste quality, though visually unappealing.

MANGO - INCOMING SHIPMENTS (estimates in tonnes)						
Weeks 2014	36	37	38	39	E	
Air-freight Air-freight						
Senegal	5	-	-	-	O P	
Sea-freight						
Brazil	400	500	530	680		
Senegal	110	-	-	-		

MANGO - IMPORT PRICE ON THE FRENCH MARKET							
Weeks 2014		36	36 37	38	39	Average	Average
Weeks 2	2014	30	3/	36	39	Sept. 2014	Sept. 2013
			Air-freig	ht (euro/k	(g)		
Senegal	Kent	4.00	4.00	-	-	4.00	3.40-4.50
Israel	Kent	3.00-3.50	3.00-3.50	3.00-3.30	3.00-3.30	3.00-3.40	3.50-4.10
Egypt	Kent	3.00-4.00	3.00-4.00	3.80-4.50	4.00-4.50	3.45-4.25	4.05-4.25
	Sea-freight (euro/box)						
Brazil	Keitt	-	-	6.00-7.00	6.00-7.00	6.00-7.00	-
Israel	Kent	5.00-6.00	5.50-6.50	-	-	5.25-6.25	7.00-7.85
Israel	Keitt	-	-	5.00-6.00	5.00-6.00	5.00-6.00	7.00-7.75
Senegal	Kent	4.00-5.00	4.00-5.00	-	-	4.00-5.00	-
Puerto Rico	Keitt	6.00	5.50-6.50	5.00-6.00	5.00-6.00	5.35-6.10	7.00-8.00
By truck (euro/box)							
Spain	Osteen	6.50-8.00	5.50-6.50	5.00-6.00	5.50-7.00	5.60-6.90	8.25-10.50
Spain	Irwin	16-20	16-20	16-20	18	16.50-19.50	-
Spain	Kent	-	-	-	14-20	14-20	-

PINEAP	PLE - IMPORT PF	RICE IN FRA	NCE - MAIN	SOURCES	
Weeks 2	014	36	37	38	39
	Air-fre	eight (euro/	kg)		
Smooth Cayenne	Benin	1.70-1.90	1.80-1.95	1.80-2.00	1.80-2.00
	Cameroon	1.70-1.90	1.80-1.95	1.80-2.00	1.80-2.00
	Ghana	1.80-1.90	1.85-2.05	1.90-2.05	1.90-2.10
Victoria	Réunion	3.30-3.70	3.30-3.70	3.00-3.60	3.00-3.50
	Mauritius	3.00-3.30	3.00-3.30	3.00-3.40	3.20-3.40
	Sea-fre	eight (euro/	box)		
Smooth Cayenne	Côte d'Ivoire	-	-	6.00-8.00	6.00-7.50
Sweet	Côte d'Ivoire	6.00-8.00	6.00-8.00	7.00-9.00	7.00-9.00
	Ghana	6.00-8.00	6.00-8.00	7.00-9.00	7.00-9.00
	Costa Rica	6.00-8.00	6.00-8.00	6.00-8.00	6.50-8.00

Roots & tubers

Q2 and Q3 2014

The period was marked by temporary price increases for products with a dwindling supply. The other products maintained relatively stable rates, except for retail variations.

Sweet potato

The red-skinned white-fleshed sweet potato market received a steady supply in Q2 and Q3 2014, with South African products. Their prices remained stable from April to late June, and then dipped slightly in July and August, a period of lower consumption, before returning to their initial level in September. Meanwhile, Egypt was supplying the market, with a hiatus from mid-July to early September. From April to July, prices held up at around 0.80 euro/kg on average, while the new harvest in September obtained higher rates, though rapidly falling. Honduras topped up the supply in July-August, obtaining higher prices than the South African products. September saw the start to the European sources season, more specifically Spain, whose rates varied with the quality of merchandise. The supply of orange-fleshed sweet potatoes was provided by Israel and Honduras. Rates for Israeli products were high, with a distinct rise from mid-July to late August because of a restricted supply. They then sagged due to the increase and diversification of the supply. Merchandise from Honduras followed the same trend, but at a price level 0.20 to 0.30 euro/kg lower than the Israeli competition. The United States also provided a sweet potato supply, though less steadily, from April to May, and from mid-July to mid-August.

Yam

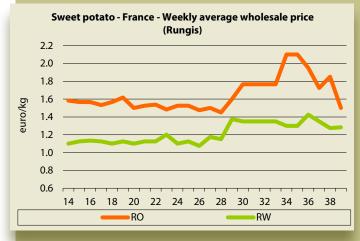
From April to mid-July, Ghana provided a steady supply to the market, with white yams selling at prices dipping from June to mid-July, when the new harvest appeared. From then on, the market took a considerable upturn for the new harvest, and a downturn for the stored batches. Prices dipped again in September, in parallel with the expansion of the Ghanaian supply. This source also supplied Puna yams at a more haphazard tempo. In August, some Cuscus batches rounded off the supply.

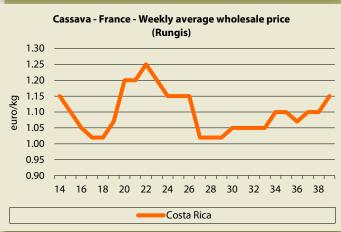
Cassava

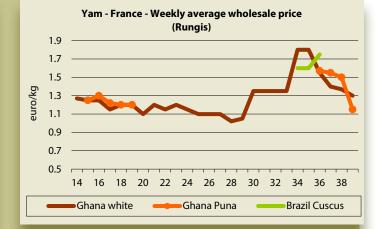
There was minimal variation in the Costa Rican cassava rate, with a maximum amplitude of 0.20 euro/kg. May and June saw prices hit a ceiling of 1.20 euro/kg because of a smaller supply.

Fddoe

Usually sold at around 1.50-1.60 euro/ kg, Costa Rican eddoes saw their price rise from mid-April to 2.00 euros/kg, and for shorter periods. This change was associated with the limitation of shipments to the European market. From May to September, prices sometimes varied with availability, but also depending on the sizes, with the largest obtaining the highest rates. In April, some batches from the Dominican Republic enriched the supply, but this flow quickly dried up.









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Other exotics

Q2 and Q3 2014

Plantain banana

The market was supplied by Colombia and Ecuador, with price increases in May and from late August to September. These price rises came at a time when the supply was smaller. Some temporary falls were also observed during the period in question, attributable to the qualitative deterioration of certain batches, which proved over-mature upon receipt. Generally speaking, Colombian products obtained slightly higher rates than those recorded for its Ecuadorian competition.

Chayote and christophine

Rates were steady for chayotes and christophines from Costa Rica from April to September. The smaller christophine supply in August helped prices rise. The second half of August saw the start to the market season of the French-produced chayotes and christophines. They sold at slightly higher prices than

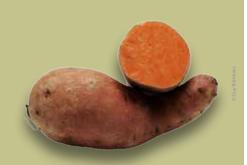
those charged for Costa Rican products. In the second half of September, French chayote prices increased slightly, in a context of a more limited supply. From May to mid-August, Martinique shipped some air-freight batches of christophine, which sold on a basis of 2.80 euros/kg.

