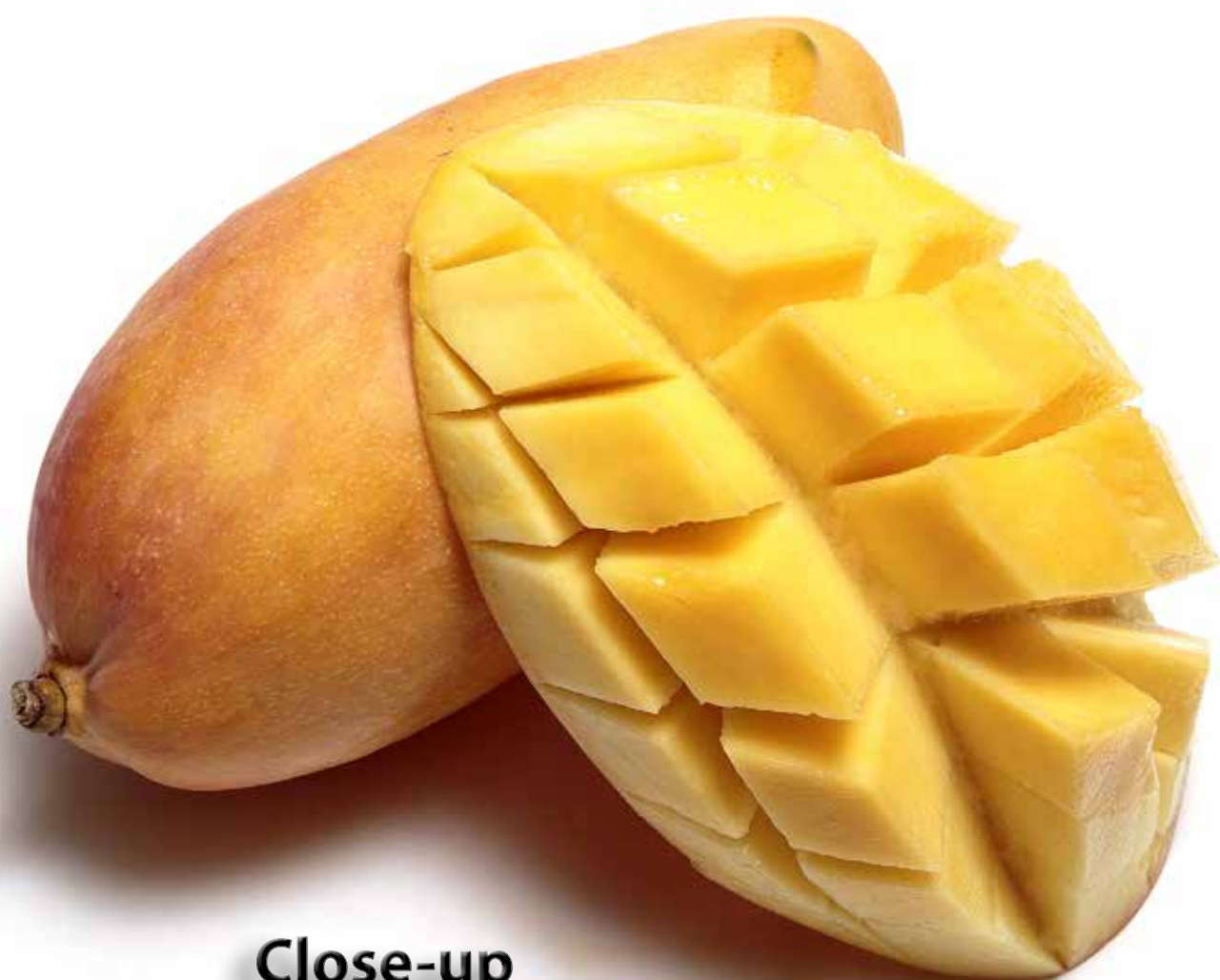


**Apples and pears**

**Tunisian dates**

**Israeli dates**



**Close-up**

# Mango

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**Eating five portions of fruit and vegetables a day... kills.** *This is doubtless the message that the average consumer will pick up from distractedly reading the pseudo-scientific articles in the mainstream national and international press. The buzz, which has now usurped actual information, is pulling no punches with our friends fruit and vegetables, or with food in general. Pesticides are everywhere. Producers are awful polluters under the thumb of the industrial-phyto-pharmaceutical complex. If this seems to you an outrageous verdict, then you are among the few to have retained the redeeming capability of critical thought, part of a dwindling resource, in a world where nuance and reasoning have practically lost their place. We must decide quickly and in line with the majority, which as you know holds sway. The "reaction referendum" is firmly in control. Never mind if the remedies (alternative treatments or replacement products) or the effects (reduced production) could be worse than the original problem. Any collateral damage will be handled by the next lot. Because, as we know, political courage dissolves readily in the vox populi. The half-life of a political decision-maker is now definitely counted in months. Fortunately for fruits and vegetables, calculators are being put to hard work. Oxford University has just established a worldwide, direct and definitive link between climate change and falling consumption of fruit and vegetables and increased mortality. Lower fruit and vegetables consumption due to lower production due to global warming, with the result that half a million more people will die in 2050. Damn, what a dilemma! How do you choose between dying from pesticides for eating too much fruit and vegetables, or dying from not having eaten enough?*

Denis Loeillet



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**FRUITROP**

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Cover photograph: © Guy Bréhinier



## Banana

### January/February 2016

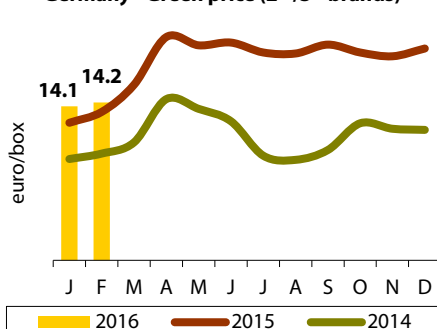
After a tight January, the European markets gradually recovered a better balance in February. Demand registered a good recovery at the beginning of the year, with sales climbing thanks to very weak competition from other fruits, to temperatures favourable for consumption and to some promotions. In addition, this recovery was aided by a limited supply, due to the smaller shiploads from the end of the year and moderate overall supply levels. The combined volumes from Africa and the French West Indies rose on average in February, after being affected in January by delayed shipping and a violent Harmattan (Côte d'Ivoire). On the dollar banana side, the impacts of the much-anticipated El Niño remained invisible in January: the rains in Ecuador had little consequence on production levels, and Costa Rica retained favourable conditions. Only Colombian volumes started to subside in February, because of a severe drought. However, from mid-February, the market tension eased. Demand slowed down slightly in Western Europe (school holidays in certain countries), and a temporary wave of incoming shipments onto the East European markets curbed sales. Hence there was a pause in the rapid price increase ongoing since January, with rates stabilising at high levels.



#### NORTHERN EUROPE — IMPORT PRICE

February 2016 euro/box	Comparison	
	previous month	average for last 2 years
14.16	+ 1 %	+ 4 %

#### Germany - Green price (2<sup>nd</sup>/3<sup>rd</sup> brands)



### Banana: purée prices in Europe in December 2015.

Type	Price (USD/t)	Source	Comments
ss aseptic, 22°Brix	650-700 cfr Rotterdam	Ecuador	Demand and supply seemingly balanced since the last price increase.

Note: cfr: cost and freight / Source: MNS-ITC Geneva

■ **Canaries banana: on an increasingly solid footing in Spain, but...** The market share of the Canaries platano in the Spanish peninsula in 2015 was 72%, according to Kantar Worldpanel (i.e. 347 000 t of the 481 000 t consumed)! This figure is up by 11 % from 2014, thereby confirming the evident growth trend over the past few years. Nonetheless, this fine performance was counterbalanced by an 8 % fall in the green price (0.75 euro/kg in 2015, as opposed to 0.81 in 2014); a level often insufficient to cover production and marketing costs despite European aid, according to the Chairman of the producers' association (Asprocan).

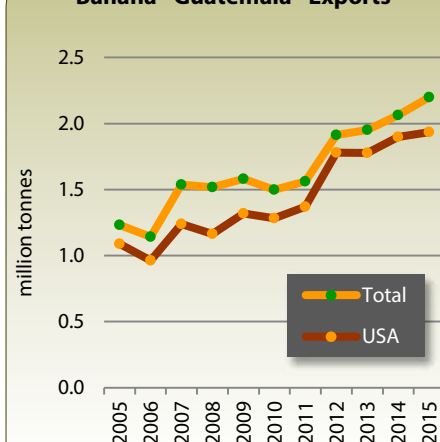
Source: Asprocan

■ **The banana, Guatemala's number three export product in 2015.** The 759 million USD made from banana exports was still less than the turnover from the clothing and sugar sectors (1 326 million and 851 million respectively), but exceeded for the first time in more than twenty years that of coffee (663 million). This performance

illustrates the surge in Guatemalan banana volumes sold on the world market, up from approximately 1.5 million tonnes in the late 2000s to the record level of 2.2 million tonnes in 2015. According to the Ministry of Agriculture, the Guatemalan cultivation area expanded by more than 7 500 ha between 2010 and 2014, in zones where extremely favourable pedoclimatic conditions enable record yields to be achieved. The US market remains practically the sole outlet for Guatemalan banana exports (nearly 90 % in 2015).

Source: Banco del Guatemala

#### Banana - Guatemala - Exports



Source: Trademap

#### EUROPE - RETAIL PRICE

Country	February 2016		Comparison	
	type	euro/kg	January 2016	average for last 3 years
France	normal	1.62	0 %	+ 2 %
	special offer	1.44	+ 5 %	+ 9 %
Germany	normal	1.34	- 4 %	+ 3 %
	discount	1.24	+ 2 %	- 1 %
UK (£/kg)	packed	0.99	- 1 %	- 6 %
	loose	0.72	0 %	- 3 %
Spain	platano	2.04	- 5 %	+ 9 %
	banano	1.29	+ 2 %	- 4 %



# WITH OUR BANANAS, YOU ALWAYS TICK THE RIGHT BOXES



17 kg



18 kg



Organic



Fairtrade



Ripening centre flow pack



Source pack

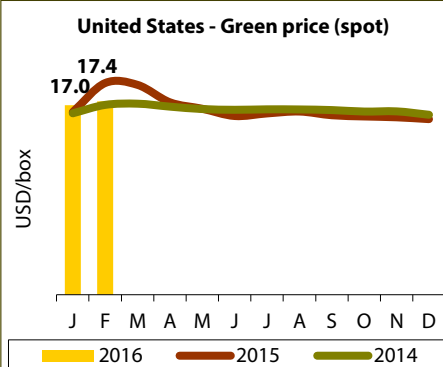
To enable you to sell our produce under optimum conditions, we take great care with the packing process. SCB Premium bananas, grown mainly on our plantations in West Africa, are available in open-top, reversible and telescope boxes with lids, from 5 kg to 18 kg, or in source packs and flow packs, ...

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## Banana

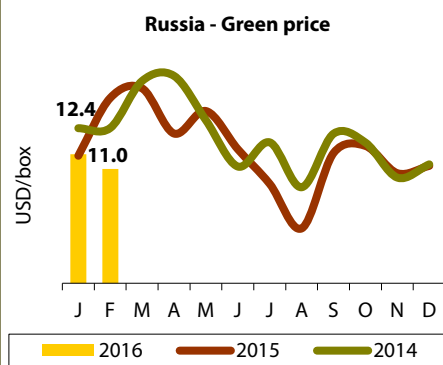
UNITED STATES



## UNITED STATES - IMPORT PRICE

February 2016 USD/box	Comparison	
	previous month	average for last 2 years
17.39	+ 2 %	- 4 %

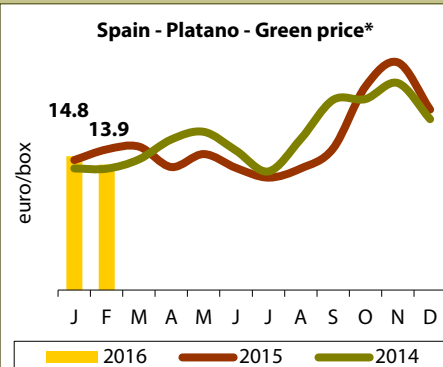
RUSSIA



## RUSSIA - IMPORT PRICE

February 2016 USD/box	Comparison	
	previous month	average for last 2 years
10.95	- 11 %	- 33 %

CANARIES



## CANARIES - IMPORT PRICE\*

February 2016 euro/box	Comparison	
	previous month	average for last 2 years
13.90	- 6 %	- 4 %

\* 18.5-kg box equivalent

### European banana consumption proved stable in January 2016 compared to the previous year.

The EU banana consumption was 474 000 tonnes, though its stability should be put in perspective since this came after two months (November and December 2015) of very high consumption. It is the Community sources, and more specifically the French West Indies, which dampened down the result, with Martinique and Guadeloupe on a steep slide. At the same time, the Canaries continued to soar. Dollar sources, meanwhile, were steady (- 1.1 %), while ACP-Africa was back to its heights (+ 15.2 %). Colombia and Costa Rica, on the dollar side, and Côte d'Ivoire and the Dominican Republic on the ACP side, were driving the market. Ecuador, Panama and Peru were all on the wane. Over twelve months (December 2015 to January 2016), the consumption of the EU-28 rose again by 3 %, with a gain of 161 000 t, to climb to approximately 5.8 million tonnes. Out of the last twelve months, nine months were positive and just three negative. The dynamic seems well-established.

The United States began the year with a flourish, climbing by 3 % in January 2016, in terms of both imports and consumption. Just this once, Guatemala, the leading supplier, was down by 7 %, as were Honduras, Colombia and Mexico. Conversely, Ecuador and Costa Rica boomed (more than 20 % gain).

We should emphasise that the French market went against the European and US trend at the beginning of 2016. Consumption was down by more than 20 % from January 2015, and 8 % below the three-year average. This analysis can be tempered by the observation that the supply in December was historically high and that deferred consumption is likely, though without reversing the downward trend. Indeed, as we will show in the next edition of **Fruitrop**, dedicated to the world banana review, France has struggled to stabilise its annual consumption (553 000 tonnes), whereas EU-28 consumption is up by 3 %.

Source: CIRAD

## Banana — January 2016 (provisional)

000 tonnes	2014	2015	2016	2016/2015 difference
<b>EU-28 — Supply</b>	<b>485</b>	<b>474</b>	<b>474</b>	<b>0 %</b>
<b>Total imports, of which</b>	437	426	429	+ 1 %
MFN	353	352	348	- 1 %
ACP Africa	49	42	48	+ 15 %
ACP others	36	32	32	0 %
<b>Total EU, of which</b>	48	48	45	- 6 %
Martinique	10	15	12	- 19 %
Guadeloupe	6	6	4	- 34 %
Canaries	31	25	27	+ 7 %
<b>USA — Imports</b>	<b>366</b>	<b>349</b>	<b>359</b>	<b>+ 3 %</b>
Re-exports	46	46	46	- 1 %
Net supply	320	302	313	+ 3 %

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

## EUROPE - IMPORTED VOLUMES - FEBRUARY 2016

Source	Comparison		
	January 2016	February 2015	2016 cumulative total compared to 2015
French West Indies	↗	- 9 %	- 9 %
Cameroon/Ghana/Côte d'Ivoire	↗	+ 18 %	+ 19 %
Surinam	↗	- 38 %	- 30 %
Canaries	↗	+ 20 %	+ 14 %
Dollar :			
Ecuador	↗	+ 9 %	+ 4 %
Colombia*	=↗	+ 1 %	+ 4 %
Costa Rica	=↘	- 2 %	+ 5 %

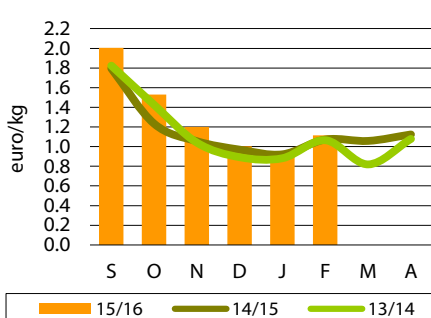
Estimate made thanks to professional sources / \* total for all destinations

## Easy peelers

January/February 2016

After a lively start to the year, easy peeler sales became difficult. Despite Spanish Nules winding down early, with sorting rejects, batches of heterogeneous quality were available until late January at competitive prices. Moroccan Nour volumes progressed to a very high level. Finally, Or imports from Israel started to rise. Sales slowed further in February with the start of the school holidays and the diversification of the supply: the Spanish and Moroccan Nadorcott campaigns began, rapidly progressing to high volumes, Ortanique came onto the market and the Israeli Or supply continued to progress, exhibiting great heterogeneity in terms of quality and price. Finally, some Turkish Minneola batches were available. Prices continued to fall, returning to an average level.

Easy peelers - France - Import price



PRICE	Type	Average monthly price euro/kg	Comparison with average for last 2 years
	Clementine	0.81	+ 2 %
	Hybrids	1.20	+ 0 %

VOLUMES	Type	Comparison	
		previous month	average for last 2 years
	Clementine	↘	- 40 %
	Hybrids	↘	+ 2 %

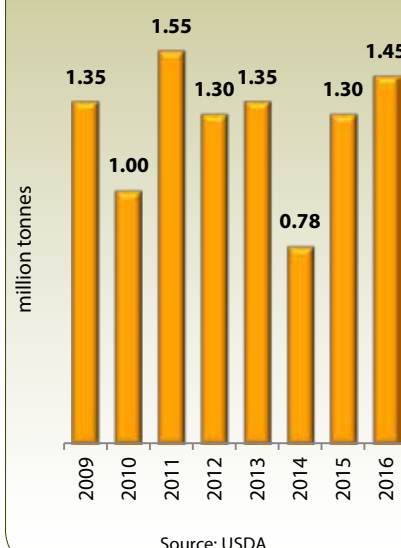
VOLUMES	Varieties by source	Comparison		Observations	Cumulative total / cumulative average for last 2 years
		previous month	average for last 2 years		
	Spanish clementine	↘	- 51 %	Early end for Nules because of a campaign in shortfall and sorting rejects. Some batches of heterogeneous quality available until late January.	- 20 %
	Moroccan clementine	↘	+ 27 %	End of the Moroccan Nour campaign, with bigger volumes than in previous years.	+ 50 %
	Spanish hybrids	↘	- 4 %	Early end for Clemenvilla and Hernandine. Nadorcott progressing, with bigger volumes than in previous years.	+ 10 %
	Moroccan Nadorcott	↗	+ 33 %	Start of the Nadorcott campaign, with volumes rapidly progressing to high levels.	+ 33 %

■ **Argentinean lemon: 2016 season looking good.** Finally, most of the indicators seem to back to green for the world's number one producer. On the one hand, production should regain a "normal" level, with 1.45 million tonnes expected, according to the USDA. The trees have recovered from the frosts of 2014, and weather has been fairly favourable, with sizing set for a good level. On the other hand, the markets seem open. Prices of industrial derivatives, the country's speciality, are registering lower levels than in 2015, but they are set fair. Furthermore, world demand for fresh lemon seems promising, and prices look set to be more lucrative for the upstream segment, thanks to the economic measures implemented recently, relating to the peso/dollar exchange rate. The campaigns in the Mediterranean countries supplying the European market during the winter should finish early, since all the players are registering significant shortfalls: from Turkey (- 5 to - 10 % from the last two seasons), to Italy (drop even steeper due to lack of rain), as well as Spain. Ailimpo, the Spanish lemon interprofessional association, has revised its forecasts downward, and is now reckoning on a production fall of 23 % from last season, considering that the end-of-season variety Verna has practically halved (160 000 t as opposed to 300 000 t in 2014-15).

Sources: USDA, Foodnews, Ailimpo

Source: The Packer

Lemon - Argentina - Production



Source: USDA

■ **"Peak of season" oranges: Sunkist's idea as simple as it is brilliant.** This differentiation of Navel oranges produced in the peak-season period, when their taste is at its peak, should be a striking idea for consumers; since it conjures up images of a traditional method of cultivation, taking the time to produce fruit to delight the taste buds. This message is conveyed on the D-pack film of the girsac.

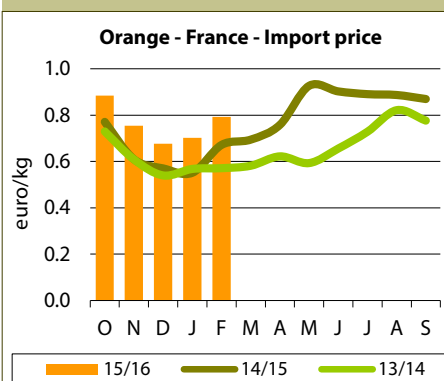




## Orange

### January/February 2016

The market maintained a good dynamic in January thanks to demand being boosted by lack of competition from easy peelers. In addition, the table orange supply, already in shortfall, started to wane early in January, with the end of Naveline and the Navels. Hence the first Navelates arrived from late January, with prices strengthening throughout the month. In February, despite milder temperatures and the start of the school holidays, orange sales remained favourable. Navelate volumes continued to progress quicker than in previous years, as did juice oranges (Salustiana). Prices followed their seasonal rise to higher levels than in previous years. After starting the campaign in January with high volumes, the Tunisian Maltaise supply returned to a level nearer normal for the season in February.



PRICE	Type	Average monthly price euro/15-kg box	Comparison with average for last 2 years
	Dessert orange	11.40	+ 29 %
	Juice orange	10.83	+ 22 %

VOLUMES	Type	Comparison	
		previous month	average for last 2 years
	Dessert orange	↘	- 4 %
	Juice orange	=	+ 8 %

VOLUMES	Varieties by source	Comparison		Observations	Cumulative total / cumulative average for last 2 years
		previous month	average for last 2 years		
	Spanish Navel	↘	- 26 %	Campaign winding down early, production shortfall.	- 1 %
	Spanish Navelate	↗	+ 42 %	Early arrival of Navelate, with very rapid progress.	+ 79 %
	Spanish Salustiana	=	+ 8 %	Incoming shipments stable and above average.	+ 37 %
	Tunisian Maltaise	=	+ 5 %	Volumes stabilising after a very high start to the campaign.	+ 40 %

■ **Moroccan citrus: imports into the United States banned until further notice.** The decision was made by the US sanitary authorities in late January, following the detection of a Mediterranean fly larva in a batch of clementines from Berkane. The cold treatment insect control protocol in force since 1991 seems to have been scrupulously followed. Both parties are considering implementing additional measures in order to lift the sanction. This decision came against a backdrop of steep growth by Moroccan citrus exports to this market since the beginning of the decade. They reached approximately 50 000 t in 2014-15, primarily comprising seasonal clementines and late varieties such as Nour and Nadorcott. This situation is not without echoes of the measure taken against Spanish citrus for the same reason in late 2001, in the same context of steeply rising volumes. Have Californian producers overreacted again?

Sources: L'Economiste, CIRAD

■ **Orange juice: no Dreyfus affair after all?** Louis Dreyfus Commodities is apparently trying to sell its juice business ("Louis Dreyfus citrus"). The rumour, in circulation since mid-2014, returned with a vengeance at the end of 2015. This decision is said to be aimed at switching the focus of the group's business portfolio toward more profitable trades (the fertilisers and metals branches are said to be in the crosshairs too). The list of potential purchasers of this giant, which controls approximately 15 % of world orange juice production

Citrus — Morocco 2014-15 exports			
000 t	USA	Total	Share for USA
Clementine	23.4	165.0	14 %
Nadorcott	8.4	99.3	8 %
Nour	12.0	71.7	17 %
Others	1.7	9.5	18 %
<b>Easy peelers</b>	<b>45.5</b>	<b>345.5</b>	<b>13 %</b>
Orange	2.0	109.1	2 %
<b>Total</b>	<b>47.5</b>	<b>461.5</b>	<b>10 %</b>

Source: EACCE

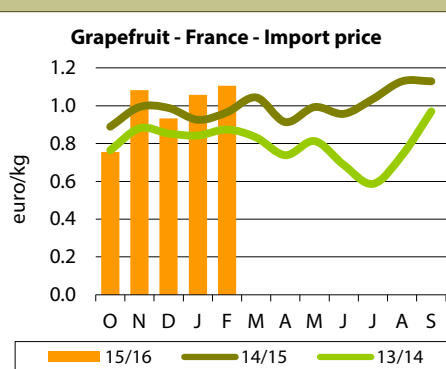
with its seven factories (especially in Brazil, but also in the USA and China), is not too long. The Brazilian anti-trust authorities will probably not let the other two colossuses of the juice world strengthen their grip — as disputed as it is dubious — over the upstream segment. Citrosuco, the world leader, already accounts for 30 % of the market in light of the takeover of Citrovita in late 2011, and the number two Cutrale accounts for approximately 25 %. Furthermore, there are not really legions of other industrial groups interested in such a large-scale operation, especially since the profitability of the sector is not at its best because of the additional expenses due to managing greening, and because of waning world consumption. So there are still no clear sightings of this potential transaction. As a real Brazilian speciality, it is only fitting for orange juice to be fuelling such a telenovela!

Sources: Foodnews, Squeeze out, Capital

# Grapefruit

## January/February 2016

After a difficult end to the year, the market recovered a better balance. For the tropical grapefruit, the big supply shortfall in January was in step with demand slowed by historically high prices. Hence, sales from Mediterranean sources, also in shortfall, proved more dynamic thanks to some promotions. However, contrary to the forecasts, the Floridian supply rose in February to higher levels than last year. Despite some quality concerns, prices remained much too high. Hence some stocks formed, in particular for size 40. In this context Mediterranean grapefruit sales remained fluid, despite rising imports. Prices strengthened slightly, reaching above-average levels, though they remained more accessible than those of the Floridian grapefruit.



PRICE	Type	Average monthly price euro/17-kg box equivalent	Comparison with average for last 2 years
	Tropical	22.97	+ 24 %
	Mediterranean	12.24	+ 14 %

VOLUMES	Type	Comparison	
		previous month	average for last 2 years
	Tropical	↗	- 5 %
	Mediterranean	↗	+ 19 %

VOLUMES	Source	Comparison		Observations	Cumulative total / cumulative average for last 2 years
		previous month	average for last 2 years		
	Florida	↗	- 5 %	Floridian supply up in February, with volumes still in shortfall.	- 17 %
	Israel	↗	+ 18 %	Marked rise in imports in February, after January's shortfall.	+ 17 %
	Turkey	↗	+ 25 %	Incoming shipments in January stable and in shortfall. Imports picking up in February, with higher volumes than in previous years.	+ 14 %

## ■ Citruses: juice prices in Europe in December 2015.

	Type	Price (USD/t)	Source	Comments
Grapefruit	Frozen concentrate, 58°Brix, red, ratio 6-8.5	1 100-1 250 cfr Netherlands	South Africa	Demand still low. Caribbean juices still available for fairly stable prices. Practically no red stocks remaining from South Africa, except at very high prices.
	Frozen concentrate, 58°Brix, white, ratio 7-9	2 000 cfr Rotterdam		
	Frozen concentrate, 58°Brix, white, ratio 9<	2 400-2 600 cfr Rotterdam	Caribbean	
Orange	FCOJ, Pera, 66°Brix, loose, ratio 14-16	1 800-1 900 fca Netherlands	Brazil	Demand waning very rapidly, especially in the USA. Forecasts predict the smallest Floridian harvest for the past thirty years. Brazil set for smaller yields, but with better quality.
	FCOJ, blood orange, 55°Brix	2 600-2 700 EUR/t exw Italy	Italy	
Lemon	Frozen concentrate, cloudy, 500 gpl	3 500-3 800 cfr Rotterdam	Argentina	Considerable price falls in recent months. Climb in stocks, leading to a slowdown in demand.
	Frozen concentrate, clear, 500 gpl	4 000-4 300 cfr Rotterdam		

Note: cfr: cost and freight / fca: free carrier / exw: ex-works / Source: MNS-ITC Geneva

## ■ Corsican grapefruit forecast.

While the Floridian campaign ended in a sluggish context, the arrival of the Corsican grapefruit on the French market is making a more auspicious start. It should be early, with the first sales coming in week 12. This is a result of mild temperatures during the winter and the growing interest from the distribution sector in French produce. With an expected 4 000 t (of which 1 000 t organic), production should be only slightly greater than last year, and primarily comprise medium sizes.

Source: Cirad

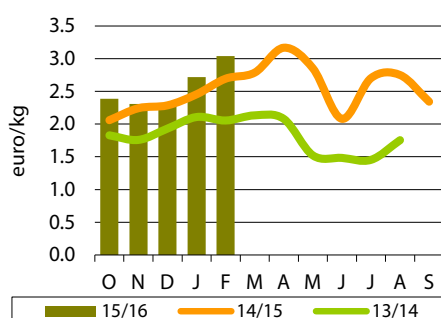


## Avocado

### January/February 2016

The limited supply strengthened the market considerably in January. Although Chilean imports remained above average and the supply was topped up by Mexican and Colombian volumes, they were not sufficient to offset the shortfall from Mediterranean sources. So Hass prices rapidly strengthened to reach record levels in January (+ 19 %). The market, still extremely tight in early February, started to recover a better balance with the unexpected rise in Chilean and Mexican volumes. Hence import prices registered some downward readjustments, though levels remained historically high. The supply of green varieties, mainly from Israel, also exhibited high price levels, given the large supply shortfall.

Avocado - France - Import price



■ **Creation of the world avocado organisation (WAO).** The founding act of this association, several years in the making, was signed in Berlin at the Fruit Logistica show by five founding countries: South Africa, Brazil, the United States, Mexico and Peru. Its main objective is to self-fund actions aimed at promoting avocado consumption, especially in Europe and Asia. The US avocado market players, who pioneered such campaigns with the HAB, have demonstrated the effectiveness of this type of approach. The consumption per capita has practically tripled on the other side of the pond, going from approximately 1 kg at the HAB's inception in 2002 to nearly 3 kg in 2015, thanks to the considerable budget (more than 46 million USD in 2014) raised via a levy of 5 USD cents per 11.14-kg box. The actions of the WAO should help fully harness the boom in European consumption, and the growth reservoirs present in Asia. This is a necessity for the coming years, given the particularly strong growth dynamic of Peruvian and Mexican production. The first promotions are set to be launched this year in Germany, Spain, the United Kingdom and certain Scandinavian countries.

Sources: WAO, CIRAD

■ **Jalisco avocado: coming soon to the United States.** This is according to statements by several Mexican bodies overseeing this deal. The cultivation area covers approximately 15 000 ha, with approximately 8 600 ha approved for export. The average yields are the highest in the country, at approximately 15 t/ha.

Source: InfoHass

■ **Guacamole: an innovative and fashionable stabilisation process!** High-pressure stabilisation treatments, already widely employed in the food industry, can eliminate micro-organisms without affecting taste, texture or colour. However, most enzymes remain intact and sporulated bacteria are not destroyed. The technique developed under the European HIPSTER project, which combines isostatic high pressure and heat treatment, meets this double challenge of food safety and stability. Laboratory tests have been able to extend the storage life of guacamole from 3 to 30 days. An industrial pilot with a 30-litre treatment capacity is set to be tested in late 2016.

Source: [www.hipster-project.eu](http://www.hipster-project.eu), January 2016 edition of "process alimentaire"



PRICE	Varieties	Average monthly price euro/box	Comparison with the last 2 years
	Green	9.00	+ 32 %
	Hass	12.06	+ 19 %

VOLUMES	Varieties	Comparison	
		previous month	average for last 2 years
	Green	↘	- 33 %
	Hass	↗	+ 11 %

VOLUMES	Source	Comparison		Observations	Cumulative total / cumulative average for last 2 years
		previous month	average for last 2 years		
	Israel	↗	- 30 %	Hass progressing, but volumes in shortfall. Green varieties winding down, with a marked shortfall too.	- 19 %
	Chile	↗	+ 54 %	Unforeseen rise in incoming shipments in February, with high levels.	+ 43 %
	Mexico	↗	+ 225 %	Fall in supply in January in the run-up to the Superbowl in the USA, but EU-bound volumes back to very high levels in February.	+ 158 %
	Spain	↘	- 10 %	Considerable rise in supply in January, but back to more moderate levels and into shortfall in February.	+ 23 %





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Accreditations such as GlobalGAP, IFS, Fairtrade, BRC, SIZA and HACCP assure customers of Westfalia's commitment to producing safe, high-quality food while ensuring the sustainable and responsible management of its bio-resources and the communities and environment in which it operates.

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# Pineapple

## January/February 2016

Early January brought a tight situation on the pineapple market, with poor quality stored batches complicating the marketing of incoming fruits. The market conditions gradually improved as the stored batches were used up. From the beginning of the second half of January the fall in the supply, from Costa Rica or Africa, boosted the improvements to sales and stocks, so that the market was on the up in early February. Sales were fairly quiet in the first half-month, especially because of the Fruit Logistica show in Berlin occupying the operators. However, the start of the winter school holidays across Europe resulted in a slump in demand. Fortunately, the fall in the supply which began in late January continued throughout February. Although lukewarm, demand nonetheless remained greater than the volumes on the market. This led to rates strengthening and to fluid sales throughout the month. And although the market seemed a bit slower at the end of the month, the level of rates remained stable, with the overall Sweet supply still less than demand.

On the air-freight market, the overall supply constantly declined, affected by various factors. In January, demand, which was rather lively, struggled to procure supplies on the markets. There were several factors significantly depressing the supply: MRL problems out of Benin and freight availability problems in Cameroon, increasingly high freight costs in Ghana. The supply available sold rather well, at fairly strong rates. The situation was less rosy in February. The staggering of the school holidays over several weeks curbed demand, and sales were less active. With the exception of Côte d'Ivoire, all the sources saw falling volumes, es-

pecially Cameroon with the closure of Douala airport. Despite the listlessness of the market, rates remained stable, with the overall supply not excessive. At the end of the month, activity was even quieter and several operators had to optimise their stock management, with some quality concerns apparent. From the beginning of the year, the Sugarloaf supply was smaller, which helped this market remain fluid, with decent price levels.

In January, the Victoria market was less active. It saw a decrease in supply, especially from Reunion, which gradually adapted to the less lively post-holiday demand. Conversely, prices saw a rise since the volumes available could not fully satisfy customer demand. In February, the fall in the overall Victoria sup-

ply intensified. At the beginning of the month, this resulted in Reunion fruit being better valued. But at the end of the month, the arrival of small fruits onto the market caused the rate range to widen.



© Pauline Feschet

### ■ Pineapple: juice price in Europe in December 2015.

Type	Price (USD/t)	Source	Comments
Frozen concentrate, 60°Brix, Smooth Cayenne variety	3 400-3 800 fca Netherlands	Thailand	Availability very low due to disastrous harvests. After serving the fresh and tinned markets, very little high-quality fruit left for juice. In terms of the market balance, concerns that mediocre quality fruits might be used. In addition, Asian harvests might be adversely affected by El Niño.
Aseptic concentrate, 60°Brix, Smooth Cayenne variety	3 400-3 800 cfr Rotterdam		
NFC, ss aseptic, 12°Brix, MD-2 variety	850-950 ddp London	Costa Rica	

Note: fca: free carrier / cfr: cost and freight / ddp: delivered duty paid / Source: MNS-ITC Geneva

### PINEAPPLE - IMPORT PRICE IN FRANCE - MAIN SOURCES

Weeks 2016		1	2	3	4	5	6	7	8
Air-freight (euro/kg)									
Smooth Cayenne	Benin	1.85-1.95	1.85-1.95	1.85-1.95	1.85-1.95	1.85-1.90	1.80-1.90	1.80-1.90	1.80-1.90
	Cameroon	1.90-2.00	1.80-2.00	1.90-2.00	1.90-2.00	1.90-2.00	1.80-1.90	1.80-1.90	1.90-2.00
	Ghana	1.85-2.10	1.85-2.10	1.85-2.10	1.85-2.10	1.85-2.10	1.85-2.10	1.90-2.00	1.90-2.10
	Côte d'Ivoire	1.90-2.00	1.90-2.00	1.90-1.95	1.90-1.95	1.90-1.95	1.85-1.90	1.85-1.90	1.85-1.90
Victoria	Reunion	2.50-4.00	3.00-4.00	3.00-4.00	3.50-4.30	3.50-4.30	3.80-4.50	3.50-4.50	3.00-4.50
	Mauritius	3.00-3.60	3.00-3.60	3.00-3.60	3.30-3.80	3.30-3.80	3.80-4.00	3.00-4.20	2.70-3.60
Sea-freight (euro/box)									
Smooth Cayenne	Côte d'Ivoire	5.00-7.00	7.00-8.00	5.00-9.00	7.00-9.00	7.00-9.00	7.00-9.00	7.00-9.00	7.00-9.00
Sweet	Côte d'Ivoire	8.00-10.00	8.00-10.00	8.00-10.00	9.50-11.50	9.50-11.50	9.50-11.50	10.5-12.50	10.5-12.50
	Ghana	8.00-10.00	8.00-10.00	8.00-10.00	9.50-11.50	9.50-11.50	9.50-11.50	10.5-12.50	10.5-12.50
	Costa Rica	6.00-9.00	7.00-9.00	8.00-10.00	8.00-10.00	8.00-10.00	9.00-11.00	9.00-12.00	9.00-11.00

# Mango

## January/February 2016

January continued along the same lines as December. The large quantities from Peru and Brazil kept the market in a state of massive oversupply. In spite of the fall in Brazilian shipments, the European supply remained greater than demand, more modest at this time of year. Brazilian Kent suffered heavy competition from Peruvian fruits, and struggled to sell at generally lower prices. In the second half of the month, there was a certain improvement in the market conditions, especially for the medium sizes most sought after by the supermarket sector. This hesitant progress proved more marked in Northern Europe. February saw confirmation of January's improvements. However they proceeded very slowly in view of the large quantities shipped by Peru, which was becoming the dominant source.

After a fairly buoyant start to the year, the air-freight mango market deteriorated considerably in the third week of January, due to large shipments from Peru. Air-freight quality batches transported by sea also contributed to disrupting the market, with lower sale prices (3.50 euros/kg). The market gradually recovered from the second week of February, with smaller shipments. Rates

did not recover their level from the beginning of the year. In late February, a further increase in volumes obstructed the recovery. The substantial surge in quantities, against the backdrop of the school holidays, probably intensified the price fluctuations.



## ■ Mango: juice and purée prices in Europe in December 2015.

Type	Price (USD/t)	Source	Comments
Aseptic purée, 17°Brix, Alphonso variety	1 700-1 800 cfr Rotterdam	India	Only a few mixed batches left for Alphonso, with prices on the wane. Indian Totapuri harvest hard hit by high temperatures, with no stocks to be available before mid-2016. The same was true for Mexican Tommy Atkins stocks, while the forthcoming harvest could be affected by El Niño.
Aseptic concentrate, 28°Brix, Totapuri variety	1 350-1 450 cfr Rotterdam		
Aseptic concentrate, 28°Brix, Tommy Atkins variety	1 300-1 350 fca Netherlands	Mexico	

Note: cfr: cost and freight / fca: free carrier / Source: MNS-ITC Geneva

## MANGO - INCOMING SHIPMENTS (estimates in tonnes)

EUROPE

Weeks 2016	1	2	3	4
<b>Air-freight</b>				
Peru	80	140	150	80
<b>Sea-freight</b>				
Brazil	1 890	880	720	700
Peru	4 400	4 480	4 200	4 400
Ecuador	60	40	110	

## MANGO - INCOMING SHIPMENTS (estimates in tonnes)

EUROPE

Weeks 2016	5	6	7	8
<b>Air-freight</b>				
Peru	80	90	100	100
<b>Sea-freight</b>				
Brazil	770	600	880	830
Peru	4 150	7 520	6 300	1 900

## MANGO - IMPORT PRICE ON THE FRENCH MARKET

Weeks 2016		1	2	3	4	Average Jan. 2016	Average Jan. 2015
Air-freight (euro/kg)							
Peru	Kent	5.00-5.50	4.50-5.50	4.50-5.00	4.00-4.30	4.50-5.10	4.20-5.10
Sea-freight (euro/box)							
Brazil	Kent	3.00-4.50	3.00-4.50	-	-	3.00-4.50	5.30-7.30
Peru	Kent	3.50-6.00	3.00-4.50	3.00-6.00	3.50-6.00	3.25-5.60	6.70-8.20

## MANGO - IMPORT PRICE ON THE FRENCH MARKET

Weeks 2015		5	6	7	8	Average Feb. 2016	Average Feb. 2015
Air-freight (euro/kg)							
Peru	Kent	4.00-4.50	4.00-4.80	4.50-5.00	4.50	-	4.60-5.35
Sea-freight (euro/box)							
Peru	Kent	3.50-6.50	4.00-7.00	5.50-7.00	5.00-7.00	-	5.75-7.35

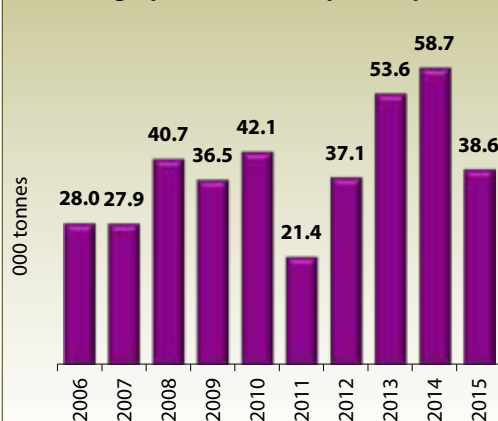


## Temperate fruits & vegetables

■ **Good prospects for Indian grapes.** The first grape containers were loaded in early February in India, bound for Europe. This year's campaign is fairly early. Exports could reach a record of approximately 200 000 t across all destinations, according to certain sources (152 400 t last year), with 65 000 t (38 600 t) earmarked for the European market and more than 20 000 t for Russia. Canada and Australia are now also loyal customers, whereas other markets such as China are tending to open up.

Source: Infofruit

Table grapes - India - European imports



Source: European Customs / Processed by INFOFRUIT



■ **Tasting of Chilean blueberries.** As planned, Chilean blueberry events and tastings were held in late January and early February in some of the main Monoprice and Auchan stores in the Paris region. Accompanied by significant price promotions, representing active collaboration between the two chains, these activities helped promote consumer awareness of the particular health benefits and culinary uses of this product still under-consumed in France. For the occasion, Mr. Pedro Duran, Director of Prochile France, the institution responsible for promoting exports of Chilean products and services, supported the activity by his presence in-store. Chile is among the big blueberry producer countries, with a current potential of more than 100 000 t for a surface area of approximately 16 000 ha. This pilot promotion campaign for Chilean blueberries, organised for the first time in France, is funded by the Chilean Blueberries Committee via ASOEX (Chilean Association of Fresh Fruit Exporters).

Source: Infofruit

■ **Diplomatic crisis between the EU and Morocco.** The decision by the European Court of Justice (ECJ) of 10 December, ruling in favour of the separatists of the Polisario Front and voiding nothing less than the trade agreement signed in 2012 on agricultural produce, triggered an incipient diplomatic crisis between Morocco and the European Community. Since although Western Sahara is classified as a "non-autonomous territory" by the UN, it is a former Spanish colony annexed by Morocco in 1975, for which the Polisario Front is claiming independence, with the support of Algeria. The Palace itself is closely involved in handling this highly political conflict. This explains the decision made by King Mohammed VI of

Morocco, conveyed by Mustapha Khalfi, the government spokesman and Minister for Communication: "Any contact with European institutions will be suspended," as of 25 February. "Morocco cannot accept being treated as a mere object in a judicial procedure, or being reduced to being shunted between the various services and institutions of the EU," stated the Minister. European Ministers however issued an appeal on Monday 14 December, specifying that the voiding of the agreement applied, for the time being, to the export of produce from the Sahara region only, pending examination by the ECJ of the interim measures proposed by the EU Council.

Source: Infofruit



# 2016 FOOD EXHIBITION CALENDAR

RWANDA

## AgroFood

FOOD, AGRICULTURE & TECHNOLOGIES EXHIBITION

26-28 May 2016

**Kigali / RWANDA**

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FOODEXPO 2016, will be one of the most important and prestigious trade show in food & agriculture & hospitality sector. MOROCCO FOODEXPO is an effective marketplace. As the main food, hospitality & technologies exhibition in Casablanca, it is a key event for specialists in the industry. It brings together international buyers, government authorities, businessmen, ministry representatives from central government, major Moroccan brands, banks,

[www.moroccofoodexpo.com](http://www.moroccofoodexpo.com)

MOROCCO

## FoodExpo

FOOD, HOSPITALITY & TECHNOLOGIES EXHIBITION

01-03 November 2016

**Casablanca / MOROCCO**

NIGERIA

## AgroFood

FOOD, AGRICULTURE & TECHNOLOGIES EXHIBITION

09-11 November 2016

**Lagos / NIGERIA**

### NIGERIA FOODDEXPO 2016

INTERNATIONAL FOOD, AGRICULTURE AND TECHNOLOGIES EXHIBITION

**Trade shows put your company and its products face to face with customers and prospects, your main objectives are to generate awareness and ultimately, to make a sale.** Nigeria is now Africa's largest foreign direct investments beneficiary, and its diversification is well underway. Indeed, the non-oil sector is growing faster than the oil sector as Nigeria's 180 million-strong population starts getting wealthier and consuming more and more.

[www.nigeriaagrofood.com](http://www.nigeriaagrofood.com)



# Litchi

## January/February 2016

Marketing of Madagascan litchis proved more difficult at the beginning of the year. Unlike in previous campaigns when the fruits sold along the same lines as during the end-of-year holidays, January saw a considerable fall in distribution sector purchaser interest in this product, manifesting consumer indifference. External markets (outside of France) gradually closed, whereas the fruit quality was still deemed satisfactory. In the second and third weeks of January, the European market received Madagascan litchis shipped in sea containers, which marked the end of the shipments. The accumulation of volumes impaired transactions, which dwindled as time went on. At the end of the month, a slight upturn in interest was seen from the distribution sector, coinciding with Chinese New Year. The attractive prices favoured the launch of multiple promotions. Yet this was just a blip, and sales slowed again thereafter. In the second half of February, the campaign came to a slow end, accompanied by a constant fall in prices. In addition, quality deteriorated gradually, requiring sorting of the fruit and clearance sales. Meanwhile, the South African sea-freight export campaign got into full swing. The fruit from this source encountered the same sales difficulties as Madagascan produce. However, its greater freshness and better sizing resulted in higher sale prices. South Africa finished its campaign in the second half

of February, with some batches of the Red McLean variety.

The air-freight campaign continued in January. In the first half of the month, the French market received the final batches from Reunion, with prices fairly

stable depending on the presentation type (destalked, on-stem or trussed). At the same time, South Africa shipped limited quantities of trussed Red McLean variety litchis, at prices remaining stable. South African shipments wound down in late January.

## ■ Other fruits: juice and purée prices in Europe in December 2015.

	Type	Price (USD/t)	Source	Comments
Acerola	ss frozen, 6-8°Brix	1 150-1 200 cfr Rotterdam	Brazil	Market still well supplied and balanced.
	Frozen concentrate, 20-22°Brix, clear	3 000-3 100 fob Santos		
Passion fruit	Frozen concentrate, 52°Brix	7 500-8 200 cfr Netherlands	Ecuador	Prices up since practically no more stocks available from Ecuador or Peru. The Ecuadorian harvest in August was actually much leaner than predicted. The next major harvest will be at the beginning of Q2 2016, but it could be affected by El Niño.
Guava	Concentrated purée, 19°Brix, pink	1 150-1 250 cfr Netherlands	South Africa	Demand and supply balanced. However, the Indian harvest forecast was revised downward, especially for white. No more pink stocks from South Africa, and no further availability expected until Q2 2016.
	Concentrated purée, 20°Brix, white	1 150-1 250 cfr Rotterdam	India	
Pomegranate	Clarified aseptic concentrate, 65°Brix	2 700-3 200 EUR/t fca Rotterdam	Turkey Iran	The pomegranate is currently very popular due to its health benefits. Demand is on the rise, for fresh and juice. Juice prices strengthened in 2015. NFC production apparently booming.

Note: cfr: cost and freight / fob: free on board / fca: free carrier / Source: MNS-ITC Geneva

## LITCHI - INCOMING SHIPMENTS (estimates in tonnes)

Weeks 2016	1	2	3	4
<b>Air-freight</b>				
Reunion	50	20	5	-
South Africa	40	40	20	20
<b>Sea-freight</b>				
Madagascar	-	1 300	1 300	-
South Africa	100	220	220	200

## LITCHI - INCOMING SHIPMENTS (estimates in tonnes)

Weeks 2016	5	6	7	8
<b>Air-freight</b>				
South Africa	5	-	-	-
<b>Sea-freight</b>				
South Africa	170	100	-	-

## LITCHI - IMPORT PRICE ON THE FRENCH MARKET

Weeks 2016	1	2	3	4
<b>Air-freight (euro/kg)</b>				
Reunion stm	6.00-12.00	6.00-9.00		
South Africa stm	7.50-8.00	7.00	6.50-7.00	6.50-7.00
<b>Sea-freight (euro/kg)</b>				
Madagascar	2.00-2.10	1.90-2.00	1.70-2.00	1.50-2.00
South Africa	3.00-4.00	2.50-4.00	2.25-3.00	2.00-3.00

s: sulphur treated / stm: on the stem

## LITCHI - IMPORT PRICE ON THE FRENCH MARKET

Weeks 2016	5	6	7	8
<b>Sea-freight (euro/kg)</b>				
Madagascar	1.50-1.80	1.50-1.70	1.50	1.20-1.50
South Africa	2.00-3.00	2.00-2.50	2.25-2.75	1.50-2.50



## Sea freight

### January/February 2016

A glance at the monthly TCE averages for January and February suggests that it has been a less-than-satisfactory start to the year for reefer industry stakeholders. The average for the first two months of the year is the lowest since 2012, when bunker prices were more than double current values. While there's no denying the figures, it is also true that they tell only a fragment of the story. Although it shouldn't be discounted entirely, the behaviour of the charter market is no longer a reliable indicator of the state of the wider reefer business and, as such, its relevance is diminished.

While it may be important to those owners and operators whose units are not employed in liner business, period charters and/or seasonal COAs, the reduction in size of the reefer fleet coupled with the vessel preferences of individual charterers means the monthly TCE average is more or less exempted from most rate negotiations for such employment contracts.

This is because the major reefer operators, in fleet capacity terms, have taken the view that utilization is more important than the potential gain from spot charters, which is very much the container line, or carrier philosophy. In the new structure, for as long as the reefer continues to add value to the charterer and/or cargo interest, there is a place for the mode on the high seas. Whether the mode can justify its existence to its respective owners depends therefore on whether it can compete on cost with its nemesis.

As long as the cost of bunkers is low, the reefer offers a fast, dedicated and direct 'taxi' alternative to the cumbersome boxship 'bus' service. However as soon as the price of oil rises to those levels last

seen in 2012, the least fuel-efficient reefers will become competitively obsolete overnight.

The year started much as it is likely to go on. There was a significant imbalance between the supply of capacity and demand from charterers and cargo interests, which is only likely to worsen as more container ships and reefer equipment is dumped onto the market.

Despite adverse weather conditions prior to the table grape harvest in Central Chile, volume throughput remained strong as shippers strove to capitalize on the strength of US market and its currency. The load factor was high enough throughout the period to command more tonnage. Indeed, more units would have been deployed or chartered in had it not been for berth restrictions.

The other headline was more about what didn't happen. Had there been a similar squid catch in the South Atlantic this year as there was in 2014 and 2015, the reefer fleet would have been stretched to the limit of its capacity. However we are back to the start of the cyclical trough: two good years followed by five below average. How charterers will manage demand for specialized reefer capacity when the cycle returns to abundance in 2021 does not bear consideration!

### ■ Sea-freight: negative outlook in 2016 according to Moody's.

The rating agency has revised its forecast downward for the sea-freight sector. The blame lies with the distinct slowdown of the Chinese economy, which in particular has brought a steep slowdown in the country's imports since late 2014. In parallel, the problem of transport overcapacity will intensify in 2016, with more than 50 mega container ships due to be commissioned. Hence Moody's predicts supply exceeding demand by 2 % for the current year. Furthermore, the fall in oil price will not have as marked a positive effect as in 2015 for shipping companies, since it has been passed onto the 2016 rates.