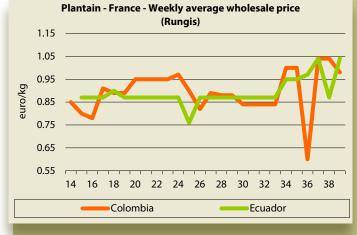
Dasheen

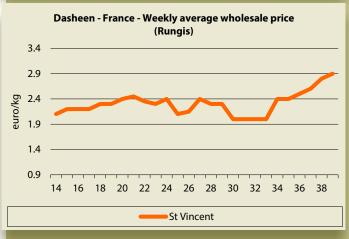
The rate for dasheens from Saint Vincent, the main market supplier, rose gradually from April to mid-July, before experiencing a downturn of approximately one month. In the second half of August, rates then took an upturn. This trend intensified throughout September. The increase in dasheen prices arose from the scarce production on Saint Vincent. Shipments were irregular, with exporters having to wait to obtain a sufficient quantity of produce to load the shipping containers. Martinique also shipped small quantities of dasheens by air-freight, which sold on a basis of 3.90 euros/kg on average.

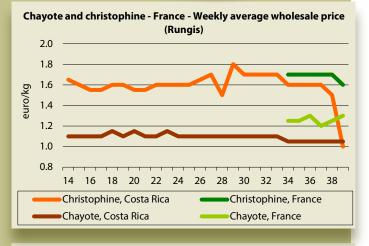
Chilli pepper

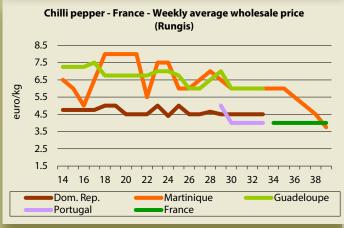
The bulk of the chilli pepper supply came from the Dominican Republic from April to mid-August. These products sold at largely stable basic prices. Shipments ceased when the European produce (Portugal and France) appeared. The FWI also supplied the market with more limited quantities. Shipments from Guadeloupe, steady in value, came to a halt at the same time as those from the Dominican Republic, because of the competition from European produce. Shipments from Martinique covered the whole period in question, with big price variations depending on the supply level and also product quality.













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Sea freight

September 2014

After a lively end to August it was back to the doldrums for the large units in September. With the CIF banana price in the Med needing to be relatively high because of strong demand for Ecuadorian fruit, Slovenian charterer Rastoder mitigated risk by mixing a regular supply of bananas on third-party liner services with handysize tonnage fixed on consecutives at box rates well below the TC deals done by the majors for larger units with good deck-stow box availability.

There was no surplus of bananas east of the Panama Canal and certainly no citrus surplus in Argentina. Last year Colombian banana volumes absorbed perhaps 1-2 units per week in September. This absence of demand left the top-end units high and dry unless or until one of the majors stepped in. The month ended with 5-6 vessels open at Cristobal and little prospect of any change.

The implications of the new reeferheavy weekly Hamburg Süd service from Colombia and Central America to Marin, Antwerp, London and Hamburg on the specialized reefer services cannot yet be calculated, as mystery surrounds carrier's principal the supporting cargo interests. Initial speculation put Del Monte in the frame, with the multinational having to re-jig the tonnage it has on long-term charter with Star Reefers in order to downsize transatlantic volumes. hanana

No matter how attractive the deals offered by the container lines to the majors appear to be in the short term, by committing regular volumes to such services the multinationals must surely realise they are cutting their own throats in the longer term. Unless the multinationals either control all banana production at source or pay for all of the reefer slots on each service, there will be spare capacity for competitor shippers or receivers to operate and price under the brands' umbrella and build market share at their expense.

MONTHLY SPOT AVERAGE USD cents/cubic Large Small EUROPE foot x 30 days reefers reefers September 2014 84 41 September 2013 49 70 September 2012 25 50

■ Indian Ocean litchi: clarification about the forthcoming season. While the Madagascan litchi export season is set to be similar to last year in terms of quantity and calendar, it seems that the timing of shipments from South Africa and Mauritius has shifted slightly. The first batches from Mauritius should be available from week 46, whereas they were received in week 45 in 2013. South African shipments should be much later than in 2013, when they came particularly early, launching the Indian Ocean zone season. They should come only in the second half of November this year.

Though Cyclone Bejisa left its mark on Reunion in the first days of 2013, cutting short the trading season, its production does not seem to have been greatly affected. The trees appear to be bearing a roughly normal load, and the first shipments are set for week 47.

Source: Pierre Gerbaud





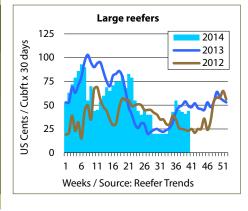
■ The 4th International Social LCA Seminar (4th SocSem) will be held from 19 to 21 November 2014 in Montpellier (France). It is aimed mainly at company managers in charge of social assessment of product chains, researchers interested in social LCA, and students intrigued by issues of social assessment. The guest for the most relevant social aspects and effects is really intensifying. This fourth international seminar aims to offer a forum for communicating the most recent advances in both assessment of social behaviour of companies, and in assessment of social consequences of change (whether based on environmental, social or other causes). At the website below, you will be able to follow the debates by streaming, and consult the proceedings (December). It is free to sign up, but you must do so via the site.

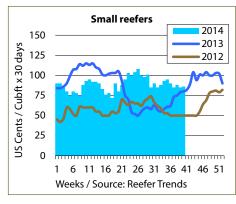
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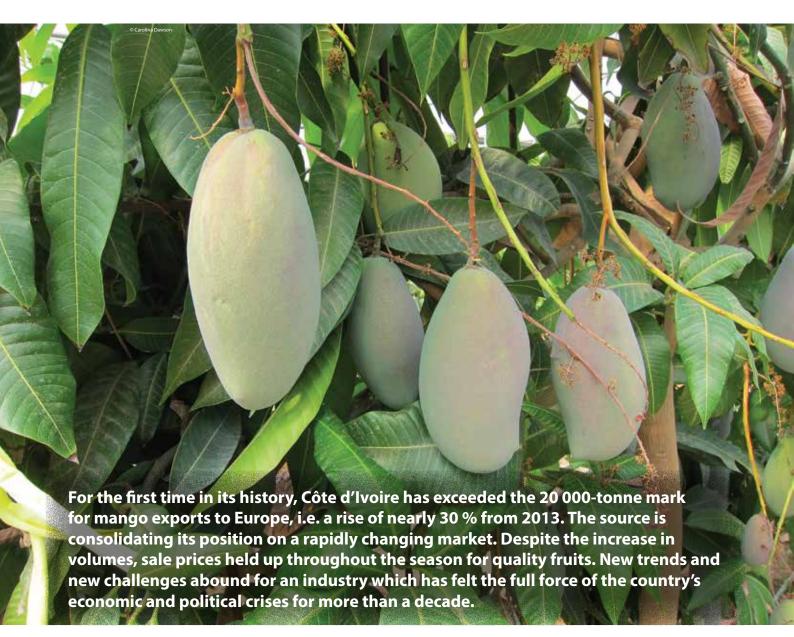


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Côte d'Ivoire mango

2014 season review





Over the 20 000-tonne mark

This year Côte d'Ivoire exported nearly 50 % of its production, evaluated in 2011 by the FAO at 45 000 tonnes — a first for this industry. Since 2001, mango surface areas have more than doubled, and this trend is continuing and strengthening. In addition, variations due to the production alternation effect no longer really affect the export volumes, as was the case previously. The production zones subject to this phenomenon are compensated for by other more productive zones. Lastly, the orchards planted around a decade ago are now reaching full production.