Source: Reefer Trends



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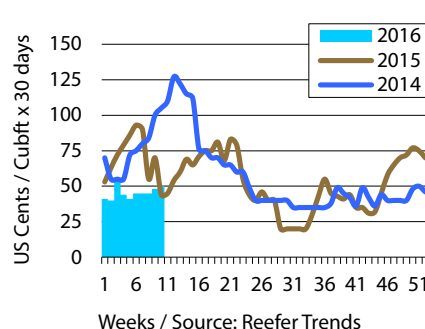
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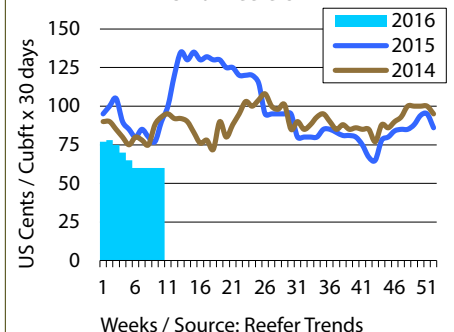
### MONTHLY SPOT AVERAGE

USD cents/cubic foot x 30 days	Large reefers	Small reefers
Jan./Feb. 2016	44	65
Jan./Feb. 2015	72	83
Jan./Feb. 2014	74	81

### Large reefers



### Small reefers



## Southern Hemisphere apples and pears 2015 campaign review

Still no let-up

The last campaign brought little in the way of suspense: production did not reach excesses for either the apple (less than 5 million tonnes) or the pear (less than 1.3 million tonnes), because of climate conditions which affected the fruit potential and sizing. Hence exports were down once more, because of a late start to the season and export windows narrowed by local produce.





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## Another fall in exports

Without really dropping into shortfall, the apple and pear production potentials certainly did not hit the heights in 2015. In fact levels kept to around the 3-year average. The harvest was affected by the heat in South Africa. The same was true for Argentina, whose production was also impaired by hail and then strikes, which resulted in losses on the trees and another salary increase. Its export campaign was also affected by currency parity, since while the exchange rate was more favourable for most sources, devaluation was distinctly smaller for Argentina than for its South American neighbours. So exports were down by 11 % for the apple and by 8 % for the pear, across all the Southern Hemisphere producer countries.

This fall was again in large part attributable to the European market, which was focused on its own produce. Its apple and pear imports from the Southern Hemisphere have been increasingly late. Apple imports fell again by 13 % in 2015 from the previous year, to below 400 000 t, i.e. approximately half the figure from 2007. Argentina and Chile registered the steepest decrease, dropping 60 % (14 000 t) and 32 % (111 000 t) respectively. New Zealand also registered a slight fall of 9 % (117 000 t), while South Africa and Brazil maintained their market shares better, with 105 000 t and 35 000 t respectively.

Similarly, Community pear imports from the Southern Hemisphere fell by 11 % in 2015 from the previous year, verging on the 200 000-t mark. The downturn was especially marked for Argentina (58 600 t, i.e. - 34 %), after import volumes peaking at more than 100 000 t in 2013, and at 160 000 t in 2009. Market share was also eroded for South Africa, which again registered a slight downturn (96 000 t, i.e. - 9 %), whereas Chile held up, managing to return to its 2009 level (55 600 t, i.e. + 20 %).

## A very tight two-month European slot for apples

The beginning of the Southern Hemisphere apples season is coming increasingly late. The first Gala batches appeared toward mid-March (Brazil and South Africa), though the unappealing prices (1.30-1.40 euro/kg into Northern Europe, 18 kg) and the substantial remaining stock of European bicolors prevented a flying start to the campaign. Volumes from Chile and then New Zealand topped up the supply during April, but the contribution from most of the Southern Hemisphere sources remained anecdotal. Only the small Brazilian Galas (1.00-1.10 euro/kg, size 100-135, Northern Europe, 18 kg) registered steadier sales. Until late April,



Apple — Southern Hemisphere — Exports									
tonnes	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Total, of which</b>	<b>1 701 244</b>	<b>1 714 256</b>	<b>1 545 386</b>	<b>1 599 775</b>	<b>1 674 862</b>	<b>1 608 248</b>	<b>1 842 328</b>	<b>1 649 897</b>	<b>1 535 852</b>
<b>Chile</b>	765 541	761 624	674 922	748 266	794 000	758 000	832 000	808 000	612 000
<b>South Africa</b>	280 007	331 105	227 567	311 517	318 966	358 456	434 663	339 321	413 096
<b>New Zealand</b>	293 000	272 000	298 320	258 982	298 317	284 451	324 685	310 668	330 513
<b>Argentina</b>	248 616	235 269	247 568	180 000	212 903	133 233	163 500	145 600	118 116
<b>Brazil</b>	112 073	112 250	95 000	99 000	48 665	72 096	85 467	44 294	60 112

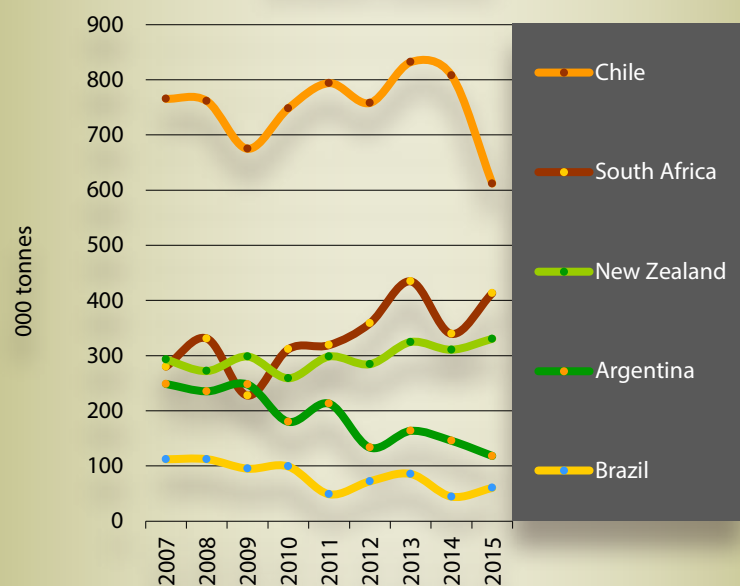
Source: Wapa

sales still primarily involved the wholesale circuit, although some chains started to show an interest towards the end of the month.

Rates then slipped slightly in Northern Europe (Chile: 1.25-1.35 euro/kg; New Zealand: 1.40-1.60 euro/kg), though wholesale sales were only steady from mid-May, remaining very poor in the in-store segment. The purchasing groups started listing this produce really only in late May/early June. So rates continued to adjust (Chile: 1.10-1.35 euro/kg, 18 kg; New Zealand: 1.40-1.50 euro/kg, 17.5 kg), and Gala sales gradually increased to become steady in the course of June. The Pink Lady campaign began around mid-May, with the first batches from South Africa, and then expanded with Chile's campaign starting in early June. As activity remained insufficient in June, the rates for this variety fell steeply, going from 1.90-2.00 euros/kg at the beginning of the month to 1.50-1.60 euro/kg at the end of the month with the anticipated growth in incoming shipments. Demand was practically non-existent for Granny and especially red varieties, until the fall in European availability in July. From that point, sales of stored volumes of Southern Hemisphere Gala, and most of all Granny, picked up, and the Pink Lady market got moving.

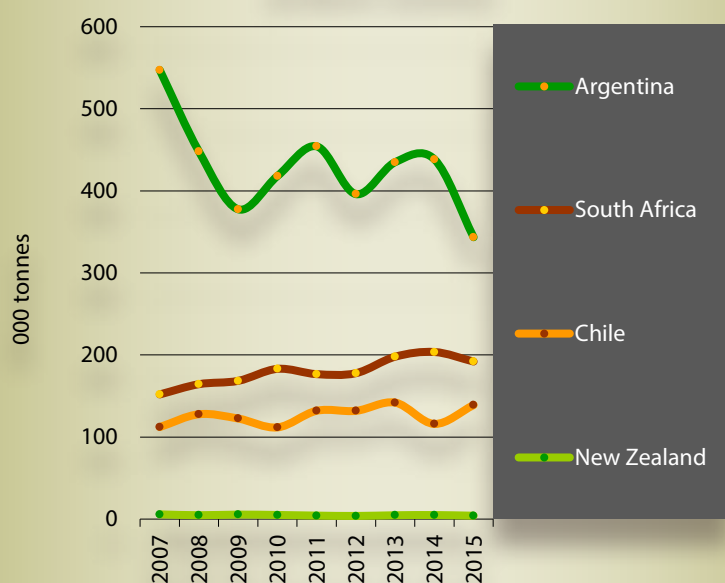


**Apple - Exports from main Southern Hemisphere producer countries**



Source: WAPA / Processed by Infofruit

### Pear - Exports from the main Southern Hemisphere producer countries



Source: WAPA / Processed by Infofruit



### A late start and a highly staggered campaign for pears

The pear campaign was late in getting started. The first incoming shipments of South African Bon Chrétien were received early from week 4, though the supply remained limited since rains delayed South African harvests. Prices hit fairly high levels at the beginning of the season (1.10 euro/kg, 80-90 fruits, 12.5 kg, into Northern Europe) and remained strong throughout February in the absence of Argentinean Williams, delayed by production strikes. The market only really established itself from week 8. It remained fluid in March, with demand primarily focused on South Africa, and only switching late to Argentinean Williams, in April. The other varieties also really struggled to find their place - this applied to Beurré Hardy, Beurré Bosc and even Comice - with a rapidly widening price range, especially since the competition made itself more keenly felt with the arrival of spring fruits, and then with the first summer fruits in mid-May. While the fall in Williams volumes helped rates of this variety to remain stable, sales were very disappointing for the other pears, including Abate and Comice. Rates remained under pressure throughout June, with the most advanced batches needing to be sold off. At this point, prices reached historically low levels, especially for Comice. The Williams campaign ended in mid-June, but as the market was quiet in July, the Comice campaign extended into July, and the Abate campaign until the end of the month ■

Cécilia Céleyrette, consultant  
c.celeyrette@infofruit.fr

### Pear — Southern Hemisphere — Exports

tonnes	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Argentina</b>	547 351	447 959	377 589	418 116	454 271	396 058	434 996	438 500	343 500
<b>South Africa</b>	151 951	164 445	168 506	183 111	176 673	177 848	197 912	203 660	192 043
<b>Chile</b>	112 163	127 808	122 578	111 763	132 041	131 931	142 000	116 000	139 000
<b>New Zealand</b>	5 777	4 770	5 512	5 076	4 297	3 868	4 719	4 972	4 166

Source: Wapa



## Southern Hemisphere apples and pears Prospects for 2016

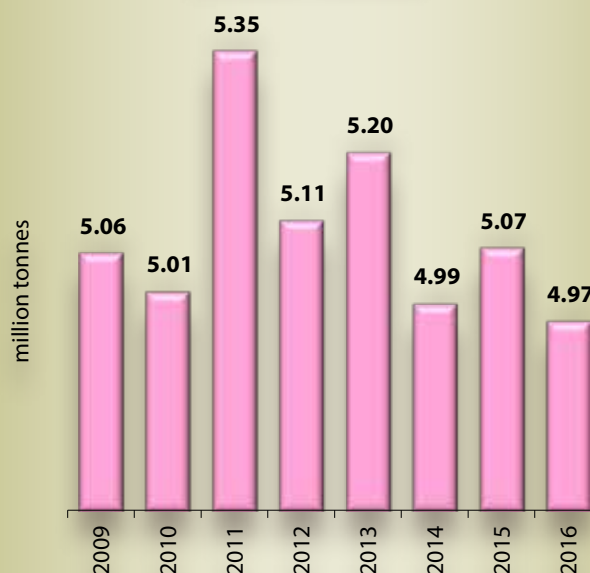
No major changes expected,  
but still some hope



## Falling surface areas in Argentina and Brazil

The previous campaigns appear to have left their marks on production. The high tensions within the industry, due to the economic conditions, again had particularly damaging effects in Argentina. The strikes resulted in a further increase in labour costs, but were also highly detrimental to the harvest, causing production losses. So pear exports fell considerably by 335 000-360 000 t, depending on the sources, i.e. approximately - 23 % on 2014, especially to the European market (- 34 %), as well as toward most other outlets (- 25 %). However, export levels to the US market were good (47 000 t, i.e. + 22 %). Apple exports also dipped steeply in 2015 (120 000 t, i.e. - 18 %), except again to the North American market (13 800 t, i.e. + 50 %). Europe-bound exports fell to just 14 000 t (110 000 t in 2007). And there are no expectations of better results this year, since although the Argentinean peso has been slightly devalued, the fall has been less significant than for other South American countries.

**Apple - Production for main Southern Hemisphere producer countries\***



Sources: WAPA, USDA / Processed by INFOFRUIT  
\* South Africa, Argentina, Brazil, Chile, New Zealand



In 2016, the apple and pear harvest should not much exceed the previous one, and so should be well below previous years. This is down to a number of small producers abandoning the trade, and to poor climate conditions in spring (rain, hail, low temperatures) which generated in certain sectors physical losses, but also economic losses due to the impact of hail and diseases. In addition, the flowering came late, resulting in smaller fruit sizing.

In Brazil, surface areas have been on the wane since 2014 (- 3 % per year), whether in Santa Catarina or Rio Grande do Sul. So apple production should at best be stable this year, since the climate conditions (mild winter, late frosts, hail and excessive humidity in spring) have affected the harvest level and sizing, which should be average. Nonetheless, exports from this source climbed in 2015 (+ 36 %), after the steep downturn registered in 2014, though without regaining previous levels (60 000 t as opposed to 85 000 t in 2013 and 112 000 t in 2008). Shipments to the European Community rose by just 17 %. However, exporters hope this year to consolidate the export level regained in 2015, or even claw back more of the export market share (65 000 t, or even 70 000 t).



## Apple market share for Chile to win back

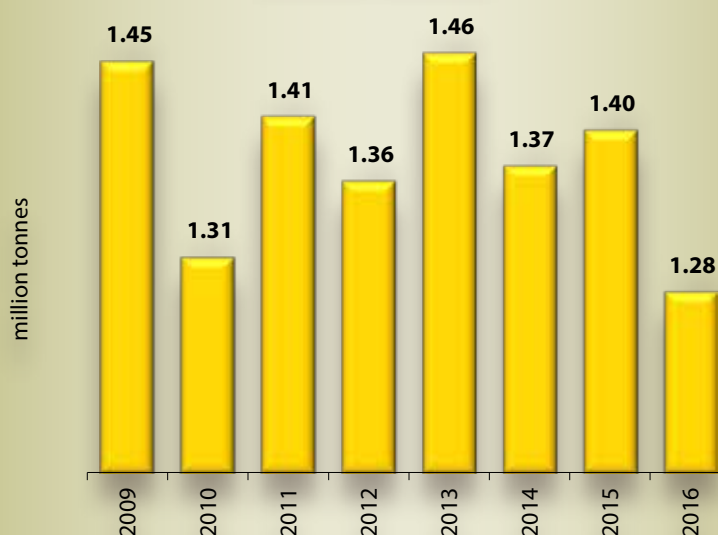
2015 was a very disappointing year for the Chilean apple industry, with the exports slowdown taking them to their lowest level since 2009 (628 300 t, i.e. 22 % below the 3-year average). Conversely, pear shipment levels were very good (143 500 t, i.e. + 9 % on the 3-year average), back to their 2013 level, after a particularly difficult 2014 campaign.

The fall in apple shipments was particularly marked to Europe (111 600 t of imports in 2015, i.e. - 32 %) and the United States (78 700 t, i.e. - 34 %). Thus more volumes were sent to Russia (26 000 t, i.e. + 72 %). European pear imports, however, practically returned to their peak level (+ 35 % on 2014 and + 20 % on the three-year average), which had not been the case since 2009. Similarly, US imports regained their previous level (+ 21 % on 2014).

Surface areas fell slightly for the apple (36 200 ha, i.e. - 1 % on 2015), but increased further for the pear (8 300 ha, i.e. + 15 %), with Abate making particular progress. The production potential should be fairly similar to last year, or even slightly down because of the somewhat chaotic climate conditions brought by El Niño, although the phenomenon has been less intense than feared. The spring cold spell affected pollination and fruit-setting, while the heat reduced the sizing. Exporters are hoping for an increase in their apple and pear shipments of at least 10 % on 2015, or even up to 15 %. However, the poor sizing and uncertainty over the coloration could limit the exportable potential to the European and North American markets.



**Pear - Production for main Southern Hemisphere producer countries\***



Sources: WAPA, USDA / Processed by INFOFRUIT  
\* South Africa, Argentina, Brazil, Chile, New Zealand



## Early season somewhat abbreviated in South Africa

Although the planting tempo has now slowed down (high marketing costs and market uncertainty), South African surface areas are continuing to grow, reaching nearly 12 000 ha for the pear and 23 150 ha for the apple (+ 1 to 2 % per year). Growth is still significant for Packhams (+ 4 %), the number one variety in the cultivation stock, as well as for Abate Fetel and Forelle, though now at a slower tempo (+ 1 %). The ageing Williams stock is continuing to fall (- 1 %), although noteworthy progress has been made by the Early Bon Chrétien supply. Production was slightly below expectations in South Africa last year, given the storms at the beginning of the season which delayed the campaign and reduced the potential. Purchasers also exhibited differing degrees of prudence, which limited marketing. Hence pear exports ended up falling slightly (- 6 % on 2014), in spite of the outlet diversification over the past few years. Shipments to the Community market fell the furthest (90 000 t, i.e. - 9 %), while Asia-bound shipments were also hard hit (27 100 t, i.e. - 8 %). The Middle East (31 500 t, i.e. + 14 %) and Africa (7 800 t, i.e. + 37 %) however continued to absorb increasing volumes. Conversely, after a lacklustre 2014, apple exports rose slightly (+ 3 %), thanks to better tonnages to the European market, though without regaining their 2013 level (150 000 t), still less their 2003 level (180 000 t).

The initial figures for 2016 indicate a fairly good potential for this source, of around 398 000 t (+ 3 % on 2015) for the pear and 880 000 t for the apple (+ 2 %). Yet this will probably be revised downward due to the persistent drought which is affecting sizing and has already caused fruit droppage, reducing the exportable potential in the earliest sectors, especially early-season varieties. The parity of the rand however is allowing operators to anticipate a better export level in 2016, with a 3 to 4 % gain according to initial estimates.



## Modernised cultivation stock in New Zealand, to meet Asian demand

New Zealand production surface areas are stable, though planting activity, especially of modern varieties aimed at the Asian markets, is on the rise. This overhaul of the cultivation stock has been made possible by several lucrative campaigns, on the strength of increased yields and the fall of the NZ dollar. Hence the range of Pacific apples is continuing to develop, and new varieties such as Rockit are also taking their place in the mix. As regards the pear, the cultivation stock is also increasing for certain varieties such as Corella and Josephine. This growth is in response to demand from Asia, which now represents 40 % of the outlets for this source, and enabled a 6 % increase from 2014 in total apple exports, although shipments fell to the European market (- 9 %) and the US market (- 21 %). Exporters are even reckoning on a further 4 % increase in shipments for 2016, since there should be a good production level, similar to last year, thanks to climate conditions favourable for flowering which have offset the negative alternate bearing effect. Conversely, in 2015 pear exports, which are primarily aimed at the historical markets, fell by 24 % to Europe and by 53 % to the United States. However, exporters are hoping to be able to reverse the trend somewhat in 2016, to achieve 4 600 t.

## Campaign definitely off to another late start in Europe

Although exporters are hoping to increase their export volumes, the European market could be unreceptive again this year. Like last campaign, the Community market could open fairly late, because while the 2015 European campaign got off to an auspicious start with few leftovers from the previous one, in bicolored varieties at least, it fell behind schedule in the autumn. Although large-scale exports started quicker than last year, sales were well below expectations during the first half of 2015, including during the apple fairs which usually invigorate the market. The blame probably lies with the mild weather, under-sized fruit and the events which marked the end of 2015.

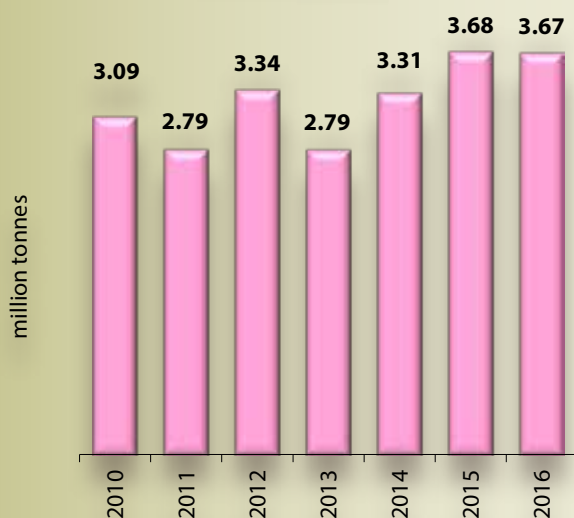
Nonetheless, the Gala campaign should finish at a similar time to last year, although with large-scale export shipments stopping from early March, the leftover stocks could take more time to sell off on the internal market alone (205 000 t as at 1 February 2016, i.e. + 7 % on 2015). Furthermore, volumes of other bicolors such as Braeburn, Fuji or Jonagold/Jonagored will still be present, with a stock level similar to or less than last year on a Europe-wide level. Yet this stock will weigh very heavily at a local level, especially in France: + 30 % for Braeburn, + 2 % for Pink Lady, + 31 % for Fuji and + 114 % for Jonagold. Similarly, sales are

slow for Granny due to the poor sizing. The European stock is up 7 %, and the French stock by 32 %.

The situation is fairly similar for the pear, though for somewhat different reasons. The campaign fell behind schedule from the start, since the Guyot season finished late in September, for lack of export outlets, particularly to Russia with the embargo and given the poor sizing. All this delayed the market launch of Williams, and then of the autumn/winter varieties (Comice, Conference or Abate), especially since there were also still leftovers of small varieties such as Alexandrine or Beurré Hardy. As with the apple, the market then followed a very routine pattern for the end of 2015, making it difficult to maintain price levels at certain times, such as during school holidays. So January was a mediocre month. The competition intensified among small sizes, and shelf-life concerns started to appear for late-season varieties such as Comice, because of the high sugar level this year, which drove rates downward in Northern Europe. However, the market seemed to settling down somewhat in February, in spite of the school holidays, with the fall in small size availability, especially for Abate and Conference. However, the stock level was still very high on 1 February 2016 (617 000 t, i.e. + 17 % on 2015), whether for Abate (127 000 t, i.e. + 16 %) or Conference (411 000 t, i.e. + 11 %), while the Comice season was winding down ■

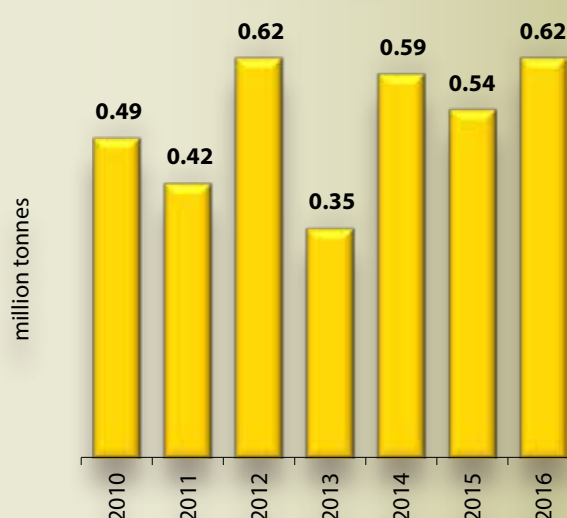
**Cécilia Céleyrette**, consultant  
c.celeyrette@infofruit.fr

**Apple - Stock in main EU countries at 1st February**



Sources: WAPA, professional organisations  
Processed by INFOFRUIT

**Pear - Stock in main EU countries at 1st February**



Sources: WAPA, professional organisations  
Processed by INFOFRUIT

## Producer country file

# Tunisian dates

by Carolina Dawson



An integral part of oasis zones for millennia, date cultivation is now booming in Tunisia. In a fragile political and economic context, agriculture is considered an essential part of revitalising the national economy, and the date, a high added-value product dedicated to the export sector, is at the centre of this strategy. The particularly prized Deglet Nour variety currently accounts for the majority of production, and makes Tunisia the main supplier to the European market. In a context of rising production and increasing market constraints in terms of competitiveness, the search for outlets is a crucial factor for Tunisia, the world number four date exporter.





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- *Importer, distributor*
- *Deglet Nour, Kouat Alligh and Medjool dates*
- *All kind of packaging*
- *Tunisia, Algeria, Israel*



## Date — Tunisia

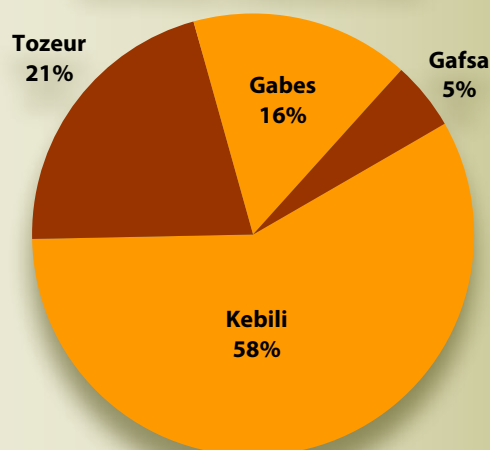
### Production location and dynamics

Standing out against the backdrop of a vast desert environment, date palms can be cultivated only in the oasis zones in southern Tunisia. Hence it was estimated that the 40 976 ha registered in 2013 were mainly packed into the oases of the zones around Kébili (58 % of surface areas), Tozeur (20 %), Gabès (16 %) and Gafsa (5 %), while approximately 60 to 65 % of the current cultivation area comprises new plantations developed between 2007 and 2011.

Under the 11th National Agricultural Development Plan (2007-2011), the creation of an irrigated area of 20 000 ha, as well as private sector investment incentives, led to a big surge in date palm planting for the export sector from 2007, which helped the cultivation area expand considerably. On the back of a continuous increase since the 1980s, production has boomed since 2007, with the harvest exceeding 220 000 tonnes in 2015, according to professional sources.

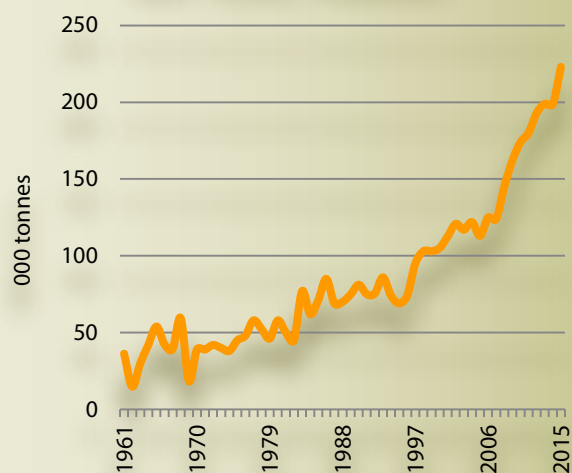
However the growth of production should be less explosive in the coming years, due to increasing constraints of resources availability (water and land) and input costs. On top of these we can add certain structural problems such as the fall in public investment in the agricultural sector, and national and regional political instability. Hence the 12th Agricultural Development Plan (2011-2014) focused mainly on the need to improve the productivity of existing plantations and obtaining better value for production, rather than continuing the race to expand surface areas. It was in this context of securing production value that two PGIs were set up in 2012 for Deglet Nour dates in Kébili and Tozeur. Similarly, organic date production is on the rise, with export quantities of around 5 000 tonnes per year, in excess of those of the common varieties.

**Date - Tunisia**  
Distribution of planted areas



Source: Tunisian authorities

**Date - Tunisia - Production**



Sources: FAO, professional sources



© Guy Bréhinier

## Date — Tunisia

### Varieties

Deglet Nour or “finger of light”, which is the main export variety, represents more than 75 % of the country’s production. It is known for its translucent fair colour and good preservability in cold storage, enabling it to be sold year-round. The dates are sold in the form of natural branched dates, or loose, after being dried, glucose-coated and then packed.

Other traditional varieties, or common dates, are also cultivated: Allig, Khouat Allig, Kenta, Bistr, Rochdi, Kentichi. However, they are on the way out because of their lower profitability and lower export profile. This trend raises a variety of issues such as conserving genetic heritage and dependence on a single variety, which is problematic in case of sanitary threats.

### Characteristics of common varieties

**Allig:** long, particularly full of flavour, dark mahogany-coloured. Harvested in November.

**Khouat Allig:** similar taste to Allig, thinner and less sweet, moderate water content. 90 % produced in Tozeur.

**Kenta:** light golden colour, early maturing, less sweet, semi-dry texture. Mainly produced in Gabès.



Date — Tunisia  
Harvest calendar by variety

	S	O	N	D
Common dates				
Deglet Nour from Tozeur				
Deglet Nour from Kébili				

### Fruit development and harvest calendar

The production cycle of the date palm, between flowering and harvest, lasts from 8 to 10 months. In March-April, the fruit is green and round. The date attains its final size during the summer, with a yellow colour and smooth skin. The date does not mature until autumn, after exposure to the summer heat. So harvesting runs from the second half of September until December for the Deglet Nour variety, with the peak before Christmas. So-called “fresh” dates are collected mature and can only keep for a few days. So they are refrigerated for up to six months, or can also be frozen, which gives them a greater shelf life. Dates can also be sun-dried on the tree, and then further treated in hot-air ovens in order to reduce their water content from 70 % to 20 %. They are sometimes coated with glucose syrup, in order to extend their shelf life up to one year.



## Date — Tunisia

### Export dynamics

With approximately 88 000 tonnes of exports in 2014 (source: Trademap), Tunisia is the world no. 4 exporter behind Iraq, Iran and Pakistan. However, unlike the other producer countries whose production is primarily aimed at self-consumption, Tunisia exports more than half of its harvest. Its main outlet is the European market, to which it is the number one supplier. France is the main European recipient of Tunisian dates, and also acts as a hub by re-exporting nearly 40 % of its imports to other Community markets.

Total exports are growing steadily, though in 2014 a one-off downturn was observed, due to climate problems which degraded the quality of some of the supply. Exports apparently resumed their growth in the 2015 season.

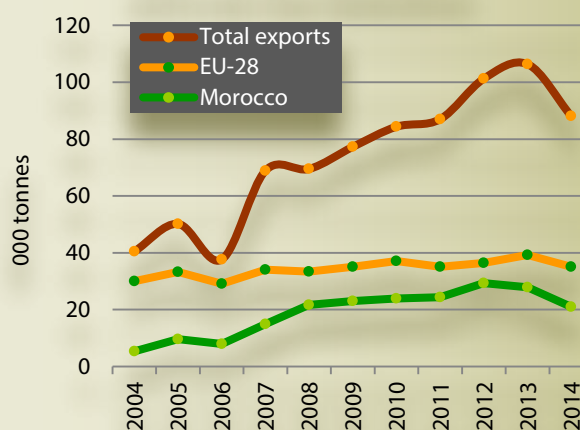
There is tough competition in Europe. The growth of this market is slower than the world supply, and new countries are emerging. This is the case with Algeria which occupies the same slot with the Deglet Nour variety, and which has made big progress in recent years, with comparative advantages in terms of price. Indeed, sea-freight Tunisian Deglet Nour dates cost between 1.50 and 2.00 euros/kilo on the wholesale market in the Netherlands or United Kingdom, for example, whereas the cost of the Algerian equivalent would be less than 1.50 euro/kg.

The same can be said for Morocco, which is the number 2 outlet for Tunisian dates. In recent years, Tunisia has heavily stepped up its exports to this country. However, the Tunisian date is starting to undergo competition from booming local produce, promoted by the "Maroc Vert" plan.

Hence new recipient markets are being sought for this booming Tunisian production. Although the quantities are still modest, attempts at outlet diversification since 2007 seem to be on the right track, particularly to the United States, Russia and Malaysia.

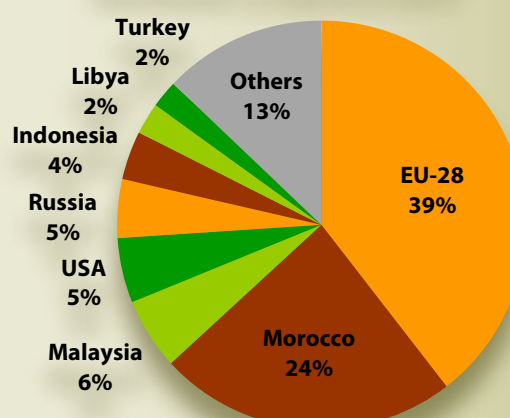


**Date - Tunisia - Total exports and to two main destinations**



Sources: Trademap, Eurostat

**Date - Tunisia  
Distribution of exports in 2014**



Sources: Trademap, Eurostat

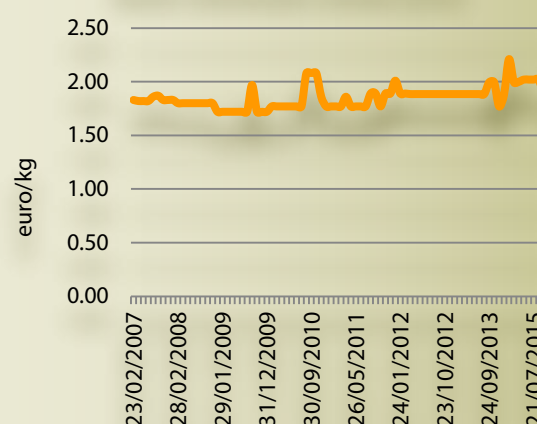
## Date — Tunisia

### Importance of the sector

Whereas Tunisian horticultural production is primarily aimed at self-consumption, only citrus, tomatoes and dates are dedicated mainly for export. In terms of national importance, dates were the second most valuable agricultural export in 2014, after olive oil and ahead of fishery products, and the most valuable in the fruit and vegetables category. Approximately 60 000 farmers are reportedly involved in growing this crop, which accounts for 5 % of national agricultural production and 16 % of the country's agricultural and agri-business production revenue. The industry comprises a host of independent exporters (sixty or so registered).

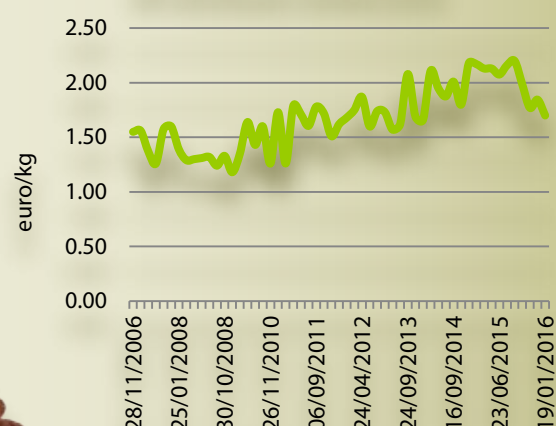


**Sea-freight Tunisian dates  
Dutch wholesale market price**



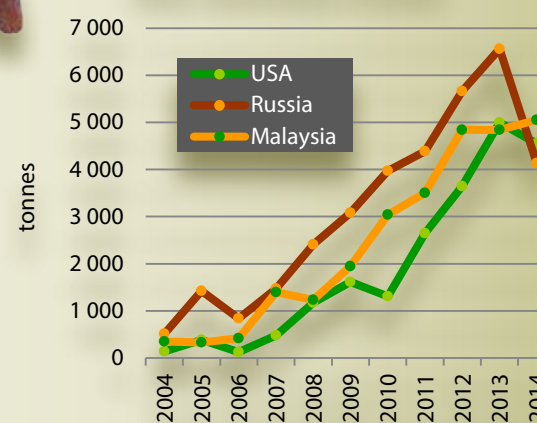
Source: ITC

**Sea-freight Tunisian dates  
UK wholesale market price**



Source: ITC

**Date - Tunisia  
Other destination markets**

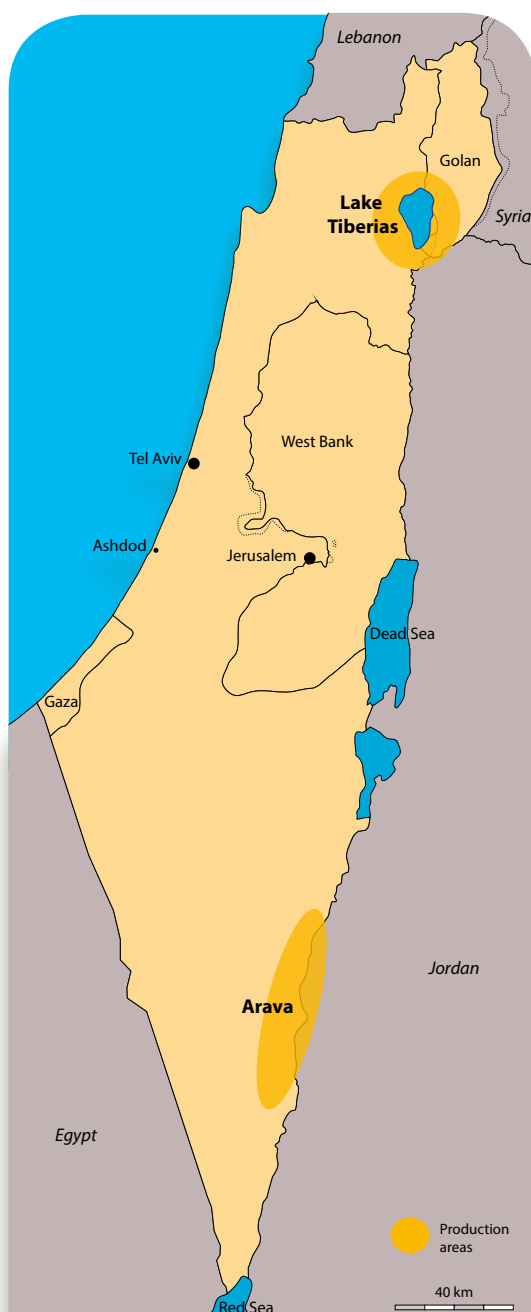


Source: Trademap

## Producer country file

### Israeli dates

by Carolina Dawson



Deeply rooted in Israeli history and culture, the date has only been cultivated for export since the early 2000s, thanks to new technologies providing agricultural water. Despite high production costs the advent of a high added-value variety, Medjoul, has enabled Israel to expand its production and establish itself as the main date supplier to Europe in the top-end segment, ahead of the United States. Medjoul exports are continuing to make strong progress in an increasingly competitive context.





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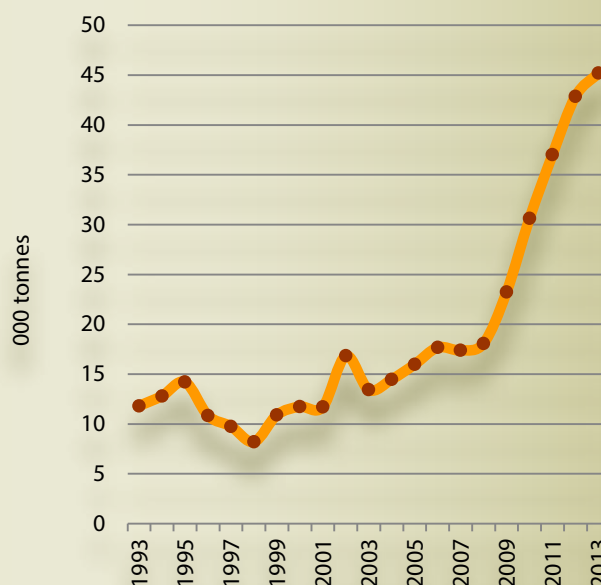
## Date — Israel

### Production location and dynamics

The date palm “soaks its feet while its crown roasts in the sky”. The palm plantations extend all the way along the Jordan Valley, from the Red Sea in the south of the country, past Arava, and up via the Dead Sea zone as far as the Sea of Galilee (Lake Tiberias) in the north. This earns the date industry its nickname “the industry of the three seas”.

In view of the climate conditions of these desert zones, where extreme heat prevails and where water is lacking, all orchards must be irrigated. New desalination technologies, but above all water recycling technologies, have enabled this crop to expand since the turn of the millennium, in particular in the Arava zone, a region prized for its high-quality produce (coloration, size) and for its political stability. The palm tree has established itself as a favoured crop due to its good salinity tolerance and its high returns, which cover the cost of the water.

Date - Israel - Evolution of production



Source: FAOSTAT



Medjoul variety



Chaïna variety

Hence this technical breakthrough, as well as growing demand for a particularly prized variety, have helped date production, long stuck between 10 000 and 20 000 t, to make massive strides forward in Israel since 2008. It is estimated that production growth in recent years has been 10 % per annum. Today, production has reportedly exceeded 40 000 t (across all varieties), with a surface area of more than 5 400 ha. So new orchards have appeared throughout the country, in unexploited desert zones or by converting land used for less profitable horticultural crops, such as the pepper. In most cases, the main production facilities are collective (kibbutzes or moshavs).



## Date — Israel

### Varieties and harvest calendars

Originating from Morocco, Medjoul (or Medjool) only arrived in Israel from California in the 1970s. Today, the “queen of dates” makes up approximately 80 % of Israeli production, and is highly prized on both the export and local markets. The current growth in production involves this variety exclusively. Hence more than 200 ha have reportedly been planted in the past two years, and 100 new producers have been registered. Medjoul is a soft and sweet date, and also large in size, weighing in at between 20 and 30 grams; whereas other dates range between 6 and 11 grams. The harvest starts in late July-early August and finishes in October-November. It is frozen at between 0° and -2°C at the beginning of the season, and then at -18°C during the production peak, to ensure year-round availability.

This variety is commercially attractive due to its high profitability: its import price varies between 4 000 and 8 000 euros/tonne, depending on the size and quality, and can be up to ten times greater than for other varieties.

Production is topped up by other varieties such as Bahri (natural fresh date, yellow in colour, available from August to October), Deglet Nour and, to a lesser degree, the varieties Hiani, Zahidi, Halwi, Amari and Deri.



### Outlets

Israeli consumption is reportedly stable or even slightly on the rise, in line with demographic growth. The date is very much an integral part of local culture, and particularly prized during Jewish holidays, especially Rosh Hashana (September-October), Tu B'Shvat (January-February) and Passover (March-April). Approximately 2 000 tonnes are also earmarked for the local processing industry to produce date paste or syrup.

Hence 14 000 tonnes, i.e. more than half of production, is intended for export, nearly two-thirds of which goes to Europe, followed by the United States and the Far East. Volumes to all markets are on the rise. Despite its geographic and trade proximity, Russia remains a minor outlet for Israeli dates, in view of their high price.

In 2014, more than 9 400 t of Israeli dates were imported into Europe, which represents 10 % of the Community market supply. Israel is the main Medjoul supplier to the European market, ahead of the United States which accounted for just 500 tonnes in 2014. The main destination for Israeli dates is the United Kingdom, followed by France, Spain and the Netherlands.

It is thanks to a Medjoul promotion campaign in 2012, funded by the Ministry of Agriculture and Israeli producers, that date consumption has seen strong growth in the United Kingdom. Hence Israeli date imports rose from 500 tonnes to in excess of 2 000 tonnes per year, making this country the number three supplier to the United Kingdom behind Pakistan and Iran. With an average import price of more than 5 000 euros/tonne, Israeli dates are 2nd in terms of value behind those of the United States and well ahead of those of Iran or Pakistan, which obtain import prices of no more than 1 000 euros/tonne.

France is the number two consumer and re-exporter country of Medjoul. The Netherlands acts as a hub, re-distributing Israeli dates to neighbouring countries.



## Date — Israel

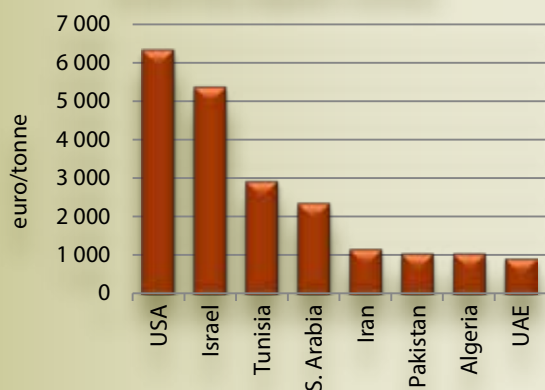
### Prospects

Exports of Israeli Medjoul should continue to rise, given the new plantations entering production, export profitability and the success of this top-end variety, demand for which is continuing to grow. In addition, there is still land available and new water recycling plants under construction should provide irrigation for additional surface areas.

However, the high production costs, mainly due to irrigation, mean that the competitiveness of this crop remains crucial. In addition, competition, very limited for the moment, could soon increase. Enticed by the variety's commercial boom, other producer countries are starting to take an interest. This is the case for Morocco, the historical origin of Medjoul, which, as part of the "Maroc Vert" plan, has been extensively developing date cultivation aimed at the export sector, and is seeking to return to the Community market in the top-end segment.

On the outlet side, the European market is developing though moderately, with Israel taking only very partial advantage of the strong potential of the ethnic market, given the Israeli-Palestinian political problems. Other markets such as the United States should continue to rise, though growth is limited by highly demanding specifications, aimed at protecting local produce. Hence great importance is attached to diversification markets such as India, Australia and Turkey, which have exhibited highly positive growth in recent years.

**Date - United Kingdom - Import value in 2015 by supplier country**

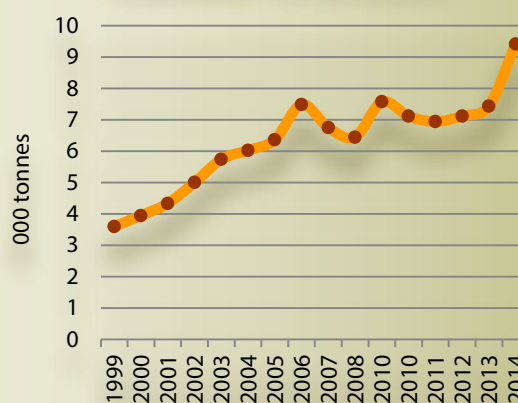


Source : EUROSTAT



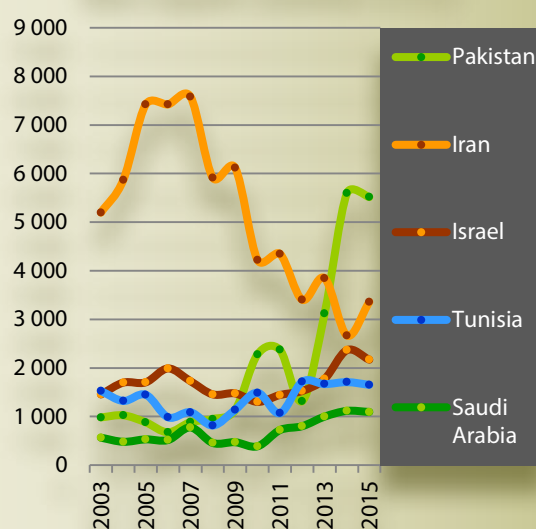
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**Israeli dates - EU-28 imports**



Source: EUROSTAT

**Date - United Kingdom  
Main supplier countries (tonnes)**



Source: EUROSTAT



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**Session 5:** Processes, multi-criteria assessment of performances, and contextual factors driving stakeholder strategies (at farm, landscape or higher levels)

**Abstract submission deadline: 29 February 2016**

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A report by  
Pierre Gerbaud

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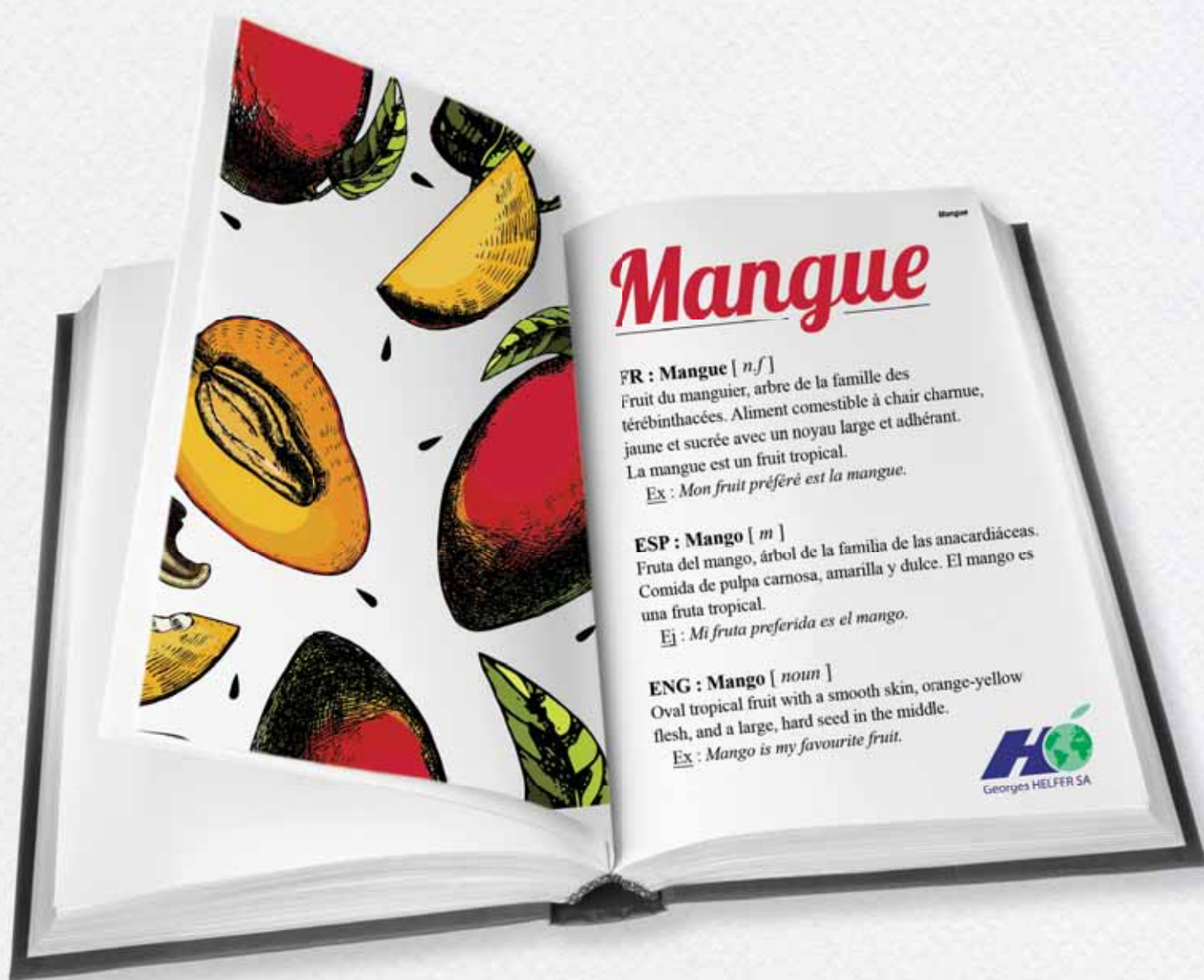




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## European mango market

An expanding market,  
though subject to phytosanitary constraints

The mango marketing campaign had a fairly satisfactory 2015, going by the increase in import volumes and the price levels charged. True, the supply level, although on the up, proved difficult at times with a particular source behind schedule, another source's campaign ending early or overlapping volumes from two major supplier countries. Nonetheless, at no point did mangoes disappear from supermarket shelves. Sales prices too, besides some fairly short-lived crises, were rather high and on the rise.







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## Recovery in the United States

Mango consumption in the United States took an upturn in 2015, after a cyclical downturn in 2014 apparently due to the fall in production from its main supplier, Mexico, which was hit by disastrous climate conditions. This source recovered its traditional footing. While other countries reduced their shipments to the United States, such as Peru with a considerable downturn of 11 000 t, or Guatemala (- 5 000 t), these failures were abundantly offset by the increase in exports from Brazil (+ 10 000 t), Ecuador (+ 4 000 t) and more modestly Haiti, the Philippines and secondary sources each rising by around a thousand tonnes.

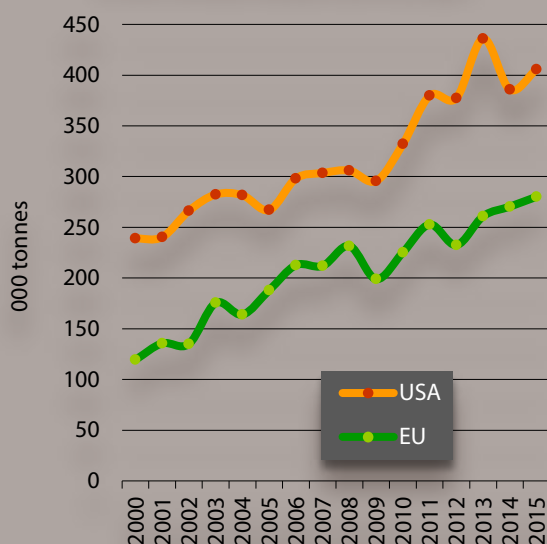
Consumption in the United States is based on the large Latin American population, who are familiar with the product and are regular purchasers. Yet this hardened group of consumers does not explain the scale of the volumes imported and distributed. The product enjoys a communication campaign which is aimed right across the spectrum. Promotional funds are being harnessed for communication via the mass media; but there are also more targeted actions based on sporting events, in schools, etc. A rapid web search makes it possible to appreciate the scale of the actions undertaken by professionals to boost the mango. This type of operation and organisation is similar to that developed for the avocado, which has supported its consumption boom.