In the face of production growth, exporters have continued their efforts this year to modernise and adapt to the international market. The improvement in the mechanisation of the packing stations is continuing, with the installation of more efficient equipment (electronic graders, more pre-cooling chambers, etc.), creation of new packing units, importing more competitive and robust packaging, retaining Globalgap certification and development of new certification (Tesco, Rainforest Alliance, BRCI, etc.).







While many operators already present in the Ivorian industry are holding or strengthening their positions, new European operators are appearing: a definite change from previous years. For many years under the yoke of French importers only, the Côte d'Ivoire mango is now increasingly imported directly by Dutch, German and Belgian operators. This has definitely helped ensure a better division of volumes across Europe. This new situation should be consolidated and develop over the coming seasons.

A short, intense season

The Kent season began this year on 10 April, i.e. one week earlier than last year, when shipments started on 17 April due to delayed maturity of the fruits. Some containers of large-size Amélie were shipped in March, aimed at the niche markets.

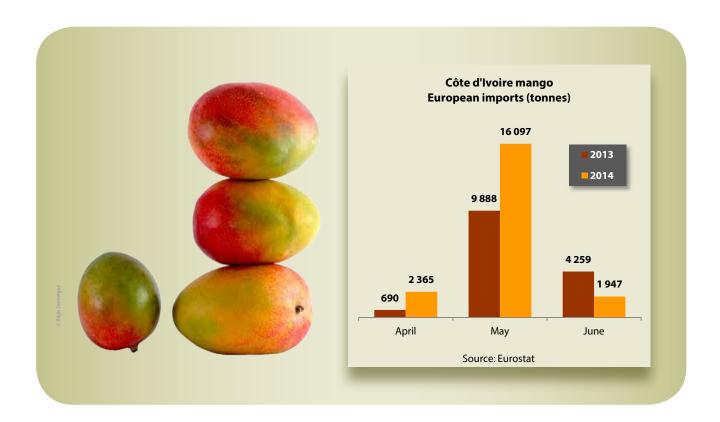
The first sea-freight Kent shipments were received in Europe in the first week of April. Kent air-freight shipments started in April, with maturity levels often insufficient for this type of product. They continued until the end of the season.

As the season began earlier, the volumes for April increased this year, going from 690 tonnes in 2013 to 2 365 tonnes in 2014. Furthermore, Côte d'Ivoire has never exported so many mangoes in May: 16 097 tonnes in 2014 (a figure above the overall volumes exported in 2013), as opposed to 9 988 tonnes in 2013.

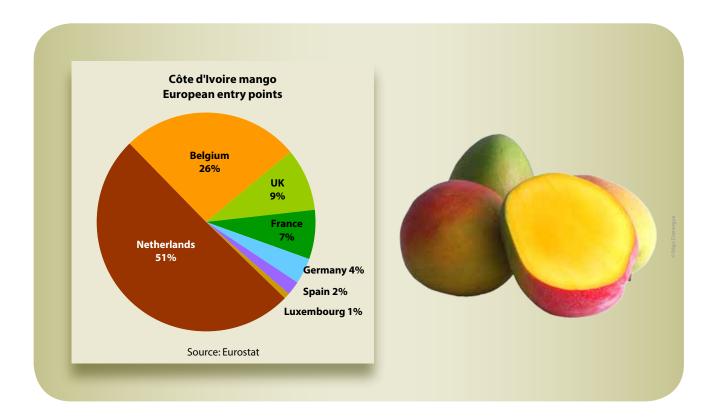
The Kent season ended earlier than the previous one: between 7 May for some operators and 14 and 17 May for others, in order to avoid lightning outbreaks of anthracnose. This situation led to a fall in volumes in June (1 947 tonnes in 2014 as opposed to 4 259 tonnes in 2013).

Limited shipments of Keitt were also made at the end of the season, aimed at the North European markets.

This short, intense season confirms the trend, which consists in shipping only over four weeks, to guarantee the consumers better product quality. However, the concentration of shipments over a short period did not stop the development of the fungal attacks and fruit fly infestations, which came early in the season. These recurrent scourges were unfortunately proportional to the increase in volumes shipped, illustrating one of the main weaknesses of the Ivorian industry.







New qualitative and logistical challenges to face

Besides these major qualitative problems, the concentration of the season is generating new quality concerns. Over-maturity of the seafreight fruits, even at the beginning of the season, was rare during previous seasons. It proved much more common during the 2014 season. The reasons in some cases are due to poor management of the product by the exporter during the harvest: excessive quantities of mangoes harvested for the packing capacity of the factories, leading to fruit left waiting in crates before packing, sometimes for more than 48 hours, failure to schedule the harvests in line with the ship departure dates, leading to quayside waiting times in Abidjan of more than one week, etc.

The heterogeneity of maturity, often caused by poor selection of fruits planted, will doubtless remain problematic for a long time yet, given the limited harvest period and the competition from operators in the field.

The vagaries of logistics also contributed to disrupting shipments. Packed fruits waiting at the station (before transfer) because of the late delivery of containers, container malfunctions due to insufficient checking before allocation, and the absence of container temperature control during connection to the terminals were regularly observed over the season.

Anthracnose and fruit flies, present in production zones from the beginning of the season, do not always undergo sufficient preventive measures, except for exporting over four weeks to avoid these major qualitative problems at the end of the season.

However, some simple changes to production working methods, but also at the packing station, would help limit certain major problems, though without using pesticides or fungicides: banning night shifts at the packing station, since fly holing cannot be detected, scheduling harvests in line with ship departure dates to ensure a better product shelf life and guaranteed maturity and freshness for the consumer, better selection of fruits by their coloration and maturity, etc.

Very few pesticides are used on Côte d'Ivoire mangoes, and to date no fungicides have been used in production or post-harvest: a definite advantage which must be preserved in order to guarantee European consumers a healthy fruit





free from any residues. This is definitely worthy of wider discussions, to control quality concerns naturally and thereby protect the Ivorian industry against ill-advised use of chemicals.

The concentration of the Ivorian season also poses numerous constraints in terms of logistics: availability of containers at the right time, late pick-up of containers from the port of Abidjan, connection of containers to the terminal, delayed ships, etc. The number of shipping companies offering a refrigerated container service bound for Europe is limited. They primarily comprise AEL (Abidjan-Antwerp in 12 days), CMA-CGM (Abidjan-Antwerp in 14 days) and to a lesser degree MOL HAPPAG (Abidjan-Antwerp in 14 days).

Prices holding up for quality fruits

Despite an increase in quantities exported, the 2014 season confirms the trend for rates holding up above the 4.00 euros/box mark for the seafreight Côte d'Ivoire mango. Indeed, for two years there has been little fluctuation in Ivorian mango prices on the markets. Although rates were not as high at the beginning of the season as in 2013, they held up for fruits of satisfactory quality throughout the season. At the end of the season, the development of fungal problems led to some losses.