## European market continuing its rise

With 290 000 tonnes of imports (including Spain) in 2015, the European market continued its rise, though at a slower tempo. More divided than the US market in terms of distribution circuits and dietary habits, the European market is increasingly opening up to the mango, with a different segmentation and clear lack of communication. The traditional markets remain the same, and continue to represent the driving force of European mango consumption. The economic context is not particularly favourable to the fruit's progress, and yet imports are on the increase - thus we might imagine that consumption is too. The production vagaries in certain supplier countries at times hit the supply level, but overall the biggest sources increased their market share. Thus Brazil, despite a late start to its Kent winter campaign, increased its shipments by 12 000 t. Hot on its heels, Peru shipped 6 000 t more than in 2014. Côte d'Ivoire, the Dominican Republic and Mali consolidated their market shares by increasing their exports by 2 000 to 2 500 t each. More modestly, Pakistan returned to the market after a big downturn for phytosanitary reasons, with a rise of a thousand or so tonnes, as did Senegal and Mexico. Only Israel and Puerto Rico saw their shipments shrink, by 2 000 and 4 000 t respectively.

In economic terms, 2015 was visibly more profitable. Without factoring in any cost price increases for the merchandise, nor any exchange rate variations, sale prices

**Mango - Evolution of imports  
in the United States and Europe**



Source: national Customs



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were overall higher than the previous year, in a context of bigger volumes on the market. The perhaps uncertain comparison of the average sale price on the French market for sea-freight Kent mangoes across all sources reveals a difference of more than 2.00 euros/box between 2014 and 2015. In 2015, the low rate periods (less than 4.00 euros/box on average) occurred twice in June and December, and lasted only around two weeks. In 2014, these periods also occurred twice, but extended for longer, from three weeks to a month and a half, with average rates of 3.00 euros/box. Conversely, periods of average prices of more than 7.00 euros/box occurred three times in 2015, for more than one month, as opposed to just two short-lived periods in 2014. Besides the fact that this indicator shows the good health of the sector, it illustrates the absorption capacity of a price increase ultimately borne by the consumer. The key elements of this rise are probably a better spread of the product and qualitative improvements, with in particular the growth in ready-to-eat fruits.

## The spectre of the fruit fly

In spite of seizures of mango batches by the phytosanitary services of EU Member States due to fruit fly infestation falling between 2014 and 2015, it remains a worrying qualitative problem. The seizure and destruction of infested batches hit the export companies facing this obstacle hard. They can compromise the profitability of a whole export campaign, especially for modest-sized facilities which lose their gains from one or more shipments (merchandise, packaging, transport cost, but also batch destruction expenses).



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West African producer and exporter countries are particularly concerned by this problem, in view of the number of seizures made. Management actions still seem to be isolated and uncoordinated in this major production zone, despite the implementation of regional programmes which have hitherto not proven highly effective. True, the problem is complex, though the striking decrease in the number of seizures for Côte d'Ivoire would seem to show that a management plan can positively affect this parasite pressure. The reinforced monitoring and the warnings by the European Union to Côte d'Ivoire in late 2014 are a patent example of this. The mobilisation of the country's public authorities, industry operators and the contribution of support bodies has resulted in bringing down the number of seizures in Europe, although the problem has still not been resolved.

The European regulation against the introduction of harmful organisms, listed in the Appendix of Council

Directive 2000/29/EC (and subsequent updates), which include the various non-European fruit flies, appears somewhat hypocritical. It entails the destruction, pure and simple, of contaminated batches. So there is no way out, with liability dumped onto the shipper. Ignorance of the law is indeed no defence!

The US system is completely different, although the prohibitions are of the same nature. The US administration is especially vigilant with regard to harmful organisms such as the fruit fly as, like its European counterpart, its remit is to protect

**Mango — European Union — Number of seizures due to fruit fly infestation in 2014 and 2015**

Sources	Number of seizures in 2014	Volumes in 2014 (tonnes)	Number of seizures in 2015	Volumes in 2015 (tonnes)
Brazil	4	99 314	2	111 511
Burkina Faso	3	3 064	15	4 358
Côte d'Ivoire	62	20 473	10	20 919
Mali	23	3 833	11	3 833
Peru	8	71 975	4	71 975
Dominican Rep.	27	11 154	6	11 154
Senegal	11	10 328	14	10 328
<b>Total all sources</b>	<b>254</b>	<b>270 421</b>	<b>122</b>	<b>280 156</b>

Source: European Customs

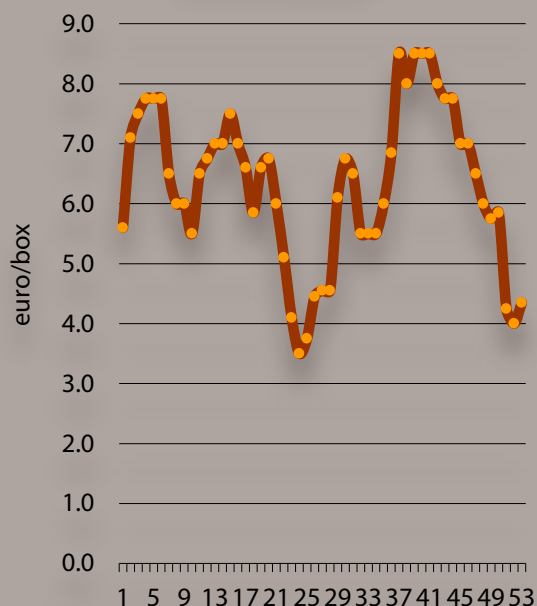


national fruit crops. Yet the US regulation goes further than the one in force in Europe. It actually requires that imported mangoes have undergone heat treatment to ensure the absence of parasites in the product. To this end, every packing station in the supplier countries must accept the presence of a USDA representative responsible for checking the implementation of the required treatment. Consequently, mango batches are then imported into the US without any controls. The only question raised by this system, beyond the requisite heavy investment, lies in the intrinsic quality of the product. Does the heat treatment applied not cause damage during the physiological development of the fruit? The rise in volumes imported by the United States seems to deny this, unless US consumers are used to eating fruits which are different in terms of taste properties and structure to those distributed in Europe.

The regulations in force on the different continents are not about to be modified. But comparing them may be a source of inspiration for operators. Perhaps the industry players, especially in Africa, should study more closely and at greater length the most appropriate methods for managing the parasite pressures which are undermining trade flows ■

**Pierre Gerbaud**, consultant  
pierregerbaud@hotmail.com

**Sea-freight Kent mango - France**  
**Average weekly import prices in 2015**  
**from all sources**



Source: Pierre Gerbaud

**Air-freight Kent mango - France**  
**Average weekly import prices in 2015**  
**from all sources**



Source: Pierre Gerbaud





## 2015 mango campaign Source by source review

Developing sources



**How is the mango market going? Quite nicely, thank you. Good news is rare enough in the sluggish current economic context that it is worthy of special emphasis. The continual rise in volumes sold in Europe and North America, and the price levels obtained throughout the year, seem to confirm this. Europe is importing ever more mangoes, with a total for 2015, if we add Spain to the extra-Community sources, of more than 290 000 tonnes. The 300 000-t threshold is within reach. North America is still on the rise with 460 000 t of imports, for a smaller population. So is the European market still attractive for this product, with further growth opportunities?**



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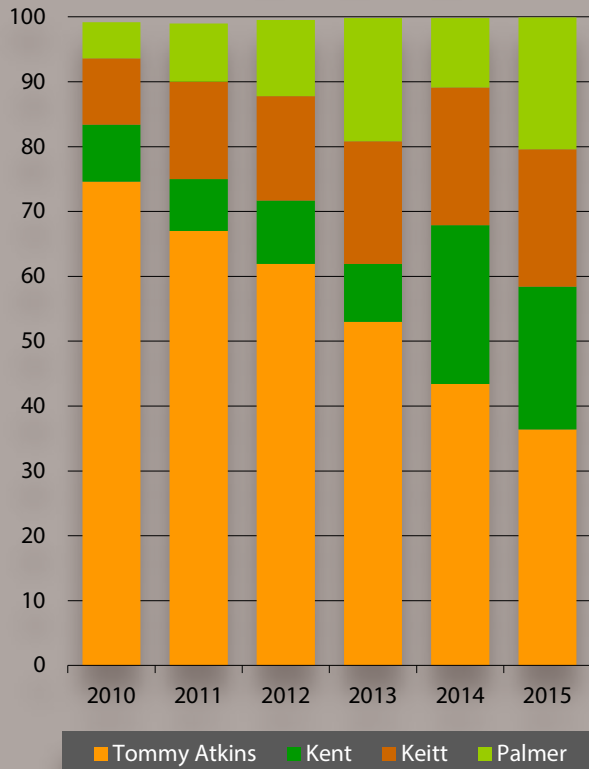


## Brazil

### From strength to strength!

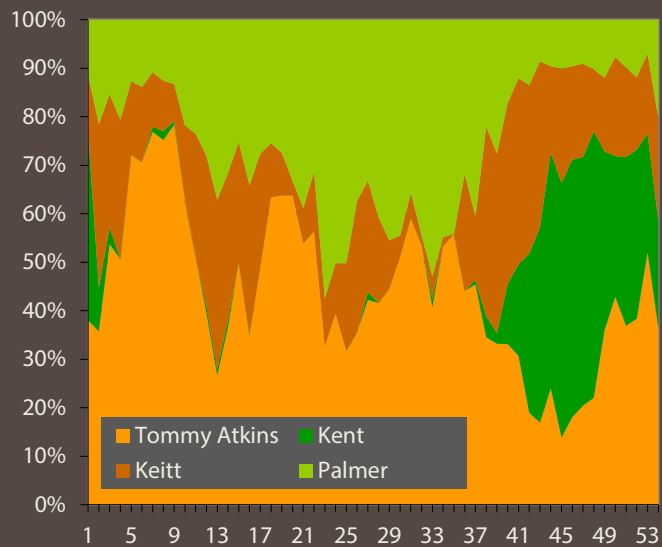
While certain rumours had it that Brazilian production, and consequently its exports to Europe, were on the wane, we cannot help but observe that this is not the case. Quite the contrary, the source is making a big contribution to the general growth in volumes to the European markets. After fluctuating between 85 000 and 95 000 t of exports over recent years, Brazil seems to have shifted up a gear. In 2014, it touched on 100 000 t of exports to the European Union. In 2015, it smashed its record once again, reaching 111 500 t, i.e. more than one third of mangoes sold in Europe. This is a noteworthy record since in parallel it supplied the North American markets with 10 000 t more than the previous years. If we add to this the dynamism of its internal market, which absorbs not only local varieties but also more and more export varieties, we can only assume that the Brazilian sector is in good health.

**Mango - Brazil**  
Evolution of exports by variety (%)



Sources: Brazil, Pierre Gerbaud

**Mango - Brazil - Varietal distribution of exports to Europe in 2015**



Weeks / Sources: Brazil, Pierre Gerbaud

### Varietal diversification

In 2015, Tommy Atkins remained the most common Brazilian export variety. Cultivation methods, productivity, suitability for the pedoclimatic conditions of the country, its good coloration and its good transportability all work in favour of it being exported year-round. Yet its lack of flavour and its somewhat fibrous flesh mean that other varieties are preferred. Hence for the past few years, we have observed a conversion of the Brazilian cultivation stock toward fibreless varieties, which has proceeded rapidly if we look at the past six campaigns. Tommy Atkins, which still represented nearly 75 % of mangoes exported from Brazil to Europe in 2010, made up just 36 % of shipments in 2015. So Brazil's flagship variety seems to have halved during this period.

Conversely, other so-called "fibreless" varieties, marginal in 2010 with a maximum of 10 % of exported volumes, have increased considerably. Kents went from 8.8 % in 2010 to 22.0 % in 2015, Keitts from 10.2 % to 21.2 % and Palmers from 5.6 % to 20.3 %. In other words, "fibreless" varieties now represent nearly two-thirds of Brazilian exports. This varietal conversion has been driven by demand from European purchasers. Shipments to the United States still for the vast majority comprise Tommy Atkins. The heat treatment required by the US sanitary authorities may not be unrelated to this, as the variety can definitely withstand this physiological shock better.

## Price variations in line with supply

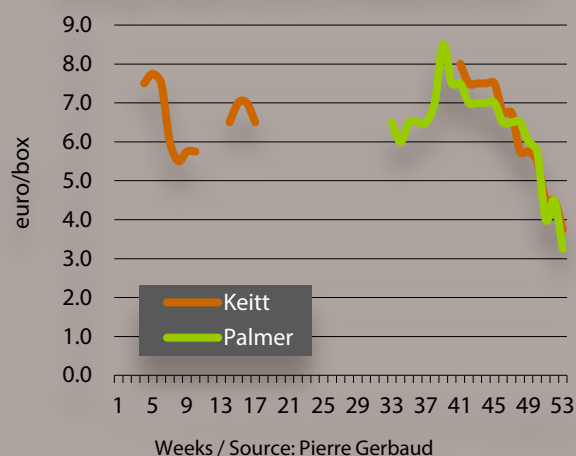
The time of year when exported varieties are at their most diverse corresponds to the biggest flows from September to December, when Tommy Atkins see their lowest level, and shipments of Palmer, Keitt and Kent progress. The latter variety is the most tightly concentrated, in a period between October and early January. The massive arrival of Kent volumes in October influences prices, which generally dip, dragging down those of the other two varieties, which depreciate just as rapidly, often to lower levels. Within a few years, Tommy Atkins has been reduced to the rank of a top-up variety. Nonetheless, it remains an important part of the Brazilian calendar in general, enabling it to maintain a year-round presence on European markets.

While Kent rates collapsed at the end of the year due to the large volumes shipped over a short period and to the early start of the Peruvian campaign, the Tommy Atkins rate was considerably more volatile. Three peaks above 6.00 euros/box punctuated the Brazilian campaign and revealed more or less extended supply interruptions to the European market. The first peak, definitely the most surprising given its improbability, extended from mid-January to mid-February, which was down to the late start by Peru in early 2015. Generally at this time of year, Tommy Atkins prices are at their lowest given the large quantities shipped by Peru. This was not the case in 2015 because of

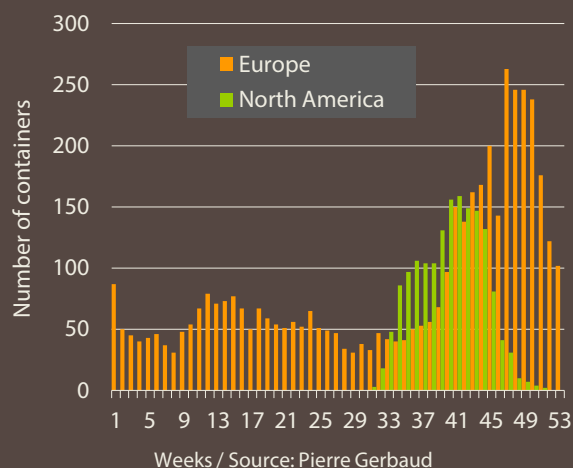


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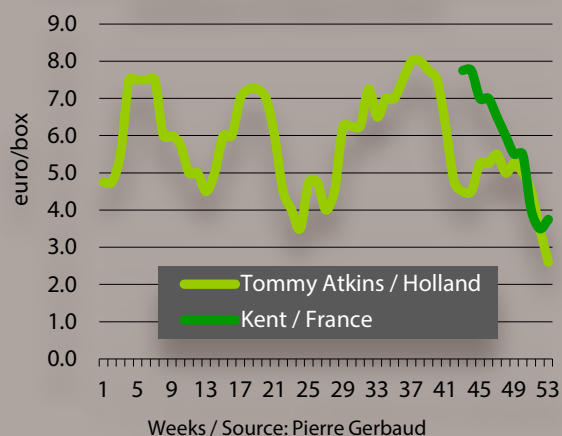
### Sea-freight Brazilian Keitt and Palmer Average import prices in Holland in 2015



### Sea-freight Brazilian mango - Weekly arrivals in Europe and North America in 2015



### Sea-freight Brazilian mango - Average import prices for Tommy Atkins in Holland and Kent in France in 2015

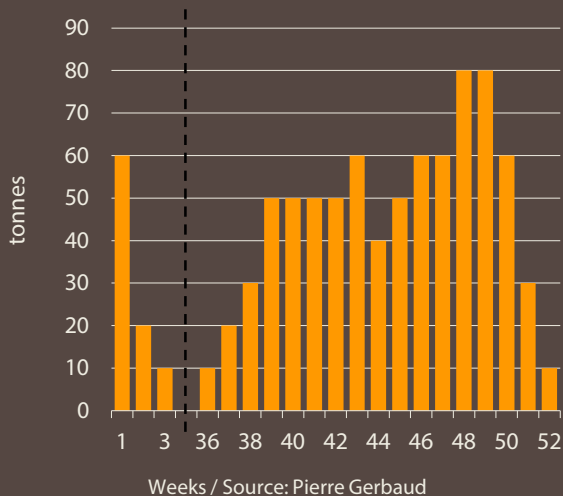


the delay to Peruvian production. The second peak came from mid-April to mid-May, always a tricky period between the end of the Peruvian campaign and the beginning of the West African campaign. The rapid withdrawal of Peru and the late start by Côte d'Ivoire opened up a market window for Brazil. Finally, the third peak from mid-July to mid-October is more difficult to explain, at least for the first half, insofar as shipments from Senegal, Israel and the Dominican Republic were bigger than in previous years until late August. Was consumption more dynamic in this summer period? In September and until mid-October, the European market was under-supplied because of the delay to Brazilian Kent production. The most difficult period for Brazilian mangoes was from late May to late June, when the cumulative incoming shipments, especially from Africa, choked up the European market. Brazilian Tommy Atkins found intense competition from Kent, available in abundance at low prices, whereupon their rates plunged to below 4.00 euros/box for several weeks.

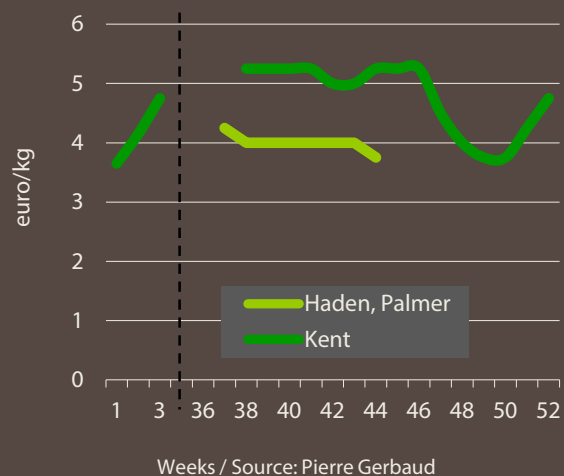
In spite of difficulties in June and December, Brazil enjoyed a positive campaign overall, going by the sale prices obtained by most of the exports to Europe. The rise in tonnages in both Europe and North America consolidated Brazil's lead in the field of the mango. The synergy provided by this country's wide range of fruits and vegetable exports makes a big contribution to its position as an essential source for the European supply.



**Air-freight Brazilian mango  
Weekly arrivals in France in 2015**



**Air-freight Brazilian mango  
Average import prices for Kent  
and other varieties in France in 2015**





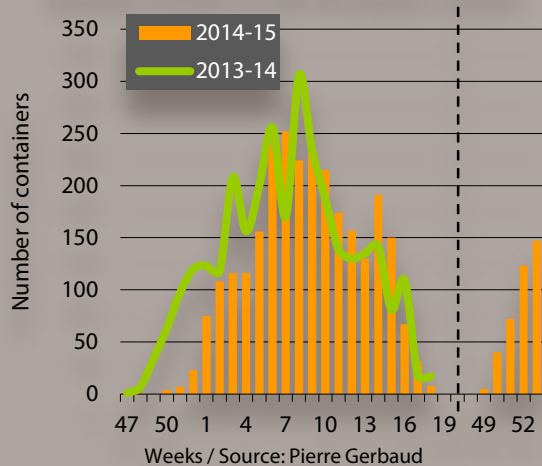
## Peru

### A better campaign in 2015

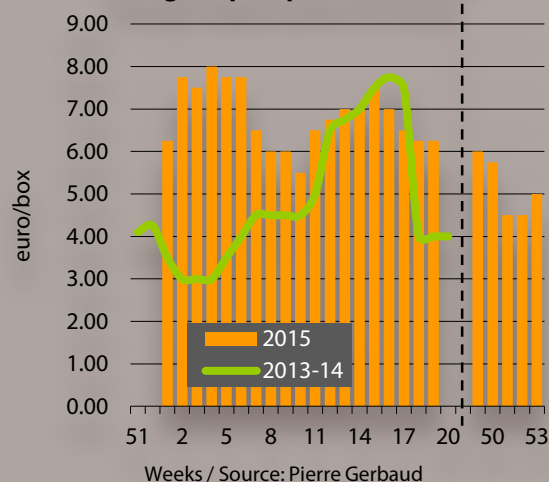
#### Major price variations for sea-freight mangoes

After a difficult 2013-14 campaign, when prices were particularly low during the first half of the season, a busy export period, the Peruvian 2014-15 campaign got off to a more auspicious start. Not that volumes were smaller - quite the contrary, since it exported its largest ever quantities to Europe, with 78 300 t as opposed to 72 000 t in 2014. The calendar and division of volumes aided this more fitting proceedings. The relative lateness of the campaign helped prevent the always disastrous clash with the end

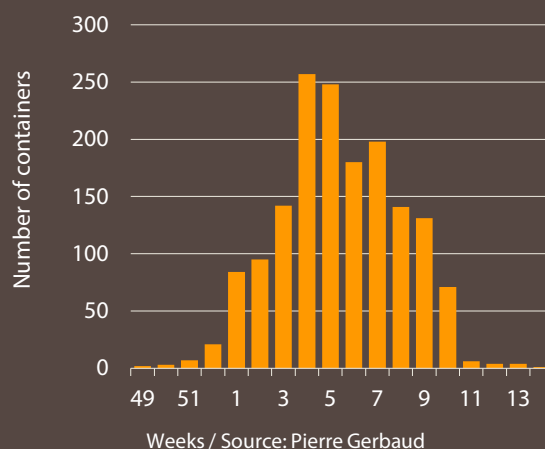
**Sea-freight Peruvian Kent mango**  
Weekly arrivals on the European market



**Sea-freight Peruvian Kent mango**  
Average import price in France



**Sea-freight Peruvian mango - Weekly arrivals in North America in 2014-15**



of the Brazilian season, as had been the case the previous year. The first incoming shipments in the second half of December 2014 were very moderate, and took over from the Brazilian supply as it came to the end of its period. So the handover between the two sources went smoothly, with Peru gradually compensating for the decrease in Brazilian shipments, before replacing them completely. In January-February 2015, Peruvian mango prices peaked, whereas at the same time the previous year they had been in the depths (3.00 euros/box, or even less). They stabilised at between 7.50 and 8.00 euros/box, a level rarely approached at this time of year, while volumes progressed gradually. In the second half of February and early March, the situation was tighter, with the Peruvian shipments peaking at a tempo of 200 to 250 containers per week. Rates dipped but remained satisfactory (between 5.50 and 6.00 euros/box). From the second week of March, the anticipation of a rapidly ending Peruvian campaign and a late start by West Africa caused rates to rally. True, Peruvian shipments decreased by around 150 containers per week, but the market remained decently supplied by Brazil, which made its return with quantities on the rise, especially comprising the less sought-after Tommy Atkins. Peruvian mango rates picked up to high levels of around 7.50 euros/box, until the Easter holidays. They dipped again thereafter until the end of the campaign, in early May, still at strong levels (6.50 euros/box) in spite of lower quality.

At the end of 2015, the new Peruvian export campaign began under less good conditions, repeating to a lesser degree the 2013-14 scenario. Shipments proved to be earlier and progressed rapidly from early December, while Brazilian shipments were still large. The combined volumes from both sources drove rates downward, going from 6.00 euros/box for the first arrivals to 4.50 euros/box from mid-December, a level which would hold up throughout January 2016.

## A more stable air-freight campaign

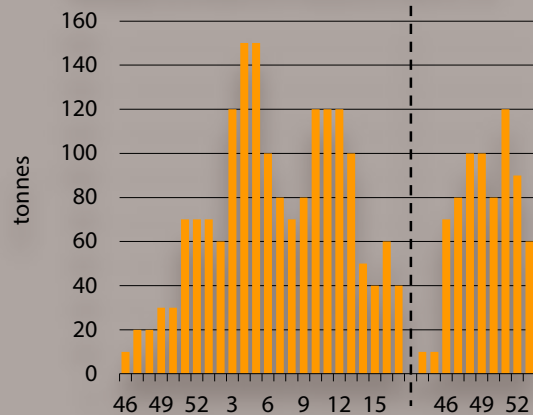
Like the sea-freight campaign, the first Peruvian air-freight mangoes went on the market early from mid-November 2014. Conversely, prices remained fairly high, at between 4.50 and 5.50 euros/kg, fluctuating in line with the volumes received. In December and January, they stabilised at around 4.50 euros/kg, given the overlap of the Peruvian and Brazilian campaigns which resulted in a supply surplus for the demand, which was moderate at this time. Rates strengthened from mid-February to early March, to in excess of 5.00 euros/kg. In March, volumes grew while demand remained stable, leading to fruit storage. The advancing maturity of the fruits required rapid sales, inevitably accompanied by pricing concessions. Just before the Easter holidays, prices picked up considerably due to a stronger demand, while volumes dwindled until the end of the campaign in the second half of April.

The 2015-16 campaign started early at the beginning of November, and rapidly came up against the abundant Brazilian shipments, causing rates of both sources to drop. Unlike sea-freight shipments, whose transport times mean a long inertia on price fluctuations, air-freight shipments are more rapidly adjustable. In mid-December, the drastic reduction in Brazilian shipments opened up the way to Peruvian produce, whose prices picked up in the run-up to the end-of-year holidays, a period generally enjoying more intense demand.

The opening part of the campaign seemingly remains the trickiest point for Peru, which is the number two mango supplier to the European Union. Early starts are particularly unfavourable for it, given the weight of its Brazilian rival during the transition between the two sources. Conversely, the end of the season seems easier, due to the fairly late start to the West African campaign for the past several years. Varietal diversification could perhaps compensate for the relative under-supply in April.

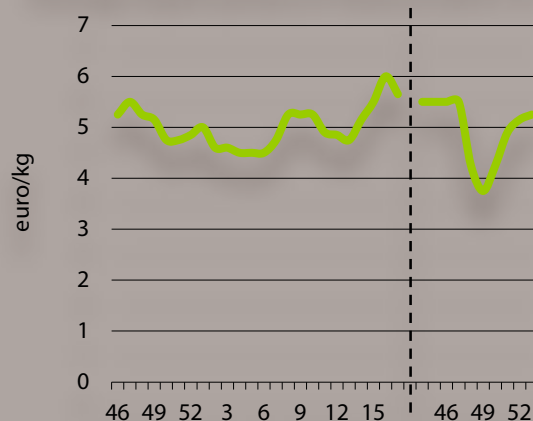


**Air-freight Peruvian mango**  
Weekly arrivals in France in 2014-15



Weeks / Source: Pierre Gerbaud

**Air-freight Peruvian Kent mango**  
Average import prices in France in 2014-15



Weeks / Source: Pierre Gerbaud

## West Africa An irresistible rise

The big rise in West African volumes observed over the past few years continued in 2015. Driven by Côte d'Ivoire, the region's main exporter source, Mali and Burkina Faso this year too hit new export heights. The combined total exports of these three sources amounted to nearly 33 000 t in 2015, after 24 200 t in 2013 and 27 400 t in 2014. True, Côte d'Ivoire remains the driving force for this rise with 23 000 t, but neighbouring countries have also contributed to this boom, with an increase of 1 000 t for Burkina Faso and 2 000 t for Mali. In spite of their landlocked location, these two countries consolidated their place as regular suppliers to the European market.

## Côte d'Ivoire Campaign closely monitored

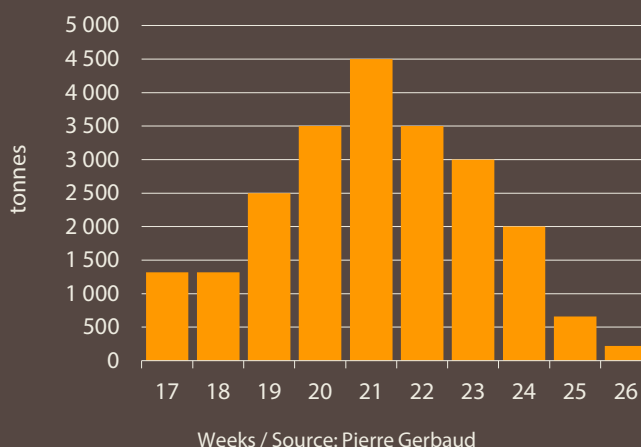
In autumn 2014, in the context of a steep increase in interceptions due to fruit fly damage, the phytosanitary services of the European Commission asked Côte d'Ivoire to set up an effective management programme as a matter of urgency. In spite of the slight delay before the start of the next campaign the Ivorian administration, as well as the industry operators, rallied to provide a solution. Given the gravity of the situation which could eventually have led to an embargo on the source, the Ivorian operators acted to propose and implement a management plan:

- The Ivorian administration, supported by PIP, developed a parasite proliferation management programme, accompanied by field training. This was supplemented by distributing treatment products and spreading equipment to producers. The phytosanitary services were reinforced in order to limit shipments of infested fruits. Travellers were also prohibited from exporting fruit.
- Industry professionals also contributed to this joint effort, by improving their organisation in packing stations. Again, training was dispensed in detecting fruit fly holing.

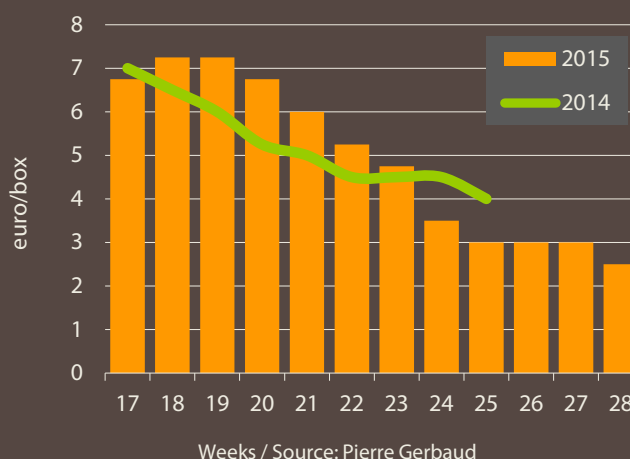
These measures were especially urgently required since at European level inspection methods were being stepped up, especially in the Netherlands and Belgium, where Community audits of the phytosanitary services had revealed glimpses of some failures.

This wake-up call has apparently been beneficial to the Ivorian industry, in view of the drastic reduction in the number of interceptions during the 2015 campaign. Only ten were recorded by the European Commission, as opposed to 64 in 2014. Although the number of interceptions was greater than that tolerated by the European Commission (5), this represents striking progress. This convincing result, as well as the ongoing intensification of fruit fly management, should forestall the risk of heavier sanctions against the biggest West African supplier to the EU.

Sea-freight Ivorian mango  
Weekly arrivals in France in 2015



Sea-freight Ivorian Kent mango  
Average import prices in France



## A dense and concentrated campaign

Unlike in previous years when exports began by agreement between professionals when the fruits were judged physiologically ripe, the Ivorian public authorities this year decided to announce a harvest start date in order to prevent shipments of immature fruits, and in so doing, tarnished the source's image right from the beginning of the campaign. The date set was 20 March, an apparently arbitrary decision, insofar as the majority of the fruits had apparently not reached optimum harvesting point. This date was doubtless chosen to enable the export of Amélie mangoes, theoretically an earlier variety, when the European market would be relatively under-supplied due to the rapid decrease in Peruvian shipments at the end of that source's season. In reality, the Amélie had not matured any further than the Kent. Hence apart from a few containers of Amélie of average quality received in April, the real start to the campaign came in the first ten days of April, resulting in a market launch at the end of the



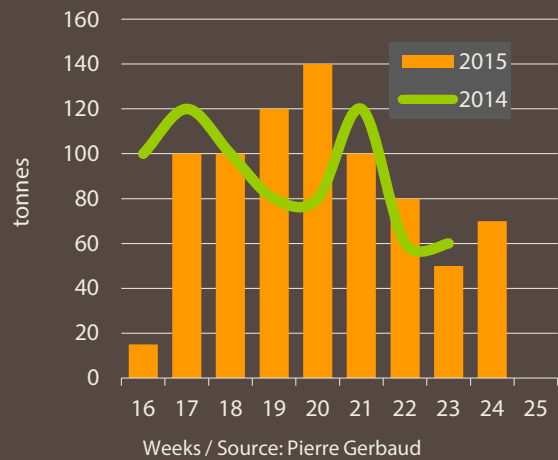
month. Taking advantage of a scarce market supply after the disappearance of Peruvian mangoes, the Ivorian fruit sold fluidly throughout May, at prices which were high but gradually waning, from 7.00 euros/box on average at the beginning of the period to 5.00 euros/box in late May. Due to this massive supply in a short space of time, the fruits received were stored for a relatively long time, resulting in qualitative deterioration. The concentration of the Ivorian campaign is nothing new. Hence 73 % of the total volumes were shipped during May alone in 2015. In spite of a fairly good split between the various European markets, Ivorian mangoes saw their rates dip in mid-June, before stabilising at around 3.00 euros/box. The final batches sold in the first half of July at lower prices. Apart from some Amélie shipments at the beginning of the campaign and Keitt shipments in June, Côte d'Ivoire exported only Kent.

Unlike the previous year, Ivorian fruits sold better in the first part of the campaign, and saw their prices deteriorate steeply in the second half. At that point, the market perhaps reached the limits of its absorption capacity, in the knowledge that tropical fruit consumption decreases at this time of year due to the massive presence of seasonal fruits, often less expensive and more familiar to the public. A concentration of supply and market fluidity are generally contradictory. Côte d'Ivoire always finds itself subject to fairly late starts, and real risks of qualitative deterioration of the fruits in June shipments. So this source remains caught between the physiological maturity of the fruits and the arrival of the rains in the second half of May, often synonymous with fungal development. If the industry has managed to curb the fruit fly infestation problem, which illustrates the importance attached to it, why can it not manage to improve the quality of end-of-campaign mangoes?

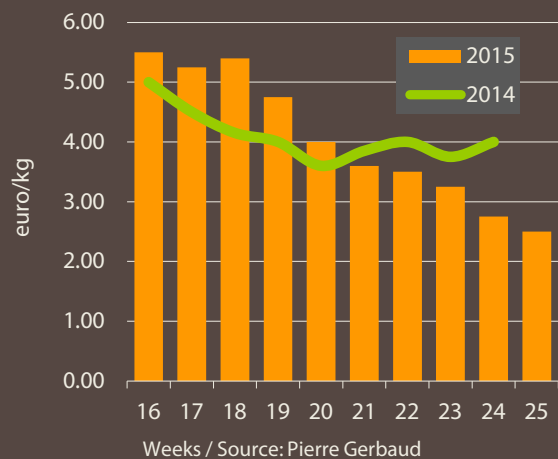
### **Air-freight mango: a contrasting campaign**

The air-freight export campaign followed roughly the same profile as the sea-freight campaign, but with a slight time difference. It extended from mid-April to mid-June, like the previous year. The first incoming shipments were received in week 16, after the Easter holidays. Given the difficult transition between Peru and West Africa, this produce was well valued for the first five weeks of the campaign, then rates dipped from 5.50 to 4.00 euros/kg in the second half of May. The second part of the campaign was characterised by falling prices, down to 2.50 euros/kg at the end of the campaign. As in previous years, Ivorian operators compensated for the late start to sea-freight shipments by large air-freight shipments. Volumes progressed very quickly, at first making up for the lack of fruits on the market, with high prices. The shipments maintained a high tempo, rapidly exceeding the absorption capacities of the market. The accumulation of volumes which were hard-

**Air-freight Ivorian Kent mango  
Weekly arrivals in France**



**Air-freight Ivorian Kent mango  
Average import prices in France**



er to sell, especially because of the arrival of seasonal fruits (early this year due to a mild winter), triggered the cycle of poor sales/storage/quality deterioration (high maturity)/falling rates. Competition from the other West African sources, which were shipping the same produce during the same period, only aggravated this cycle, which ended in clearance sales and disaffection with the source by customers, who switched their purchases to seasonal fruits or mangoes from other sources. We might consider that, out of a thousand or so tonnes shipped, one third sold at prices less than 4.00 euros/kg, a threshold below which economic results are affected.

## Mali

### A new record

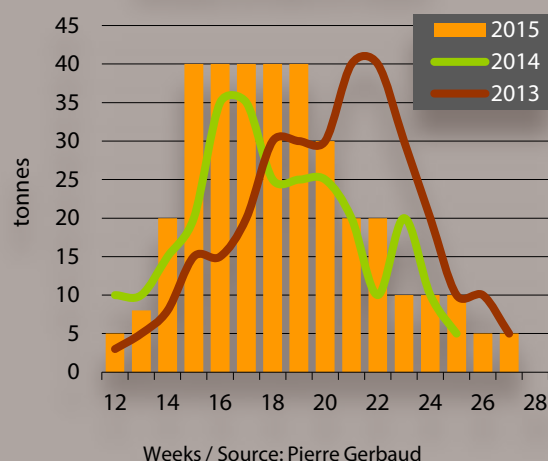
With nearly 6 000 t of exports in 2015, Mali achieved a new high score on the European market. Of this total, an estimated 800 t was air-freight fruit, with more than 5 000 t exported by sea-freight via Abidjan or Dakar.

### A one-dimensional air-freight campaign

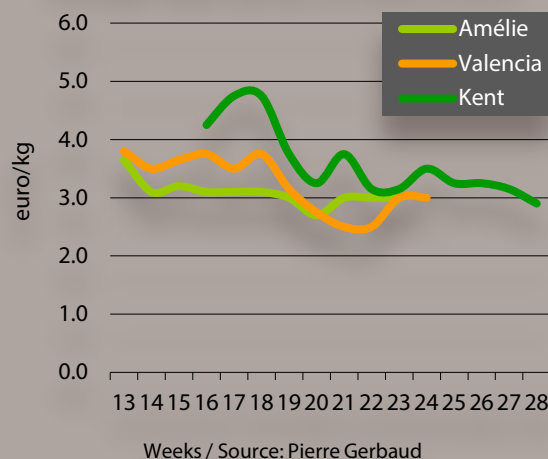
The earlier Malian campaign began in the second half of March, though one week behind 2014. The first shipments comprised Amélie and Valencia. Since Peruvian volumes were moderate at this time of year, these mangoes sold at between 3.50 and 4.00 euros/kg in the run-up to the Easter holidays. Amélie, which supplied mainly ethnic distribution circuits, sold steadily at around 3.00 euros/kg until early June. Valencia traded at a high price at the beginning of the campaign (between 3.50 and 4.00 euros/kg), when the market was receiving small quantities of Kent. Thereafter, their rates dipped with the appearance of Kent, the strong presence of which in mid-May sent Valencia rates plunging below 3.00 euros/kg. The final batches shipped in late May found slightly stronger prices. The Malian Kent campaign started at the same time as the Ivorian campaign, in week 16. This variety rapidly made an impact on the European market. The first shipments sold at between 4.00 and 4.50 euros/kg, but these prices rapidly deteriorated under the effect of the massive presence of Ivorian fruits. They stabilised at between 3.00 and 3.50 euros/kg until the end of the campaign, in early July. The end of Ivorian shipments did not result in rates strengthening, as has sometimes been the case, because of the poorer fruit quality and the more intense and earlier competition from Senegal and Mexico.



**Air-freight Malian mango**  
**Weekly arrivals in France**



**Air-freight Malian mango**  
**Average import prices in France in 2015**

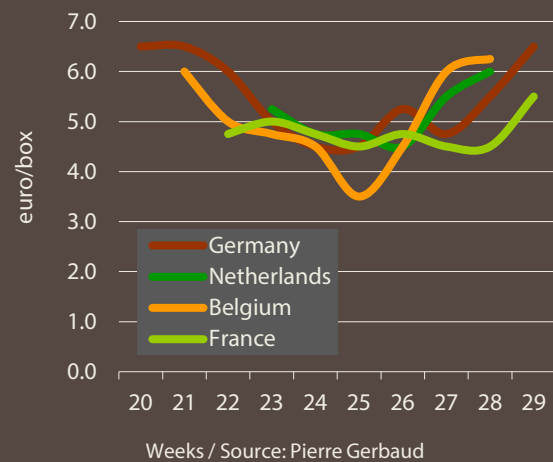


## A more abundant sea-freight campaign

As already underlined above, Malian sea-freight volumes increased considerably this year, with approximately 2 000 t more than the previous year. The Malian campaign extended from the second week of May to mid-July, and saw rates following more or less the same pattern on the various European markets, with an even split. From around 6.00 euros/box for the first shipments, they rapidly dropped to 4.50-5.00 euros/box in late May and June, under the effect of the overall volumes from Mali, but also from Burkina Faso and above all Côte d'Ivoire. It was not until the first half of July that prices strengthened and nearly returned to their starting point, with the end of the Ivorian campaign and Senegalese shipments making little headway. The somewhat late start to Malian production helped provide a more favourable market window. Overall, the comparison of the price curves for 2014 and 2015 reveals slower rates year on year, probably due to the increase in volumes sold. Mali remains a top-up source for Côte d'Ivoire, because of its landlocked location which makes produce transport logistics more complex, and increases forwarding costs. Nonetheless, by working on the more or less early production time, and diversifying its recipient markets, Mali is finding market slots in which its produce is well valued.



**Sea-freight Malian mango**  
Average import prices in Europe in 2015

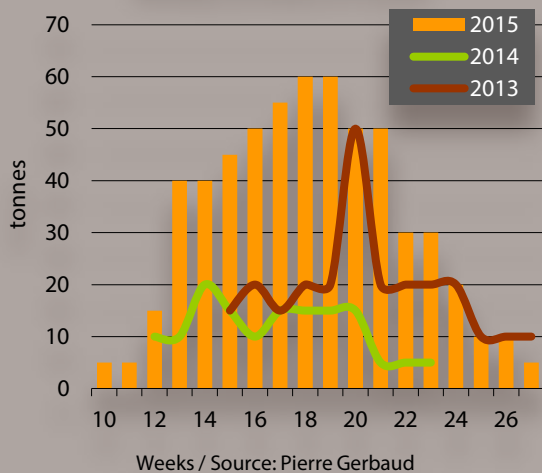


## Burkina Faso A better footing in Europe

### An extended air-freight campaign

Burkina Faso expanded its presence on the European markets during the 2015 campaign, with more than 4 000 t shipped, as opposed to 3 000 t in 2014, but with a similar split: 22 % by air-freight and 78 % by sea-freight. Taking advantage of the good market conditions in Europe, Burkinese exporters took advantage of their slightly early harvest to ship their first volumes from week 10 (in early March), i.e. three weeks before Mali and six before Côte d'Ivoire. True, quantities were limited and primarily comprised Amélie. Yet with high market demand, they sold at more than 3.50 euros/kg for the first month of sale, thereafter falling to around 3.00 euros/kg due to the climbing West African supply and the competition of more sought-after varieties. In week 16 Kent came onto the market, with high prices in the second half of April before the massive influx of Ivorian fruits. From a level of 4.50 euros/kg, the price waned constantly until the end of the campaign, to around 3.00 euros/kg. The campaign was significantly extended until week 29 in 2015, whereas it traditionally finishes three weeks earlier. While certain companies were still shipping standard quality fruit, others managed to secure value for their produce by rigorous selection and a presentation in no way inferior to the more renowned brands from neighbouring sources. Burkinese exporters supplemented their range with some Valencia shipments from mid-April to mid-May. Received at the same time as the Kent, they generally sold fairly badly, with prices falling from 4.00 euros/kg to 2.50 euros/kg.

**Air-freight Burkinese mango**  
Weekly arrivals in France





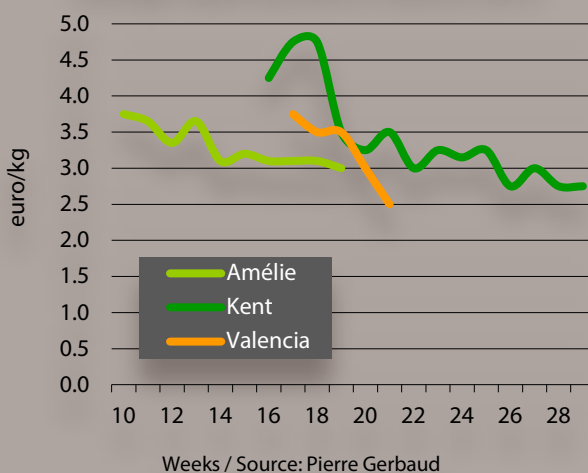
## A rapid sea-freight campaign

Concentrated from mid-May to mid-June, sea-freight shipments from Burkina Faso underwent strong competition from the other West African sources. From 5.00 to 6.00 euros/box in the second half of May, prices dropped to between 4.00 and 4.50 euros/box in the first half of June, under the weight of Ivorian and Malian tonnages which were still available. The logistical handicap on intercontinental exports contributed to curbing shipments to Europe, in spite of volumes progressing in 2015. Hence Burkinese operators switched to other seemingly advantageous commercial opportunities, such as the organic label, but above all the dried mango and regional trade, which has rocketed in recent years.

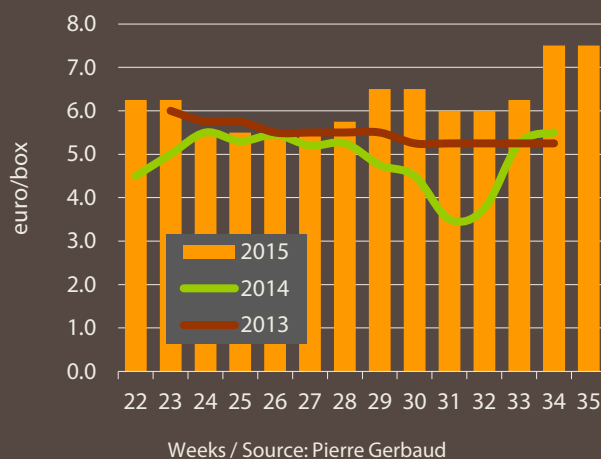
## Dominican Republic Ever higher

The Dominican Republic set a new record in 2015 with its exports increasing by 2 000 t from 2014, for a total of 13 000 t of exports to Europe. The closure, in spring, of US borders to Dominican mangoes because of risks of infestation by the Mediterranean fly (which has since been lifted) could have hinted at a massive switch of tonnages to the European market. Yet this event had little or no influence on the volumes split, as the US traditionally imports only marginal quantities. The increase in Europe-bound volumes arose from a desire to expand on this market. Present from late May to late August, Dominican mangoes reinforced the available supply during the summer period. The Puerto Rican primarily comprised Keitt, mainly aimed at the integrated distribution circuits, on which they provided an alternative to the end-of-campaign mangoes from West Africa, Brazil and Israel. Bit by bit, and in spite of phytosanitary and logistical problems, Dominican mangoes consolidated their market share on the European markets. After selling at around 5.50 euros/box from late May to mid-July during the competition period with African mangoes, they achieved stronger prices from mid-July to mid-August, at between 6.00 and 6.50 euros/box. At the end of the campaign in the second half of August, their rates rose in a context of waning supply, with the end of the Senegalese season and the dip in Israeli shipments. Less changeable than the previous year, Dominican mango rates maintained a higher level throughout the campaign, at between 5.50 and 7.00 euros/box.

**Air-freight Burkinese mango**  
Average import prices in France in 2015



**Sea-freight Dominican mango**  
Average import prices in France



## Senegal Still on the rise

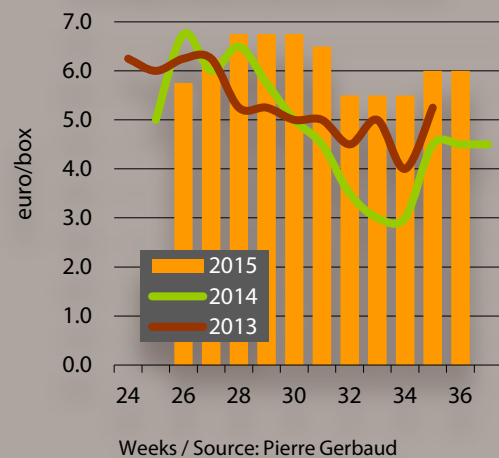
In 2014, Senegal exceeded the threshold of 10 000 t exported to Europe (10 300 t), a historical record for the source. Given the 6 000 to 8 000 t traditionally shipped, this rise could be considered either an exception due to a particularly favourable year, or as the sign of longer-term progress - which seems to be the case. The 11 500 t exported in 2015 confirmed the progress of the Senegalese industry. True, the rise was not as great as between 2013 and 2014, but the trend is there. The quantities shipped have risen constantly for six years, and have actually doubled. Hence Senegal has hoisted itself up into the top ten mango supplier sources for the European market.

In 2015, the Senegalese campaign was a bit earlier, starting in the second week of June, i.e. a week earlier than in 2014. The campaign was kicked off by air-freight shipments, with volumes rapidly rising. Their rates held up at around 3.50-4.00 euros/kg throughout the campaign, which extended until early August. The risks of fungal development at the end of the campaign encouraged operators to suspend their shipments.

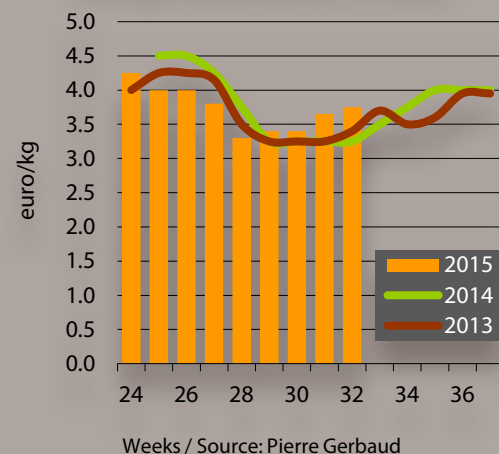
In 2014, air- and sea-freight shipments from Senegal were simultaneous and distinctly early. In 2015, the first containers went onto the market only two weeks after the air-freight shipments. Hence sea-freight mangoes were available from late June. This slightly later arrival was rather beneficial, since stocks from Côte d'Ivoire were still available in June and their deteriorated quality generated a downward price trend. The Senegalese fruit arrived as the market was easing, enabling prices to reach around 6.00 euros/box. The moderation of Kent imports at this period helped the Senegalese mango rates strengthen rapidly, nearing the 7.00 euros/box mark throughout July. In August, they dipped to around 5.50 euros/box on average, a distinctly higher price than at the same period of the previous campaign, when it plunged to 4.00 euros/box, and then 3.00 euros/box. August is a sensitive period for Senegalese produce, with the arrival of rains, which are synonymous with fungal attacks. This resulted in a widening price range, with high prices for fruits of superior quality and low prices for those of deteriorated quality. Between August and September, the absence of Kent led prices to strengthen to around 6.00 euros/box for the last batches available.

The Senegalese campaign was characterised not only by an increase in exported volumes, but also by better economic results than the previous year. Its marketing period remains difficult, hemmed in upstream by large volumes from the end-of-season West Africa sources and the more or less intense competition from Israel. Hence the launch of the Senegalese campaign is often uncertain. The supposed fall in mango consumption during the summer and the risk of quality deterioration in the latter part of the campaign are other obstacles. It seems that the quality improvement seen on the recipient markets is derived from an improved approach by Senegalese operators in terms of fruit selection, harvest method and packing.