Rates holding up is a new factor for an industry which for years suffered from rates variation, even dropping below the cost price mark for the product. Purchase prices from the producers also maintained a high level throughout the season, to their great satisfaction.

Will this trend continue in 2015? We will have to wait and see. There is still a great deal of investment to be made in the industry, both in the export and production sectors. On the export side, modernisation of the factories must be continued while keeping production management in compliance with the certification required by the European markets. Furthermore, the producers are incentivised by better returns to better care for their orchards and to create new plantations. Nowadays, all their fruits are purchased, whether for export to Europe or for the local and sub-regional market, where the Côte d'Ivoire mango is always prized. Ghana, Niger and Burkina Faso are increasingly procuring second-rate mangoes from Côte d'Ivoire, either to satisfy local consumption, or for their processing factories (dried mango, juice, etc.).

While the increase in mango imports into Europe, estimated at between 7 and 8 % per year, is helping improve volumes exported by Côte d'Ivoire, the growth in the sub-regional market is also a factor worthy of consideration for its development. Diversion of second-rate fruits to the sub-regional market should help provide a qualitative improvement in Ivorian fruits on the European markets in terms of coloration, size, maturity, fruit selection, etc.

Efforts in terms of container logistics should be undertaken in 2015, with in particular the entry of new operators enabling CMA-CGM and MOL HAPPAG containers to be picked up sooner from the port of Abidjan.







Regarding the Ivorian industry, it is still managed by the three constituent professional organisations (OCAB, OBAMCI, AREXMA), which sometimes causes some confusion regarding the actions to implement.

At sub-regional level, there is a proliferation of initiatives to ensure uniform quality of the West African mango. As a priority industry supported in the common agricultural policy of ECOWAS, the mango industry remains subject to particular attention: distribution of a West African mango quality guide, consultation of exporters from Burkina Faso, Côte d'Ivoire, Mali and Ghana on the quality and training actions to be implemented, etc.

The constantly sought improvement in fruit quality will probably remain for a long time yet the key to success and growth for Côte d'Ivoire mango exports, and more broadly speaking for West African fruit exports

Alexis Moulin

19



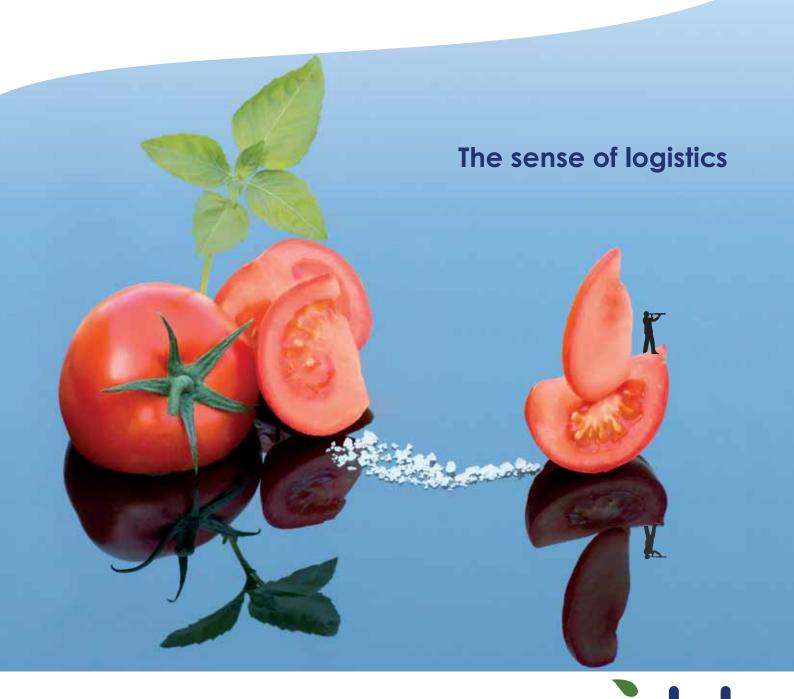


Counter-season tomato

A little revolution...

As we write every year, for numerous products: each season follows the last, but they bear little resemblance. The season now starting should actually go beyond this basic principle, with the combination of a substantial modification to customs clearance methods, the Russian embargo and operational reshuffles. Each of these disruptions might not only have mediumterm effects, but they are also bound over the long term to result in structural changes.

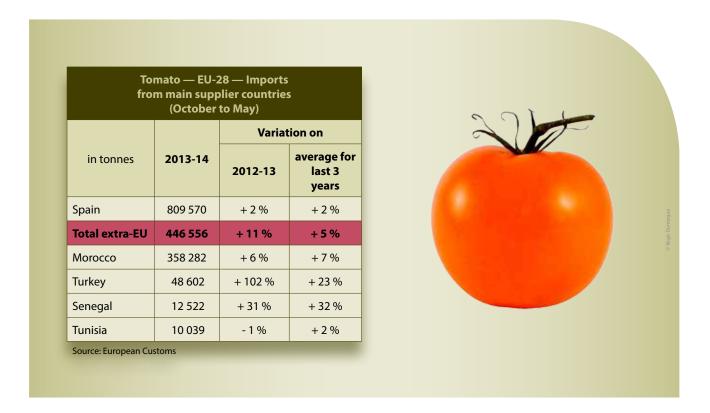




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A leader's commitment





Just one directive in Europe: standard value!

The main modification originates from the abrogation of Regulation 1237/2007 as at 1st October 2014, which relates to common organisation of markets. It has been replaced by Regulation 1308/2013 of 17 December 2013, itself amending Regulation 543/2011 which determines customs clearance of merchandise imported under the entry price mechanism. As a result, the choice of customs value determination terms, based on which the customs fees payable by the importer are calculated, will be more restrictive. Paragraph 4 of the new article 137 of Regulation 543/2011 indeed specifies that "with regard to merchandise imported on consignment, it must be directly evaluated using the deductive method, which takes the form of the Standard Import Value". As a reminder, this SIV is calculated daily by the European Commission for each source and for set periods, based on actual product pricing on the market.

Previously, being unable to go on transactional value in the case of fruits and vegetables (franco price at Community border), as this was not generally known during customs clearance (case of so-

called consignment merchandise), importers had the choice of determining the customs value either based on SIV, or using the sales account deductive method. The latter method enabled transfer of ownership of merchandise from a third-country supplier to an importer, without an invoice being issued during customs clearance. The customs value was then calculated once the product was sold, applying the actual sale price of the dominant batch to the whole shipment. In the case of tomatoes, as the combined nomenclature did not distinguish between segments, a whole shipment could clear customs under the sale price of one segment. So the latter method may no longer be applied as at 1st October.

New SIV cocktail

On 20 June, after lengthy negotiations, particularly between the European Union and Morocco, third-country operators secured parallel variation of the SIV calculation. They primarily asserted that this value only reflected part of sales, since it was based only on pricing set on the wholesale or import markets, whereas a large part of the supply is sold via direct programmes with the supermarket sector, and it only counted prices of round tomatoes.



So it will also be modified as of this season, and will incorporate all of the tomato references offered for sale, especially the small segment, tonnages of which have grown considerably in recent years. Indeed it represents 30 % of volumes exported by Morocco (88 000 t of cherry tomatoes and 35 400 t of cocktail tomatoes in 2013-14). This trend should lead to an upward adjustment of SIV, and a substantial fall in the amount and number of days under tax. SIV therefore dropped below the entry price for more than 65 days last year, between 15 October and 31 May, of which 45 days at MTE (Maximum Tariff Equivalent). So we might imagine that this news will also have a long-term impact on the development of segmentation in production.

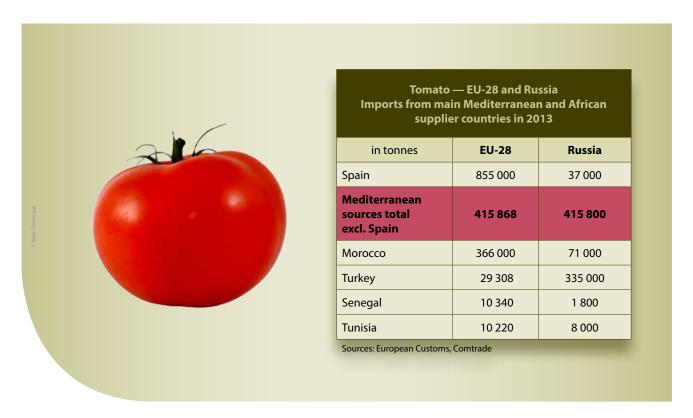
Putin wielding the scythe in Russia!

Europe is not alone in undertaking revolution. The retaliatory measures against Europe implemented at the beginning of August by the Russian President, in the form of an embargo on European foods, should lead to upheaval in the export strategies of all sources. This destination, after recent years of uninterrupted growth, with in particular regular lines set up, has enabled many operators to supplement

their customer portfolio. However, development has hitherto been cautious in the face of the vagaries inherent in the most distant markets (logistics, payment, disputes, etc.).

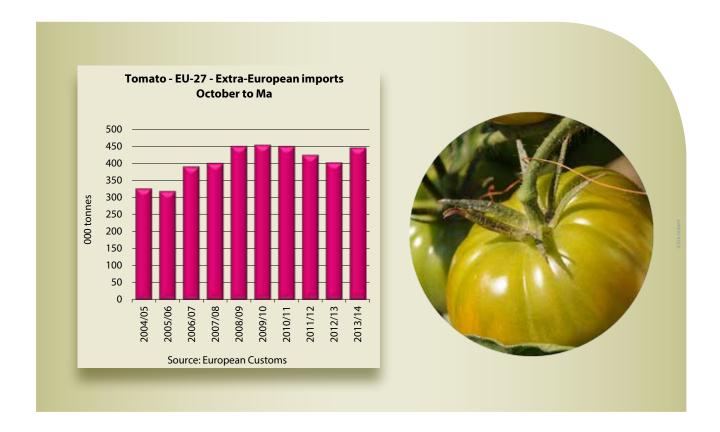
So these measures will mark a halt, at least for this year, to the growth of Spanish exports outside of the Community. They had their first boom to Russia from 2005-06 (12 000 to 15 000 t), rapidly reined in by the economic crisis. But after three mediocre years (less than 10 000 t), the rise has taken hold, consolidated by the growth in surface areas for elongated tomatoes, better suited to the logistical constraints. Exports even reached 36 800 t during the last winter season, though they should see a similar drop back down this year.

Conversely, this situation should benefit the other Mediterranean sources. Turkey, already a favoured partner of this source due to its proximity (335 000 t, i.e. 40 % of tomatoes imported into Russia), should therefore enjoy a considerable transfer in demand, giving it a boost in the face of the growth of the other Mediterranean countries in recent years. Moroccan exports should further strengthen, with better suited logistics out of Agadir (71 000 t in 2013). Similarly, smaller sources such as Israel (8 000 t) or Senegal (1 800 t) should gain new market shares. So this phenomenon of communicating vessels may limit the impact of transfer of



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Spanish volumes onto the European market, which could nonetheless be swollen with elongated tomatoes, since the decision made in August did not enable producers to modify their varietal choices.

Not cut too deep

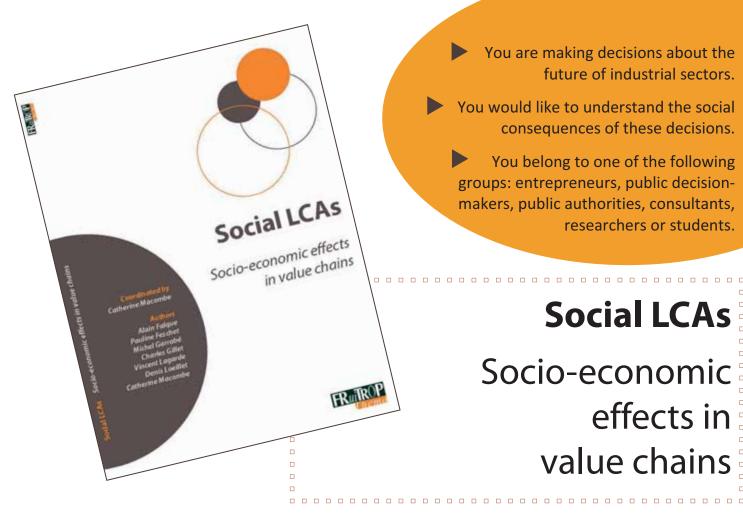
The season should get off to a fairly auspicious start, unlike last year when the beginning of the season was much stymied by the late presence of European produce (season delayed, and large presence of home produce in the autumn). Furthermore, the potential for winter should not reach excess. Spain is set for surface areas to be stable at the very most, especially in the Almeria and Murcia zones, whereas Canaries production could again be slightly down. Imports from third countries should be smaller, as we mentioned above, due to the transfer of volumes from Mediterranean countries to Russia, probably from the beginning of the season, to make up the already massive shortfall due to the European embargo.

Nonetheless, while surface areas are stable this year for Spanish round tomatoes and trussed

tomatoes, certain segments could swell. Hence the market could be more competitive for the elongated tomato, surface areas of which are still expanding in Spain, and for which the absence of the Russian outlet could make itself felt. The small segmentation is also in the midst of expansion, with new varieties better suited to the pedoclimatic conditions of the south of the peninsula being planted. Furthermore, this segment could be more competitive with the dismantling in Morocco of one of the main export companies, and the transfer of volumes into the hands of new operators.

The European market will nonetheless remain a priority for many extra-Community operators. As a reminder, the duty-free quota is increasing this year again for Morocco by 8 000 t, i.e. a total of 249 000 t, plus potentially 28 000 t added to the quota. Tomato shipments from Senegal reached 12 000 t (+ 31 % on 2012-13) last year, while Tunisia held up with a total of 10 000 t exported to the European Union. Now only Israel is seeing its presence shrink, transferring its volumes to other destinations, especially Russia ■

Cécilia Céleyrette, consultant c.celeyrette@infofruit.fr



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

Social LCAs

Socio-economic effects in value chains

What are the social consequences of changes enacted in the value chains, especially when they involve large international agricultural product industries? How can we anticipate the results of changes in technical procedures, supplier, work organisation, distribution of revenue generated, etc.?