**Sea-freight Senegalese mango  
Average import prices in France**



**Air-freight Senegalese mango  
Average import prices in France**

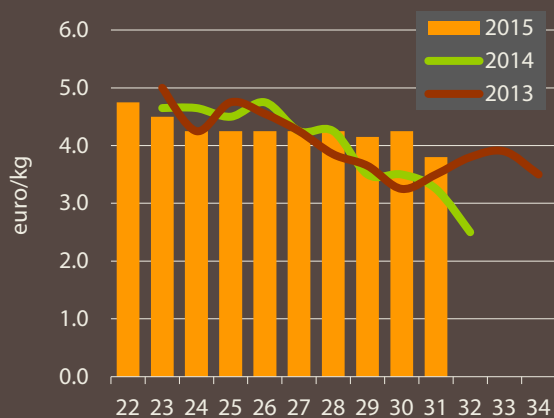


## Mexico

### A slight comeback

The continuous fall in volumes shipped by Mexico to Europe for the last four years looked like a gradual withdrawal by the source. 2015 brought this process to a halt, with just over 3 000 t of shipments, as opposed to barely 2 200 t in 2014. This upturn, as modest as it might be, shows that Mexico is still part of the European supply. True, Mexican exporters are primarily focused on the North American markets, and more particularly the US market, which captures the vast majority of their volumes. Seen from Europe, Mexico is still a Kent supplier in the summer period (June to August). Yet this picture reflects only the tip of the iceberg, since the country has a very wide-ranging campaign in view of its size and its numerous zones suited to mango cultivation.

**Air-freight Mexican Kent mango**  
**Average import prices in France**



Weeks / Source: Pierre Gerbaud



It extends from January to October, across the production regions and the varieties cultivated. The Southern states (Chiapas, Oaxaca, Veracruz), Mid-West states (Guerrero, Michoacán) and North-West states (Nayarit, Sinaloa) account for 85 % of Mexican production. This is partly consumed locally, and in large part exported to the neighbouring United States, from 350 000 to 400 000 t depending on the year. The trade agreements between the two countries of course favour the flow of Mexican produce, which finds substantial outlets there, backed up by well-worn logistical systems. In addition, the Mexican mango industry enjoys in the United States a captive audience, due to the large-scale immigration of Latin American populations, but also to strong communication to promote the product, like the avocado.

Under these conditions, the European market remains of secondary concern to Mexican professionals. Exports are limited to a period from June to August, and are focused on Kent. In 2015, the campaign was particularly early, with the first air-freight batches received from late May. It also halted more rapidly in late July, whereas previously it extended into the second half of August. Sales were steady and prices stable, at between 4.00 and 4.50 euros/kg on average. The quality was deemed uneven, with many batches lacking coloration and exhibiting fungal growth, especially at the end of the campaign. Mexico however remains a source to monitor given its enormous export potential and its varietal range. This giant, though hesitant in Europe, remains alert to any market opportunities which it might be offered.





## Israel

### A slight dip

In 2015 Israel was unable to repeat its record shipments from 2014 (nearly 16 000 t). The less favourable weather conditions restricted its shipments to the European market. Nonetheless, Israel remained an essential supplier during the summer period. With approximately 13 800 t exported in 2015, the source consolidated its position among the leading pack of European market supply sources.

### A short air-freight campaign

The first Israeli air-freight batches were sold in late July, three weeks later than the previous year. The campaign was more concentrated, finishing two weeks earlier. The first varieties shipped were Maya and Aya, rates of which climbed after the first sales before rapidly returning to their initial level after three weeks of the campaign. These small-size varieties enjoy varying popularity on the European market. Israeli exports were then packed into a period from mid-August to mid-September with Kent, the price of which increased from 3.80 to 4.20 euros/kg in the absence of competition, with Senegal and Mexico having finished their campaign. The other varieties provided by Israel (Omer, Shelly) made up for the relative shortfall in air-freight mango, and also enjoyed buoyant prices.

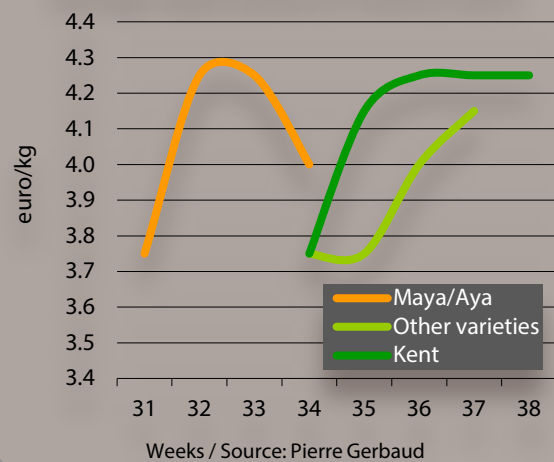
### A good sea-freight campaign

The first sea-freight shipments, in moderate volumes, started from July, though they did not go onto the market until later. They mainly comprised Haden, Omer and Shelly, and sold steadily at between 6.50 and 7.50 euros/box on a moderately supplied market. In late August, these varieties gave way to Kent and Keitt, which kept well in spite of mediocre coloration. Given the lateness of the Brazilian campaign and the declared shortfall in Spanish production, Israeli mangoes met with little competition. Hence they sold at high prices (around 8.00 euros/box) until the end of the campaign, with few fluctuations.

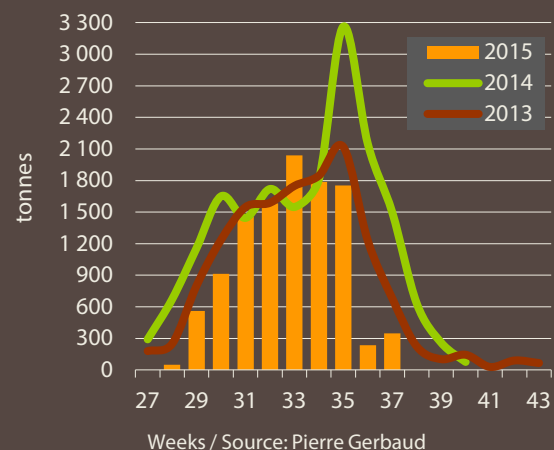


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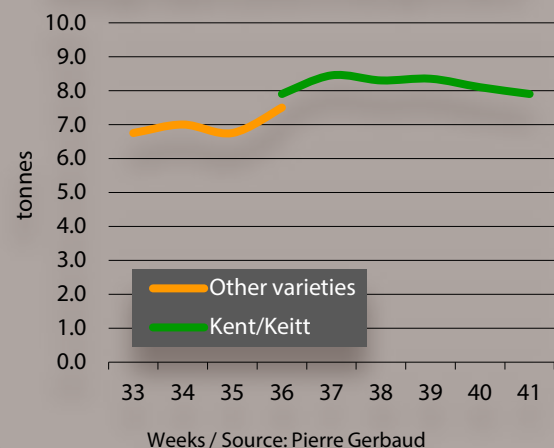
**Air-freight Israeli mango**  
Average import prices in France in 2015



**Sea-freight Israeli mango**  
Weekly arrivals in Europe



**Sea-freight Israeli mango**  
Average import prices in Europe in 2015





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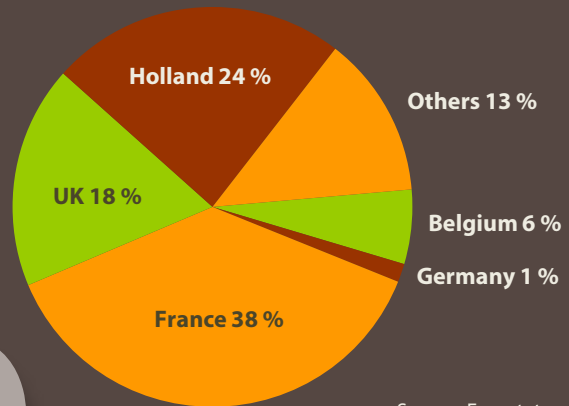
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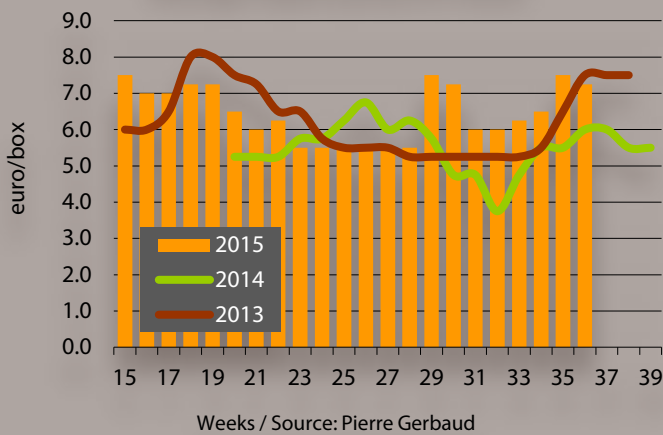


Israel's position as a summer period mango supplier appears difficult, if we consider that consumption of this fruit slows down at this time of year, with the summer holidays and the profusion of seasonal fruits. Yet if we observe, on the one hand, the overall quantities on the market in July and August, and on the other hand the price levels charged on the various European markets, we cannot help but observe that this well-established rationale is shaky. The apparent fragility of the summer market window has been contradicted by the consolidation or even rise of the sources in place at this time of year, especially Israel.

**Israeli mango**  
Distribution of imported volumes in Europe in 2015



**Sea-freight Puerto Rican mango**  
Average import prices in France



## Puerto Rico A balanced campaign

This source, after asserting itself on the European market for two years, with exports exceeding 10 000 t, reverted in 2015 to its 2012 level, with a total of 7 400 t. The 2015 campaign had the same duration as 2013, but was earlier, as in 2014. It actually began in mid-April, i.e. one month earlier than 2014. This longer and less abundant campaign enjoyed steadier and stronger rates. In April, Puerto Rican Keitts took advantage of the relative under-supply of the transition period between Peru and West Africa. The average rates were around 7.00 euros/box, and then dipped gradually, as the West African supply progressed, reaching their lowest levels from June to mid-July (5.50 euros/box). Thereafter, prices recovered their early-campaign level for a fortnight due to a moderate supply of quality produce sought by the supermarket sector. With Israel beginning its campaign in late July, prices dropped temporarily, before strengthening in the second half of August, which marked the end of the source's campaign.

Although quantitatively less significant, the Puerto Rican campaign was able to satisfy the distribution sector with produce of standard but fairly stable quality, and above all was able to take advantage of supply variations from competing sources.





## Spain Bingo!

### Fair winds

Europe's only mango producer has definitely not lost the ability to surprise. With its dazzling rise over the last few years, Spain has hoisted itself up into the top 10 suppliers to the European market. The Spanish campaign may differ in its profile and proceedings every year, but we cannot help but observe that it keeps generating revenue for the industry operators. A happy combination of circumstances helped make 2015 a good campaign. It was also identical to the previous one, except for a considerable change in volumes on the market.

As in 2014, the particularly mild spring weather conditions enabled flowering which heralded abundant production. Yet this good flowering in the end brought a leaner fruit-bearing period in the first days of summer. The very high temperatures in July and August ensured that a promising production potential translated into a harvest volume which was ultimately in shortfall. A few weeks before the beginning of the first harvests, Spanish professionals were talking of a 50 to 70 % fall from the previous year, which radically altered the commercial strategies of the market traders. While the summer heatwave compromised the volume of production, it also contributed to the good fruit quality. Conversely, the harvest mainly comprised large sizes, which are not always the most popular, especially in the supermarket sector which sells individual fruits. But in the absence of alternatives, the Spanish supply made itself essential.

In 2014, the initial harvest forecasts were around 24 000 t, and the actual figure was 18 000 t, a new record for this source, propelling it to fourth place in the European market suppliers ranking. In 2015, the forecasts were based on 2014 (18 000 to 20 000 t) but ultimately yielded shipments of around 9 000 to 10 000 t. This distinct downturn, however, did not compromise either Spain's predominance in the mango trade, nor above all the highly positive economic balance of the campaign.

A large, steep fall in Israeli exports from early September and a significant delay to the start of the Brazilian winter campaign in late October left the European market without any real competition during the Spanish production period. With no other major sources present, Spanish operators were completely free to earn maximum value from their own scarce product.



### A clear round

Osteen mangoes, the mainstay variety of Spanish production (approximately 80 %) launched the campaign from mid-August, with weather conditions accelerating their maturation. But it was only from mid-September that the supply took off. Shipments continued until late October. Particularly high until late September, their rates dropped gradually until the end of the campaign, while maintaining unprecedented levels. A comparison of the average price curves for the last two campaigns (see graph) barely requires any comment. In parallel, Spain was providing limited quantities of Kent from mid-September to mid-October, which sold steadily at between 4.00 and 4.50 euros/kg, while Brazil was beginning its air-freight campaign. Both sources achieved high and stable prices, given the moderate overall supply, with no real interference between them, as has sometimes been the case. Already present in previous years, Spanish Irwins confirmed their solid footing, especially on the wholesale markets where they regularly obtained strong prices. Available from September to mid-October, they expanded the Spanish supply in a top-end air-freight quality niche of ready-to-consume fruit. More modestly sized than the other Spanish varieties, they also constituted a diversification of the range during this under-supplied period. Finally, the Spanish campaign ended with Keitt in the first half of November. The 2015 Keitt campaign was cut short in comparison to previous years, with limited volumes also selling at high prices. Some Tommy Atkins batches topped up by the Spanish varietal range at the beginning of the campaign; though they were more aimed at the domestic market and Portugal, where this variety is more popular than on other European markets.



Besides the favourable circumstances which Spain took advantage of, we should add a factor which has doubtless magnified the success of this campaign. The production shortfall considerably reduced the role of the alternative trading circuits, which generally deal in lower-quality merchandise auctioned locally. Hence the majority of the fruits were marketed by solid and professional structures, with all that entails in terms of involvement in fruit cultivation and processing.

### Rising and diversifying production

Spanish production is continuing its growth, going by the intensification of planting in the Malaga region where the smaller plots available are terraced for planting with mango trees. In certain zones, this spread has been to the detriment of avocado orchards, another flagship crop of the region. Plantations are being set up at increasingly high altitudes, on the valley slopes, relegating avocado trees to the wetter valley bottoms.

Osteen, which is well suited to the local conditions and highly productive, remained the number one variety in terms of the market but also planting. It provided the bulk

of the campaign in terms of volume, and consolidated its position in European trade. Yet varietal diversification remains a topical theme for arboriculture in Southern Spain. The good results of the Irwin campaign are encouraging certain operators to step up planting. Though less productive than Osteen, this fairly early variety has opened up new market slots. Nonetheless, its production should remain limited, if the objective is to keep to the top-end segment. The extension of the Spanish cultivation area would instead be based on Keitt, a later and more productive variety, which above all can extend the campaign into November. Some planting is in progress, though the risk of coming up against the massive Brazilian supply at this time of years makes its marketing more fraught.

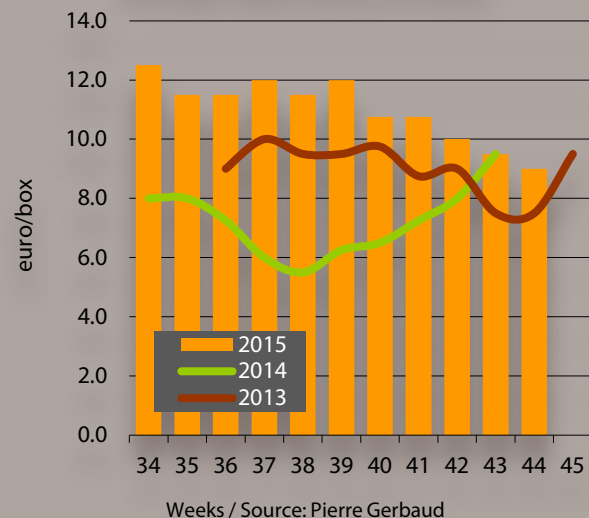
The success of this campaign will probably encourage Spanish operators to continue expanding their orchards. The inherent risk of this development is going through less easy campaigns, with overabundant production coming up against strong competition (Israel and Brazil). In the knowledge that the Spanish cultivation area is established at the edge of the optimum zone for the plant, production remains fragile and subject to major variations ■

**Pierre Gerbaud**, consultant  
pierregerbaud@hotmail.com

**Spanish mango - Average import prices by variety in France in 2015**



**Spanish Osteen mango Average import prices in France**





## European mango market 2015 monthly review

A good year



**The increase in export volumes from most of the sources was well received, with consumption on the rise. However this increase was not enough to erase the transition phases between the major suppliers to the European market. Thus April and September remained fragile times of year...**



## Good market conditions in January to start the year

In early January, the transition from Brazil to Peru proceeded gradually. The fluidity of the supply worked overall in favour of steady rates. In mid-January, Peruvian exports were 60 % less than at the same time the previous year. This big decrease helped maintain good market conditions, rarely seen in January when the quantities received are traditionally large and rapidly rising. The Peruvian supply was still evenly divided between the European and North American markets.

## Generalised dip in February and stagnation in March

The accumulation of substantial tonnages from Peru and moderate demand led to deteriorating rates across the European markets. Europe seemed to be the main target for Peruvian operators, with volumes aimed at North America proving more limited. In late February, the change of production zone had the consequence of going from a supply hitherto comprising mainly small sizes, to a supply where the bigger sizes gradually took over and were subject to commercial pressure. In mid-March, Peru ended its export campaign to the North American markets and concentrated its supply on the European market. In this context the official export campaign opening dates were announced for Côte d'Ivoire (20 March) and Mali (16 March).

## Under-supply in April

The withdrawal of Peru at the end of the campaign left the European market in a distinct phase of under-supply, leading to strong rates. Imports from Brazil, Puerto Rico and Central American sources (Costa Rica, Nicaragua, etc.) could only partially compensate for the end of the Peruvian season. The West African supply arrived only after this trough period. In this context of slight under-supply African mangoes, especially from Côte d'Ivoire, were particularly prized, and consequently sold quickly and at high rates.



## May supply provided mainly by West Africa

The influx of West African volumes, combined with those from Brazil and Puerto Rico, very readily satisfied European demand, especially since mango consumption was tending to wane as seasonal fruits came onto the market.

## Stocks forming in June, with seasonal fruits preferred

The combined incoming shipments from the West African and Latin American sources (Brazil, Puerto Rico, Dominican Republic) proved greater than the natural market demand. These more difficult conditions led to stocks forming, which depressed prices heavily. Tropical fruit consumption was reined back by the arrival of large volumes of seasonal fruits, which were favoured by consumers. In mid-June, the European mango market went through the most difficult spell since the beginning of the year. The qualitative disparity of West African mangoes only increased sales difficulties. The overlap of Mexico and Senegal, particularly early this year though still limited to air-freight shipments, did nothing to help sales or keep prices in line with the costs for the merchandise.

## Rebalancing in July and August

In July, despite the listless general demand due to the abundance of seasonal fruits, the European mango market gradually climbed out of the rut where it had spent several weeks, and rebalanced with a more restrained supply level. West African stocks were depleted, and Brazilian exports dipped to a lower level than the previous year. Shipments from Puerto Rico and the Dominican Republic seemed stable and steady. Only Senegalese imports were on the up. In late August, the European supply level remained moderate, in a context of restrained demand. This balance helped maintain stable and high rates, more particularly for good quality fruits.

## Incoming shipments on the wane in September

The Israeli campaign approached its final phase, while Puerto Rico too neared its end and the Dominican Republic shipped marginal volumes. There were few alternative supplies, chief among which was Brazil (Keitt, Palmer and Tommy Atkins). In mid-September, the end of the Senegalese campaign and the decline in Israeli shipments contributed to Brazil climbing up to be the top European market supplier. This source increased its shipments slowly, split 75 % for the North American market and 25 % for the European market. Spain started its campaign with quantities 50 to 60 % below initial predictions, due to the July and August heatwaves which damaged production.

## October-November: the months of Brazil

Early October saw the supply return to a more normal level for the time of year. Brazil was the main supply source to the European market. The varietal composition of its shipments gradually altered: 32.1 % Tommy Atkins, 35.2 % Keitt, 19.9 % Palmer and 12.4 % Kent. The split of Brazilian exports between North America and Europe became more balanced. The Spanish campaign finished early in late October, with rates still high.

In November, the market was better supplied, with larger quantities from Brazil in spite of varia-

tions in incoming shipments. Prices were also high. Brazil stepped up its winter campaign, with an increase in Kent volumes to make up 40.3 % of the shipments. Brazilian Keitts also had a strong presence, accounting for 34.1 % of exports. In late November, the European market was distinctly swelling under the effect of increased shipments from Brazil. The weekly imports tempo exceeded 200 containers, creating an accumulation of merchandise in excess of the market's absorption capacities. The Brazilian volumes were especially large since its campaign on the North American markets was winding down, gradually replaced by the Ecuadorian campaign.

## A tight and overloaded market in December during the Brazil-Peru handover

The market was particularly tight and overloaded in early December, for both air-freight and sea-freight mangoes. The transition from the Brazilian to Peruvian campaign resulted in an influx of merchandise in excess of the market's absorption capacities. Brazilian shipments remained large, and dominated the supply. The early start by Peru, with shipments rapidly rising, swelled the already excessive supply from Brazil. In spite of demand being invigorated by the run-up to the end-of-year holidays, prices tumbled, as in the worst years. A tempo of 250 containers per week, across all sources, represents the limits of the European market ■

Pierre Gerbaud, consultant  
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Producer country file

## Spanish mango

*by Pierre Gerbaud*

**Spain occupies a very special place in the international mango trade. Overlooked as recently as the early 2000s, it has propelled itself into the leading pack of suppliers to the European market. In a matter of fifteen years or so, this source has gradually become an essential part of the mango supply calendar. In addition, it is distinguished by several factors, the first of which is certainly being part of the European Union. It is indeed the only European producer country, which gives it a genuine logistical asset by virtue of its proximity to the consumer markets. The second original feature lies in its varietal selection: estimated at around 85 % Osteen, a variety completely unknown before the emergence of Spain. Shipments of Spanish mangoes have risen in stop-start fashion, in line with a production level which varies from year to year. The production zones are at the northern limit of the optimum range of the mango.**



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## Spanish mango

### Location

Spanish mango production is packed into the country's "tropical zone", the coastal strip of Andalusia between Malaga and Motril, where the avocado is also cultivated. The success obtained by the mango quickly intensified planting in this zone, but also in new lands extending as far as Cadiz in the west and Almeria in the east. This choice was based mainly on the pedoclimatic conditions of the region which are suited to the mango's requirements. Orchards rapidly colonised the foothills of the Penibaetic system to which the Sierra Nevada belongs. Most often terraced, mango orchards often dispute the available land with the region's other flagship crop, the avocados. The surface areas currently planted with the mango are apparently around 5 500 ha, as a result of a 20 % annual rise for the past few years. Farms are mainly of modest size, estimated at 2 to 4 ha on average. Until 2005, planting took place in the most favourable zones for mango cultivation. However, the successive good economic results have encouraged farmers to plant in less favourable zones, more exposed to drought, wind and low temperatures.

Gradually, avocado orchards have been driven down to the Andalusian valley bottoms due to their water requirements, whereas the mango orchards have hauled themselves up bit by bit to the top of the driest hills. The extension of the mango cultivation area has come up against two factors: on the one hand, water availability in this historically limited region, and on the other hand pressure on land, long monopolised by tourism development, the region's other source of wealth. This pressure seems to have eased since the real estate bubble burst following the 2008 crisis. Agriculture, paid little heed by the public authorities when tourism was booming, is now seen as a buoyant sector, and therefore worthy of renewed interest in terms of its revenue and job creation. Hence the restrictions are easing, to help free up new planting zones. There remains the problem of water, hitherto focused on tourism development and supplying the conurbations. Again, the success of the mango industry is in the process of changing things, with the promotion of any new water management schemes favouring the fruit cultivation sector.



Graphics: Cirad-Fruitrop



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## Spanish mango

### Production

From small beginnings at the dawn of the millennium, the mango cultivation area has grown at a tempo set by a succession of profitable campaigns. From a few hundred tonnes, production rapidly exceeded one thousand tonnes and reached the 10 000-t mark at the end of the decade. The acceleration of planting had enabled production to double by 2014. This trend has maintained a high tempo, with the figure currently at around 25 000 t. The planting in progress is heralding a further increase in production, currently estimated at 30 000 t, but which could reach 50 000 t in the coming years, like the avocado. The Spanish mango industry is based on a thousand or so producers, independent or grouped into cooperatives. Marketing is carried out by half a dozen big shipping facilities. But in parallel there is a veiling system for mangoes, especially at the beginning of the campaign. These marketing circuits are used to sell off, among other things, less highly rated varieties such as Tommy Atkins, Sensation, etc., often of inferior quality categories.



### Production calendar and varieties

The production calendar can vary slightly from one year to the next, depending on the weather conditions affecting the production zones. But overall, the first marketable fruits appear toward mid-August. Depending on the year, the campaign may continue until mid-November or late November at the latest. The first harvests, often comprising Tommy Atkins, are generally sold on the national market and to Portugal. This variety is rarely shipped to other European countries, except in the case of an overall market under-supply. The real campaign launch, which sees increasing volumes being shipped, comes between the second half of August and early September. The campaign progresses to its peak with Osteen, the jewel of Spanish production, which generally finishes in late October. This variety is re-

placed at the end of the campaign by Keitt, which extends the Spanish season until late November at the latest. In September and until mid-October, the Spanish supply expands with Irwin, with limited quantities shipped out. In October, Kent shipments top up the range.

Osteen forms the bulk of Spanish shipments, with an estimated proportion of 85 %. The second biggest variety is probably Keitt (10 %), with planted areas constantly on the rise, and which could attain 20 % in the coming years. This variety, on which many hopes are based, helps extend the campaign. The other varieties mentioned are available in more modest quantities, but widen the available range, and often obtain decent prices for the shippers (Kent and Irwin: 5 %).

**Osteen  
variety**



**Mango — Spain — Harvest calendar**

	A	S	O	N
Tommy Atkins				
Osteen				
Keitt				
Irwin				
Kent				

Source: Pierre Gerbaud

## Spanish mango

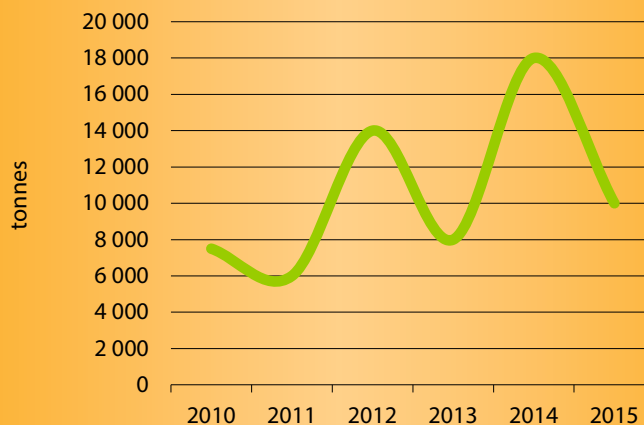
### Outlets

When Spanish mangoes first entered the international trade, the main target market was France, because of its proximity, and perhaps its openness to tropical fruits. After a few campaigns, their distribution accelerated and extended to other European countries. Despite early reticence, given the higher prices in relation to the Brazilian supply available at the same time, the various European markets gradually opened up to this source. Marketing mangoes of a previously unknown variety (Osteen) would take time to gain acceptance by distributors and consumers. The increase in good overall quality mango volumes on the market gradually won over the various markets, until it became an essential part of the European Union supply calendar. The rapid ends of the Israeli and Senegalese campaigns in August, and the frequent late starts by Brazilian Kent, have offered Spain a wider market window, with the volumes and quality of the fruit finishing the job of persuading distributors.