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A report by **Pierre Gerbaud**

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COMPAGNIE FRUITIERE





Madagascan litchi in 2014-15

Set fair for the Madagascan industry



The renovated **Madagascan industry** is embarking for a fourth consecutive year on the same strategic foundations. The good results recorded since the 2011-12 season have led professionals to retain the model from season to season. **Equivalent volumes,** upgraded logistics and an identical marketing strategy remain the organisational pillars of the 2014-15 season.



^{ème} édition Salon International Professionnel de la Filière Fruits & Légumes































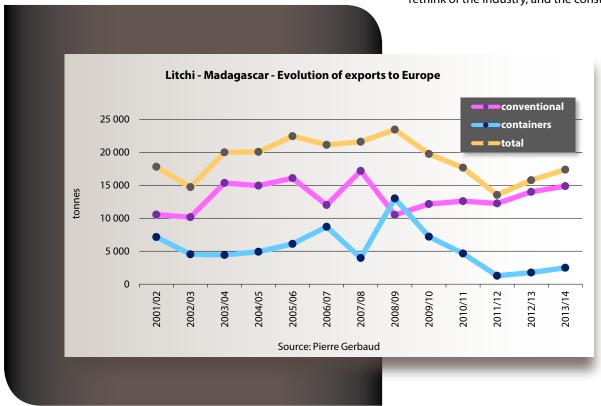




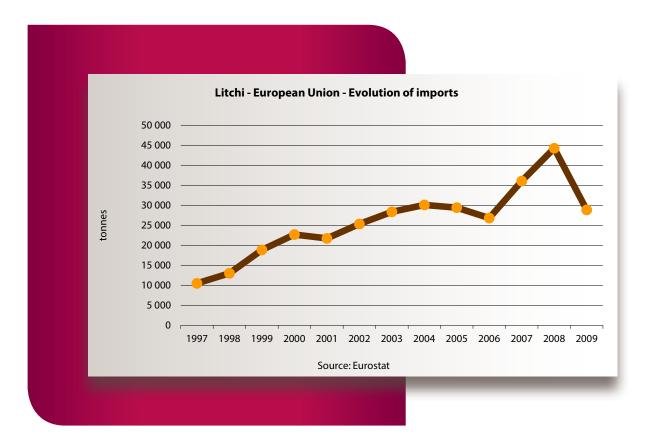
Restructuring of the industry

For the past three years, the Madagascan litchi industry has recorded satisfactory results, confirmed by operators from both the export and import sectors. Previously, there seemed to be more unpredictable variation between each period, with a volumes race culminating in the 2008-09 season with nearly 23 500 tonnes. Quantities dipped over the following years to adapt to the reality of demand from the European markets, affected by the financial and then economic crisis. The 2010-11 season was doubtless one of the worst of the decade, marking a crucial turning point in the development of the Madagascan industry. Indeed, nearly 17 700 tonnes were shipped to Europe, and sold at particularly low prices. German distributors stopped purchasing after the first shipload, because of the fruits exceeding the residual sulphur levels. With Germany an essential destination market for the litchi, this season became a commercial nightmare. The sword of Damocles of litchi sanitary quality, long feared but always ignored, suddenly cut deep into the routine of an industry in the midst of a destructuring phase.

This crisis had the positive effect of an overall rethink of the industry, and the construction of









a different marketing model. Several avenues emerged from the reflections of the professionals. First of all, there was a drastic reduction in volumes, with the particular aim of enabling exporters to ensure improved sanitary quality of the fruits, the primary cause of the industry's troubles. A close monitoring system was added at the import end, to ensure compliance with European sanitary regulations.

The commercial strategy was also reviewed, with the number of European recipients becoming extremely restricted, in order to better manage distribution of the fruits and their sale prices.

The 2011-12 season was set to be a test season for this new organisation, with the central objective of regaining the trust of distributors, in order to secure the litchi flows to all European markets. The positive results, in terms of both qualitative and economic aspects, of this pivotal year led professionals to retain the organisation in place over the following seasons. The calmer atmosphere of the 2012-13 and 2013-14 seasons helped strengthen the quality approaches, with most of the export structures gradually signing up to GlobalGap certification. With the benefit of early starts, these two seasons turned out just as positive.

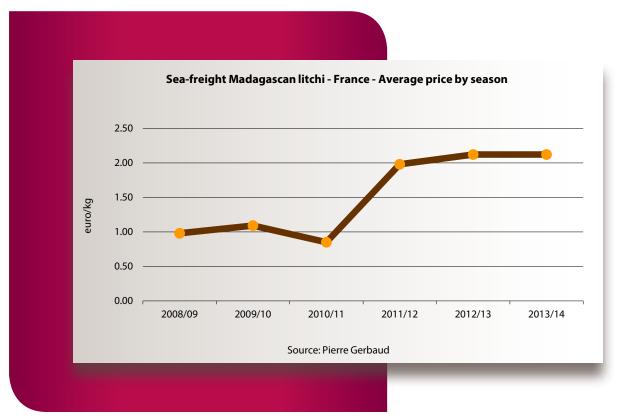




2014-15 season: status quo

On the strength of the successes recorded over the past three seasons, Madagascan litchi industry professionals are preparing to retain the strategy in place since 2011. The latest production reports seem to indicate that the season will be as early as in 2013. You will recall then that the first air-freight shipments came in week 45, and that the harvest opening date for sea-freight exports came on 18 November 2013, enabling conventional ships to arrive in Europe on 10 and 15 December. Barring unusual incidents, the calendar should be more or less the same for the forthcoming season.

Production is reportedly a bit less than last year, though this factor should not alter the quantities scheduled, insofar as litchi production on Madagascar is well in excess of export levels. Two conventional ships, each configured to receive approximately 7 000 tonnes of fruits, have been chartered to provide the transport for the end-of-year festive period. These are the same vessels used last season, chosen for their good performance





both in terms of refrigeration capacity and sailing. The itinerary will be unchanged, with the transport time proving to be equivalent between the northern route via Suez and the southern route via the Cape. The southern route, longer by distance, is proving as quick by time, given the diversions required on the northern route for security reasons.

The same destination port has also been kept (Zeebrugge) for its unloading services, its ability to handle spot ships and its availability at this time of year. Its accessibility and road links also represent a considerable factor, to accommodate the 350 to 400 lorries required to haul away the cargo from each ship. The quantities scheduled for the last phase of the season, shipped by sea containers, have not been definitively set. The greater fragility of the fruits at the end of the season, the lower demand in the aftermath of the end-of-year festivities and the later date of the Chinese New Year in 2015 (19 February) are all points to take into consideration in tailoring the quantities to the needs of the market. In any event, it is very likely that the volumes transported by container will not exceed the 120 units shipped last season.

Quality monitoring still just as strict

Like last year, the ships will have an extended time frame for loading to avoid the nervy climate which previously predominated, sometimes contributing to a lack of rigour in the sorting and sulphur treatment of the fruits before loading. The possibility of a less hurried tempo of loading provides a qualitative gain for the product. In terms of fruit quality, considerable progress has been made in recent years, illustrated during the 2013-14 season by residual sulphur levels limited to the doses authorised by European regulations. Sulphur fumigation, which promotes fruit preservation, remains the favoured method in terms of efficiency, implementation and profitability. While other trials have been developed over recent seasons, they do not seem able to replace the current treatment mode, at present. They will continue this year, to confirm or reject the alternative processes already tested on marginal quantities.

Having most of the Madagascan export companies sign up to GlobalGap certification also represents a major qualitative investment for the industry. In addition, many structures have signed up to Grasp certification (GlobalGap Risk Assessment on Social Practice), or are continuing their approach to expand their commitment to the social environment of the industry operatives.





Air-freight litchi: a difficult niche

The beginning of the air-freight season is for its part proving more complicated. Over the last three seasons, air-freight export volumes have shrunk by around one hundred tonnes, going gradually from more than 500 tonnes to 400 tonnes in 2013-14. The competitiveness of neighbouring sources (South Africa, Mauritius and more modestly Reunion) is creating lively competition to Madagascar. Mauritius and Reunion have only air-freight capacities to export their fruits, with the modest volumes from these sources ruling out the possibility of seafreight shipments. Hence every year the combined tonnages shipped by each source leads to an over-supply to the destination markets, still not very open to the litchi.

This most often results in a considerable fall in rates, incompatible with Madagascan litchi cost prices for import into Europe. Indeed, this product is actually hindered by the bottleneck formed by air freight, both in terms of capacity (2 cargos per week) and price. The cost of freight from Antananarivo is nearly double that for neighbouring countries. Under these conditions, it is hard to see how Madagascan exporters might main-

tain their litchi shipments at a high level, with the airlines not prepared to revise their prices downward. Air-freight shipments of Madagascan litchis could well remain dependent on the volumes sent by competing sources. Operators will need to adapt their supply to the market's absorption capacity in the short term, and if need be suspend certain shipments, as already happened last year.

At this time, the conditions seem to have come together for the Madagascan litchi market season to proceed satisfactorily. Production remains big, and its earliness favours fluid organisation in terms of fruit logistics and marketing. Although the economic ills of the destination markets persist, consumers will doubtless again benefit from attractive offers during the festive period, to try out this fruit which has become a must on supermarket shelves

Pierre Gerbaud, consultant pierregerbaud@hotmail.com





Litchi, tamarind, cashew apple, jackfruit, sapotilla, carambola, passion fruit, pitahaya **European Union imports** Tonnes 2009-10 2010-11 2011-12 2012-13 2013-14 57 433 61 789 Total 63 552 60 367 68 110 Total extra-EU, incl. 35 935 32 420 30 340 31 125 29 601 Madagascar 18 877 16 039 12 800 13 709 12 170 2 639 2 986 3 390 3 842 Colombia 2712 3 009 3 473 Vietnam 2 866 3 629 3 651 South Africa 3 464 3 490 2871 4416 2 962 1 883 Malaysia 2 385 2 105 2 034 1 953 Thailand 1 681 1 196 1 359 1 436 1 387 Israel 752 774 730 505 714 Ghana 262 387 715 695 567 Kenya 655 870 565 545 523 Total intra-EU, incl. 27 618 27 947 27 093 36 984 32 188 Belgium 1 219 3 707 2 063 9 807 9 151

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

12 326

5 182

2 153

1 736

10 644

5 260

5 393

1 629

8 921

7 142

7710

2 037

8 607

6 523

4 359

2 395

9 688

6 293

2 749

1 926

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

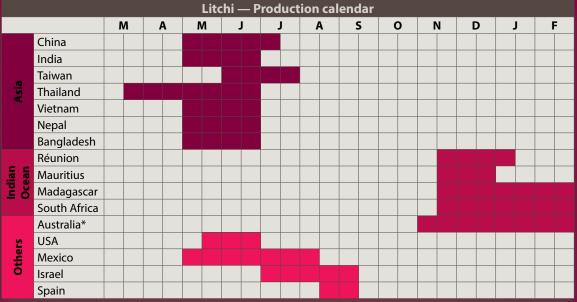
Source: Japanese Customs, code 81090210

Netherlands

France

Spain

Germany



^{*} Australia: Queensland: from the beginning of November to the end of January / New South Wales: from the beginning of January to the end of February







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)



Heavy 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





Litchi cultivation

by Christian Didier

Requirements of litchi

Specific climatic conditions are required for litchi growing but the tree is not very fussy about soils. It also has low susceptibility 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.

Orchard creation

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 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 $10 \times 10 \text{ m}$ or $8 \times 10 \text{ m}$, that is to say a density of 100 or 125 trees per hectare. Nevertheless, planting at $8 \times 6 \text{ m}$ (208 trees per ha) or $8 \times 5 \text{ m}$ (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 in 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 clustered at the extremities of the branches. The latter are broken at harvesting. However, this practice does not control the tree volumes. 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 facilitate harvesting. 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 mineral loss to 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 induce flowering.

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 fruits are rapidly treated and taken to market 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.

Litchi - Applications recommended Grams per tree									
Years	N	Р	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 compliance 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 fruit flies.

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)

A major pest in India and China, which attacks the flowers and leaves. The leaves wither, and their bottom side is covered with a brown film

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 growth.
- 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.













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 from spotting, insect pricking and 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 for elimination of the sulphur.

Sulphur treatment is the cornerstone of litchi marketing insofar as it lengthens conservation time, providing 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 issue. Numerous control operations are performed throughout the life of the fruit in order to ensure that the regulations are respected. The gradual implementation of certification by operators should enhance product traceability and the mastery of treatment operations.

The continued use of sulphur is questioned from time to time. Indeed, with the regulations generally moving 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 banning treatment. One of the roles of the sector is 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 over 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 ($1^{\circ}C \pm 0.5^{\circ}C$). 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.









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.

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).



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.





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 pips 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.

Chakrapac

(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.





Rose scenter

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.

Photos © CIRAD Réun



Wholesale market prices in Europe

September 2014

						ELIDADI	EAN UNION -	ELIDO	
					Germany	Belgium	France	Holland	UK
AVOCADO	Air	TROPICAL	BRAZIL	Box	Germany	Deigiani	13.20	15.50	10.03
			DOMINICAN REP.	Box			12.00	10.00	
	Sea	FUERTE	SOUTH AFRICA	Box				7.50	
		HASS	KENYA	Box	6.25		5.33		6.27
			PERU	Box	7.00		6.50	7.00	
			SOUTH AFRICA	Box	7.00		6.73		
		NOT DETERMINED	PERU	Box					10.65
		DVAN	SOUTH AFRICA	Box			7.50	0.50	10.03
		RYAN	SOUTH AFRICA	Box			7.50	8.50	
BANANA	Air	RED	ECUADOR	kg				4.88	
		SMALL	COLOMBIA	kg			6.95	5.17	
	Sea	RED	ECUADOR	kg				2.06	
		SMALL	ECUADOR	kg			1.70		
CARAMBOLA	Air		MALAYSIA	lea			1 06	F 26	
CARAMBULA	Sea		MALAYSIA	kg kg			4.86	5.26	3.58
	Jea		IVIALATISIA	Ng					3.30
CHAYOTE	Sea		COSTA RICA	kg				1.37	
COCONUT	Coo		COSTA DICA	Pag				17.50	
COCONUT	Sea		COSTA RICA COTE D'IVOIRE	Bag Bag			11.00	17.50 11.64	13.79
			DOMINICA	Bag			11.00	11.04	13.79
			SRI LANKA	Bag				20.00	10.97
				bug				20.00	10.57
DATE	Sea	MEDJOOL	ISRAEL	kg				7.59	8.27
			MEXICO	kg				9.30	
			PERU	kg				6.50	
		NOT DETERMINED	EGYPT	kg		2.00			4.70
			IRAN	kg		3.00	2.00		
			ISRAEL	kg			2.00		2.01
			TUNISIA	kg					2.01
DURIAN	Air		THAILAND	kg				8.00	
EDDOE	Sea		COSTA RICA	kg			2.50	1.96	
GINGER	Sea		BRAZIL	kg					2.69
CINCEN	Jea		CHINA	kg			3.50	3.14	2.07
			THAILAND	kg			5.50	3.27	3.24
							'		
GUAVA	Air		BRAZIL	kg				5.88	
	Sea		BRAZIL	kg					2.29
KUMQUAT	Air		BRAZIL	kg					3.76
Romgon	/ \l		SOUTH AFRICA	kg				3.70	5.01
			300111711111111111111111111111111111111	19			l	5., 6	
LIME	Air		MEXICO	kg			5.00		
	Sea		BRAZIL	kg		1.04	2.00	1.41	1.24
	"		KENYA	kg			2.00		2.13
			MEXICO	kg	1.33	1.04		1.50	1.70
LONGAN	Air	,	THAILAND	kg				8.35	
	Sea		THAILAND	kg				3.92	
MANGO	Air	KENT	ISRAEL	kg			3.50		
		NAM DOK MAI	THAILAND	kg				8.60	
	Sea	ATKINS	BRAZIL	kg				2.00	1.25
		KEITT	BRAZIL	kg				2.00	1.89
			ISRAEL	kg				1.94	
		KENT	ISRAEL	kg			2.20		
		NOT DETERMINED	DOMINICA	kg					1.96
			ISRAEL	kg					2.03
	₊ .	PALMER	BRAZIL	kg			2.20	2.13	2.15
	Truck	OSTEEN	SPAIN	kg				1.88	
MANGOSTEEN	Air		THAILAND	kg				7.34	
MANIOC	Sea	·	COSTA RICA				1.20	1.04	
MANIOC	Jed		CO214 VICA	kg			1.20	1.04	



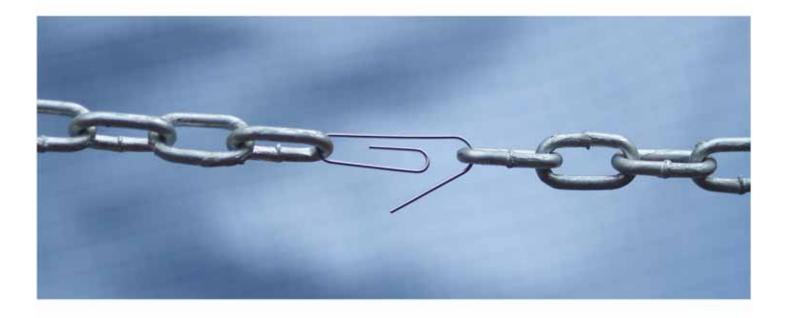
					EUROPEAN UNION - EUROS					
					Germany	Belgium	France	Holland	UK	
MELON	Sea	CANTALOUP	BRAZIL	kg				1.60	2.07	
		CHARENTAIS	BRAZIL	kg				1.60		
		GALIA	BRAZIL	kg				1.70	2.26	
		LIONEY/ DEW	EGYPT	kg	0.00			0.00	1.88	
		HONEY DEW	BRAZIL	kg	0.90			0.92	1.29	
		PIEL DE SAPO	BRAZIL	kg				1.03	0.04	
		SEEDLESS WATER WATER MELON	BRAZIL BRAZIL	kg				0.76	0.94 0.85	
		WATER WELOW	DRAZIL	kg					0.65	
PAPAYA	Air	FORMOSA	BRAZIL	kg		3.00		3.23		
		NOT DETERMINED	BRAZIL	kg		3.57	3.30	3.49	3.84	
			THAILAND					4.81		
	Sea		ECUADOR	kg				2.38	1.97	
DACCION EDILIT	Δ:,,	NOT DETERMINED	COLOMBIA	l.a.	5.00	F 25	F F0	F 40	F 01	
PASSION FRUIT	Air	NOT DETERMINED PURPLE	ISRAEL	kg	5.00	5.25	5.50	5.40	5.01	
		PURPLE	KENYA	kg kg		5.25		4.75	4.70	
			VIETNAM	kg		3.23	7.80		4.70	
			ZIMBABWE	kg			7.00	5.25		
		YELLOW	COLOMBIA	kg				8.69		
		TEELOW	COLONIDIA	ı kg				0.05		
PHYSALIS	Air	PREPACKED	COLOMBIA	kg			9.50	6.67	8.75	
	Sea		COLOMBIA	kg				6.67		
DINEADDLE	Δ:	VICTORIA	MALIDITUIC	D	1		1	12.00		
PINEAPPLE	Air	VICTORIA	MAURITIUS REUNION	Box			2.00	13.88		
			SOUTH AFRICA	kg Box			3.90	12.15		
	Sea	MD-2	COSTA RICA	Box	8.31	8.00		8.18		
	Sea	IVID-2	COSTA RICA	kg	0.31	8.00	0.85	0.10		
			COSTA RICA	Piece			0.05		0.88	
			COTE D'IVOIRE	kg			0.90		0.00	
			COTE D'IVOIRE	Piece			0,20		0.85	
			PANAMA	Box				9.17		
			PANAMA	Piece					1.00	
			1	i.						
PITAHAYA	Air	RED	ISRAEL	kg				6.50		
		VELLOW/	VIETNAM	kg				7.01		
		YELLOW	COLOMBIA	kg				9.33		
			ECUADOR ISRAEL	kg				7.17		
			COLOMBIA	kg				7.17	3.76	
			COLOIVIDIA	kg					3.70	
PLANTAIN	Sea		COLOMBIA	kg			1.10			
			COSTA RICA	kg					1.67	
			ECUADOR	kg			0.90	1.02		
DAMBUTAN	Δ:		THAHAND		1		1	7.47		
RAMBUTAN	Air		THAILAND					7.47		
SAPODILLA	Air		THAILAND					8.25		
SWEET POTATO	Sea	NOT DETERMINED	HONDURAS	kg					1.62	
	Jeu	. TO I DETERMINALD	ISRAEL	kg			1.90	1.31	1.02	
			SOUTH AFRICA	kg			1.50	1.51		
		WHITE	BRAZIL	kg			50	1.35		
			HONDURAS	kg				1.35		
TAMARILLO	Air		COLOMBIA	kg				6.90		
				ı Ny						
TAMARIND	Air		THAILAND					3.07		
YAM	Sea		BRAZIL	kg					1.50	

Note: according to grade

These prices are based on monthly information from the Market News Service, International Trade Centre UNCTAD/WTO (ITC), Geneva. MNS - International Trade Centre, UNCTAD/WTO (ITC), Palais des Nations, 1211 Geneva 10, Switzerland — T. 41 (22) 730 01 11 / F. 41 (22) 730 09 06

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Information... your weak link?



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