The bulk of Spanish production is shipped to the various European markets. Paradoxically, the fruit is still relatively unfamiliar on the national market outside of the production zone. This situation probably represents a potential sales opportunity for producers.

The Spanish mango industry has seen exemplary development: based on a few large facilities, often initially well-established in avocado production and marketing. The shortness of the Spanish mango season has encouraged sector companies to expand their sale period. To this end, they have gradually added to their primary activity importing mangoes from other sources. Hence the cultural and linguistic proximity, but also logistical facilities, have led them to develop commercial relations with certain South American sources. Outside of the local production period, Spain has become an import and redistribution hub for South American mangoes.

Mango - Spain - Evolution of exports



Source: Pierre Gerbaud

### Logistics

The proximity of the recipient markets represents one of the major assets of this industry, given the large fleet of lorries available in Spain dedicated to fruit and vegetable transport, which helps ensure a supply of superior quality mangoes. The later harvest ensures a more advanced maturity, enabling the fruits to develop more flavour. The orientation of the market toward the ready-to-eat segment may very well be followed by Spanish producers from the production stage, generating more added value for their product.

The logistics for imported fruit, especially air-freight mangoes originating from certain South American sources, is another positive for the sector companies. Forwarding of this fruit to other European countries is seamlessly managed by the long-established fruit and vegetable transport networks, via which Spain is a major supplier.





## Producer country file

# Dominican mango

by Bettina Balmer

A small country with favourable conditions for mango cultivation, the Dominican Republic is a newcomer to the international stage (for the past decade), with an incredible growth rate (7-fold increase in volumes in ten years), though still in modest quantities (14 300 t in 2014).

Keitt seems to have found a favourable home to develop, since it represents at least 70 % of export volumes, despite the efforts of the public institutions and associations to diversify cultivars in order to establish a footing on niche markets (ethnic, organic, gourmet). Because, evidently, the country is not in a position to compete with the heavyweights of the sector.

Unusually compared to the country's other agricultural industries, the mango is exported predominantly to Europe. The results obtained are better than decent, and worthy of special mention, given the growth in market share. Its natural economic partner, the United States, remains hard to access for competition and sanitary reasons.

Nonetheless, the Dominican Republic must face up to the daunting challenge of climate change, which has brought severe drought since summer 2014, among other problems inherent to the industry.





## Dominican mango

### History

**1966:** Ministry of Agriculture introduces 16 mango varieties, including Keitt and Kent, from Florida to San Cristobal (province west of Santo Domingo). Thereafter, development concentrates on Irwin, Kent, Keitt, Glenn, Carrie, Tommy Atkins, Springfield and Sensation.

**1980:** first commercial plantation.

**2003:** first exports.

**2004:** creation of the mango cluster ProMango from US funds in December, and structuring of the industry.

**2006:** cluster launches a competitive industry strategy with the following outlook: "to become by 2015 the number one high-quality mango exporter from Central America and the Caribbean for the ethnic, organic and gourmet markets (ready-to-eat mango) in Europe and the United States". This ambitious mission has not yet been fully accomplished...

**2014:** imports of niche varieties for local development in 5 to 6 microclimate zones.

**2015-2016:** construction by ProMango of a packing station with ripening hall, due to be operational for the 2016 harvest.

**2015:** development of a national brand for local varieties (especially Banilejo, which takes its name from Bani, the Dominican Republic's mango capital).

### Location

While mangoes grow throughout the country, structured production is packed into the coastal zone of the south-west and mid-west. In decreasing order of volume, the main provinces concerned are Peravia (40 % of the country's cultivated surface areas), Azua, San Cristobal and San Juan. As well as these provinces, which represent 65 to 70 % of planted surface areas, production and number of structured farms, it is important to add the north-west region (Dajabon province, close to the Haitian border), the northern region (Moca, Espaillat province), and the south-east region (La Romana province).

A mango festival is held every year in the city of Baní (capital of Peravia province), dubbed "the Dominican mango capital" for the occasion. The production area of Baní and the surrounding areas contains around fifteen mango packing stations (sometimes combined with other fruits and vegetables).



## Dominican mango

### Production

In 2014-15, commercial production represented a surface area of 4 717 ha, for a volume of approximately 30 000 t, 40 to 50 % of which was exported. Keitt accounted for 70 % of this volume, and is reportedly on the up (according to certain sources, 80 % of exports). Next came Tommy Atkins with 15 % (on the slide) and other varieties with 15 %, including local varieties (yellow-fruit, especially Banilejo, Mingolo, Gota de Oro). Kent apparently accounted for minor volumes only.

If the estimated number of producers is between 1 400 and 1 500 (forming the mango cluster), those which provide most of the commercialised and export production can be counted on the fingers of one hand, each exploiting hundreds of hectares. Certain producers are GlobalGap, Tesco, JAS or Fair for Life certified. Furthermore, depending on the year, 10 to 30 % of export production is apparently organic certified, with three main producers located in the provinces of Azua and Peravia. Finally, there is a small biodynamic mango (and banana) producer based in Azua province (Demeter).

The average yield of traditional farms is 10 to 11 t/ha, while the maximum yield is 30 t/ha for a farm with more sophisticated production equipment (drip irrigation, advanced flower induction, etc.).

The ProMango cluster was established using public US funds in 2004. Thereafter, it has received aid via various other international backers. ProMango brings together approximately 350 active members involved in production, including the 149 members of the country's only cooperative, Cooperativa Villa Fundación, fifteen or so exporters officially active in this sector and local associations from the provinces concerned.

The Villa Fundación cooperative is a project which emerged in 2004 in the village of the same name, covering a total surface of approximately 260 to 270 ha, producing above all Keitt (56 % of the cultivated area), and to a lesser degree Tommy Atkins (37 %). After being on standby for four years following management problems, this project was re-launched in 2013 thanks to a loan of 56 million DOP (approx. 1 million euros) granted by FEDA (Fondo Especial para el Desarrollo Agropecuario), a special agricultural development fund directly dependent on the President's office.



Banilejo

© Carlos José Jiménez Vázquez, Defrut



Gota de Oro

© Carlos José Jiménez Vázquez, Defrut



Yamagui

© Carlos José Jiménez Vázquez, Defrut



© Bettina Balmer

## Dominican mango



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While ProMango does not yet handle exports directly, it is building a packing station with a ripening chamber in Villa Sombrero (Peravia province, near Bani), which should be operational in 2016. This centre will provide services to producers-exporters, as well as exporters who will collect the fruits from local producers. In the longer term, ProMango could take responsibility for exports using this facility. It is planned to certify the packing station in good preparation practice with a long-term view to obtaining GlobalGap certification. According to ProMango, around fifty producers should sell their production this way.

Having described this facility, we cannot help but observe that control of this industry remains in the hands of a few private operators, which are positioned according to their own interest and advantage. And whatever our opinion of it, the surface area extensions involve a mango well-suited to the Dominican terrain, and which is also in demand from the international markets: Keitt.

The fruit fly of the genus *Anastrepha* (especially *Anastrepha obliqua* and *Anastrepha ludens*, or Mexican fruit fly) constitutes the main phytosanitary problem encountered in the country. The producers must accept a management and inspection programme governed by international phytosanitary standards. Hence in November 2014, the country was infested by the Mediterranean fly, which entered via the east of the country (via Punta Cana international airport). Consequently, the United States closed its borders to a range of Dominican fruits and vegetables (red tomato, smooth-skinned avocado, passion fruit, pepper, etc.) from March 2015, partially lifted in early January 2016 in zones which were not affected. This closure represented major dry losses for certain products. The sparse mango flows aimed at North America were not affected by this ban, given the sanitary conditions already imposed by the US Department of Agriculture before this crisis (hot water bath). Apart from this, there are other phytosanitary problems: other fruit flies, anthracnose, mites, lepidoptera such as *Prays citri* and *Cryptoblabes gnidiella*, scale insects, mildew, rats, etc.



## Dominican mango

### Varieties and harvest calendar

After various research programmes, the Ministry of Agriculture ended up characterising 133 local cultivars, as well as around fifty unnamed varieties. We should note that the vernacular names can overlap. For example, Crema de Oro can be known as Gota de Oro or Crema de Leche, according to certain sources in the literature. The provinces of Peravia and San Cristobal pack in most of the varieties.

The domestic mango is characterised by a small size (237 g on average), a yellow colour and a lower pulp content than imported mangoes. The cultivars most commonly used as rootstocks are Largo, Sumozo, Mameyito and Banilejo. The latter, also in certain cases known as Mameyito, has emerged as being the most suitable local variety for industrialisation. It is also used for manufacturing pulp due to its low fibre content.

Furthermore, in 2014, ProMango imported ten or so new varieties aimed at niche markets (ethnic consumption). This genetic material was purchased from Fairchild Tropical Botanic Garden in Florida, under a development programme conducted by IDIAF, the Dominican Agricultural Research Institute. Five to six microclimates have been identified as able to accommodate these new varieties. The trees should enter production in approximately three years.

Finally, only around ten varieties are exported. Banilejo and Mingolo are highly rated in the United States and the United Kingdom by the Asian population. Exported in larger volumes from Haiti, Madame Francis is also mainly aimed at the United States.

The local varieties are harvested overall from March to July, whereas the introduced varieties are harvested a bit later (June to August-September for Keitt).

#### Mango — Dominican Republic

##### Main identified varieties

- Baboso
- Banilejo
- Glenn
- Gota de Oro
- Grano de Oro
- Guanoso
- Guerrero
- Languito
- Manzano
- Pelotoso
- Puntica
- Soleta
- Sumozo
- Yamagui

##### Introduced varieties

- Bizcochuelo
- Bombay
- Glenn
- Haden
- Irwin
- Keitt
- Kent
- Mme Francis
- Ono
- Osteen
- Palmer
- Parvin
- Pascual
- Sensation
- Springfield
- Tommy Atkins

##### Varieties introduced in 2014

- Alphonso
- Amélie
- Duncan
- Edward
- Jakarta
- Jumbo Kesar
- Kasturi
- Malika
- Maya
- Nam doc Mai 4
- Sindhri

Source: Dominican Ministry of Agriculture

#### Mango — Dominican Republic Exportable varieties harvest calendar

	M	A	M	J	J	A
<b>Introduced varieties</b>						
Haden						
Keitt						
Kent						
Madame Francis						
Palmer						
Tommy Atkins						
<b>Local varieties</b>						
Banilejo						
Mingolo						
Grano de Oro						
Puntica						
Gota de Oro						

Professional sources, ProMango

#### Mango — Dominican Republic — Characteristics of exportable local varieties

	Madame Francis	Banilejo	Gota de Oro	Mingolo	Puntica
<b>Size (cm)</b>	8.5 x 6.2	7.5 x 6.3	10.5 x 4.6	10.5 x 8.8	10.3 x 4.8
<b>Colour</b>	Yellow	Pinky yellow	Yellow	Yellow	Pinky yellow
<b>Odour</b>	Aromatic	Aromatic	Honey odour	Aromatic	Little aroma
<b>Fibres</b>	Thin and long	Thin and flexible	Abundant	Short and thick	Sparse and short
<b>Weight (g)</b>	300-450	140-220	Approx. 240	300-450	220-280
<b>Brix</b>	22	22.5	18.1	18.5	22.1
<b>pH</b>	4.3	4.6	4.6	4.3	4.4

Source: ProMango

## Dominican mango

### Outlets

Domestic mango consumption is difficult to calculate in view of the lack of reliable production data. Indeed, the majority of the mangoes consumed in the country come from private gardens and orchards, backyards, all surface areas not registered by the Ministry of Agriculture. The supply for the national market mainly comprises local varieties and sorting rejects from the exportable supply. Some of the fruit is aimed at the processing sector. Note that it is important to include in national consumption those of the 4 million tourists who visit the Dominican Republic every year. In October 2015, mangoes sold from 20 to 35 DOP per piece at points of sale (including stalls) in the capital, Santo Domingo. The price is lower in rural zones close to production facilities.

The Dominican Republic started to export mangoes from 2003. From 300 000 boxes in the first year, the volume climbed to more than 2.5 million boxes in 2014. Exports have constantly risen, especially to Europe, to a more than noteworthy level. The main destinations are Continental Europe with more than 80 %, and the Caribbean. Within the EU, the United Kingdom is the main outlet, followed by the Netherlands. After stagnating at less than 500 t for years, the United States had 883 t in 2013 and 932 t in 2014.

While the United States, the country's economic partner, in theory represents the natural market of the Dominican Republic, mango exports to this country are nonetheless limited because of two main factors. On the one hand, the Dominican Republic faces direct competition with Mexico, undergoing price pressure barely tolerable for Dominican exporters, especially for Tommy Atkins, Kent, etc. On the other hand, due to the presence of the fruit fly (*Anastrepha ludens*, or Mexican fruit fly, and now *Ceratitis capitata*, the Mediterranean fly), the United States is forcing exporters to apply a hydro-thermal treatment: a hot water bath 46°C, from 65 to 110 minutes depending on the fruit size. The process must be monitored and validated by APHIS agents (Animal and Plant Health Inspection Service of the USDA). A single exporter based in the north of the country is equipped with such a facility, as opposed to 8 in Haiti. This technical constraint and considerable additional cost (installation + monitoring and inspection expenses), coupled to the commercial factor, are not doing anything to help a surge in exports to this destination. Apparently, Dominican mangoes will continue to harness value by developing outlets in Europe and the Caribbean.

The air-freight mango reportedly represents one third of export volumes. It takes advantage of cargo availability in tourist aircraft for transport to Europe from the country's main airports: Punta Cana, La Romana, Santo Domingo, Puerto Plata. The sea-freight mango is exported primarily from the port of Caucedo (near Santo Domingo), and to a lesser degree Haina (Santo Domingo). Keitt is highly dominant with a 70 to 80 % share of export volumes.

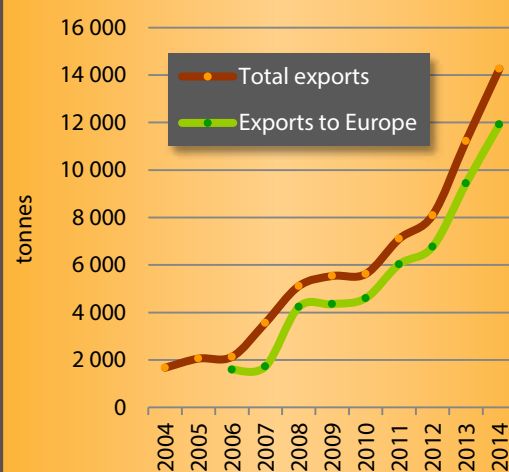
Shipping time:

- Europe (United Kingdom and Rotterdam): 10 to 12 days
- New York: 5 days
- Miami: 2 days

The country has 10 to 15 exporters. Some are also producers, but this is not the rule in this country. Overall, the majority of exports remain in the hands of a few operators.

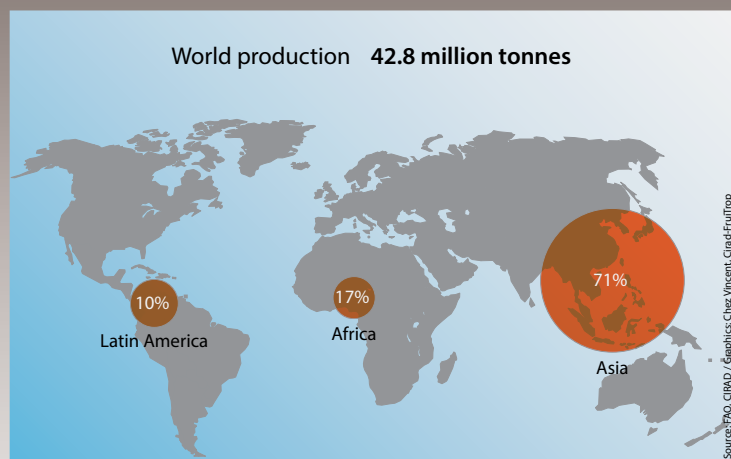
There is a fruit processing sector in the Dominican Republic. Mango-derived products are exported in small quantities, practically all to the United States (including Puerto Rico), with a small proportion going to the Caribbean.

**Mango - Dominican Republic  
Evolution of exports**



Sources: DGA, CEI-RD

## MANGO - Production (2013)



Mango - Top ten producer countries	
million tonnes	2013
India	18.0
China	4.6
Thailand	3.1
Indonesia	2.1
Mexico	1.9
Pakistan	1.7
Brazil	1.2
Bangladesh	1.0
Nigeria	0.9
Egypt	0.8

Sources: FAO, professionals

## MANGO - Imports (2014)



Mango - Top 6 importer countries	
tonnes	2014
United States	385 861
Netherlands	154 870
China	152 230
United Arab Emirates	96 637
Saudi Arabia	79 755
Canada	58 000

Source: National Customs, Comtrade

## MANGO - Exports (2014)



Mango - Top 6 exporter countries	
tonnes	2014
Mexico	278 988
Brazil	156 337
Peru	132 104
Pakistan	77 333
Ecuador	45 934
India	42 998

Sources: Comtrade

USA - Imports - Main supplier countries						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>332 095</b>	<b>379 803</b>	<b>377 408</b>	<b>436 085</b>	<b>385 861</b>	<b>405 823</b>
Mexico	221 945	241 468	251 321	285 679	242 737	263 080
Ecuador	25 650	30 364	37 868	45 945	34 462	38 192
Peru	32 175	45 223	26 974	41 277	44 653	33 487
Brazil	24 407	24 810	24 215	23 924	22 361	32 210
Guatemala	12 679	17 875	16 986	16 948	20 803	15 544
Haiti	6 502	9 241	8 045	10 262	9 894	10 728
Philippines	2 815	3 989	2 929	2 411	2 220	3 027
Others	5 922	6 833	9 070	9 639	8 731	9 555

Source: US Customs

Canada - Imports - Main supplier countries						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>46 649</b>	<b>56 375</b>	<b>54 291</b>	<b>60 290</b>	<b>58 000</b>	<b>57 234</b>
Mexico	29 501	35 923	35 173	38 940	35 211	37 065
Brazil	3 529	4 310	4 850	4 706	6 317	6 744
Peru	4 704	6 195	4 346	5 826	6 437	4 789
Ecuador	3 568	4 083	3 709	3 979	3 192	2 716

Source: Comtrade

Central and South America - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>14 982</b>	<b>20 782</b>	<b>23 119</b>	<b>27 025</b>	<b>27 195</b>	<b>21 438</b>
Colombia	7 277	9 675	13 132	13 132	11 530	6 594
Chile	766	2 344	3 240	3 421	5 285	4 819
Honduras	970	3 000	1 339	2 565	2 174	2 999
Mexico	2 982	2 300	1 976	2 921	3 307	2 041
Salvador	1 582	665	569	1 966	1 761	1 952
Argentina	873	1 024	1 353	1 408	1 399	1 426
Bolivia	77	105	79	133	426	431
Panama	137	173	374	535	464	430
Guatemala	155	201	228	124	277	363
Paraguay	50	105	121	117	375	265

Source: Comtrade



European Union - Imports - Main supplier countries						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total extra-EU + Spain</b>	<b>232 495</b>	<b>258 521</b>	<b>246 267</b>	<b>267 186</b>	<b>288 421</b>	<b>290 156</b>
<b>Total extra-EU, of which</b>	<b>224 995</b>	<b>252 521</b>	<b>232 267</b>	<b>260 686</b>	<b>270 421</b>	<b>280 156</b>
Brazil	92 256	91 490	91 093	89 884	99 314	111 511
Peru	60 386	72 350	53 323	68 689	71 975	78 299
Côte d'Ivoire	11 323	10 177	15 245	16 553	20 473	22 919
Israel	10 700	14 016	12 492	11 011	15 865	13 777
Dominican Rep.	4 303	6 357	6 652	9 636	11 154	13 103
Senegal	2 758	5 341	6 197	8 267	10 328	11 520
USA	4 744	8 475	7 954	12 009	11 343	7 383
Mali	3 672	1 795	3 816	4 802	3 833	5 946
Pakistan	10 596	11 745	11 272	12 295	3 873	5 318
Burkina Faso	3 302	2 129	2 126	2 933	3 064	4 358
Costa Rica	3 429	6 873	3 860	4 027	3 825	3 952
Mexico	4 938	5 255	4 512	2 954	2 224	3 078
Ghana	428	227	847	1 627	2 383	2 656
India	3 201	3 016	3 782	6 037	956	2 477
Gambia	776	1 503	981	876	2 193	1 915
Ecuador	1 406	1 523	2 071	3 311	1 418	1 857
South Africa	1 040	507	681	297	592	1 482
Thailand	1 178	1 101	1 061	990	1 128	1 168
Guatemala	845	1 033	24	597	591	904
Venezuela	729	332	141	182	389	468
Nicaragua	435	947	824	211	465	208
<b>Spanish production exported (estimates)</b>	<b>7 500</b>	<b>6 000</b>	<b>14 000</b>	<b>6 500</b>	<b>18 000</b>	<b>10 000</b>

Source: EUROSTAT

Other West European countries - Main markets						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>13 398</b>	<b>14 731</b>	<b>14 906</b>	<b>17 214</b>	<b>18 647</b>	<b>19 080</b>
Switzerland	8 849	9 730	9 905	11 277	12 494	13 448
Norway	4 249	4 657	4 608	5 516	5 685	5 176
Iceland	300	344	393	421	468	456

Source: Comtrade

Russia - Imports - Main supplier countries						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>7 416</b>	<b>7 488</b>	<b>8 091</b>	<b>9 429</b>	<b>8 969</b>	<b>5 294</b>
Brazil	4 893	4 967	5 442	5 863	4 559	2 793
Peru	922	876	666	919	1 235	408
Thailand	393	452	559	750	736	403
China	437	418	435	424	324	286
Ecuador	415	254	87	105	45	3

Source: Comtrade

Other East European countries - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>488</b>	<b>644</b>	<b>808</b>	<b>922</b>	<b>1 172</b>	<b>1 397</b>
Belarus	88	110	114	148	384	818
Ukraine	400	534	694	774	788	579

Source: Comtrade

Mediterranean - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>4 722</b>	<b>8 986</b>	<b>8 986</b>	<b>11 369</b>	<b>11 912</b>	<b>11 897</b>
Morocco	1 174	993	1 372	1 027	2 368	3 228
Lebanon	843	817	1 344	1 720	2 039	3 084
Jordan	2 518	1 765	966	3 271	2 504	2 260
Libya		2 822	1 309	2 128	1 847	1 915
West Bank	4	2 318	3 735	2 905	2 872	1 125
Turkey	183	271	260	318	282	285
Algeria	97	130	209	233	236	273

Source: Comtrade

Japan - Imports - Main supplier countries						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>10 391</b>	<b>10 055</b>	<b>9 741</b>	<b>8 588</b>	<b>7 354</b>	<b>5 841</b>
Mexico	3 974	3 446	3 828	3 569	2 849	2 740
Thailand	1 520	1 514	1 773	1 309	1 229	1 116
Taiwan	995	1 155	834	805	759	803
Philippines	2 834	2 197	2 113	1 733	1 300	464
Peru	60	958	339	548	515	250
Brazil	571	551	598	424	334	235
Australia	124	38	57	62	49	68
USA	277	172	178	109	100	39
India	10	11	4	-	5	24

Source: Japanese Customs

Other Asian countries - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>322 542</b>	<b>322 468</b>	<b>297 632</b>	<b>349 188</b>	<b>363 142</b>	<b>309 406</b>
China	252 705	240 710	203 184	231 938	233 827	152 230
Vietnam	540	10 677	7 932	8 000	33 984	53 375
Malaysia	40 676	42 015	50 960	60 637	48 675	50 324
Singapore	21 485	18 232	20 920	22 716	21 234	22 507
Nepal	1 696	1 964	5 740	6 500	7 117	12 550
South Korea	904	1 351	2 270	3 041	6 494	11 248
Cambodia	2 441	3 401	3 287	5 734	4 415	4 500
Brunei	500	511	779	658	1 012	1 142
Bangladesh	461	2 332	185	5 269	4 857	622
Indonesia	877	1 206	1 064	1 093	119	523
Thailand	257	69	1 311	3 602	1 408	385

Source: Comtrade

Persian Gulf - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>162 741</b>	<b>186 573</b>	<b>207 204</b>	<b>210 683</b>	<b>208 845</b>	<b>244 875</b>
UAE	69 389	75 519	83 635	97 203	105 397	96 637
Saudi Arabia	38 583	58 250	63 497	70 390	57 858	79 755
Oman	19 407	18 444	19 794	21 283	16 548	21 201
Kuwait	16 347	11 705	13 099	10 022	11 223	20 409
Iran	13 000	15 670	18 073	4 317	5 000	12 712
Bahrain	2 515	2 801	5 581	3 134	7 337	8 013
Qatar	3 500	4 184	3 525	4 334	5 482	6 148

Source: Comtrade

Africa - Main markets						
tonnes	2009	2010	2011	2012	2013	2014
<b>Total</b>	<b>10 372</b>	<b>12 261</b>	<b>14 502</b>	<b>16 977</b>	<b>21 268</b>	<b>23 121</b>
Tanzania	2 866	2 020	4 649	4 003	6 208	7 503
Niger	3 300	4 223	3 274	3 676	3 166	2 681
Rwanda	624	1 000	1 360	1 471	2 290	2 557
Djibouti	1 652	1 956	2 251	1 734	2 111	2 500
Uganda	91	111	111	1 310	1 542	2 411
Mauritania	41	549	774	890	2 461	2 387
Kenya		2	253	2 022	1 726	1 739
Botswana	1 230	1 956	1 369	1 451	1 251	787
Namibia	568	444	461	420	513	556
South Africa	500	362	571	522	621	530
Swaziland	843	847	145	112	113	196

Source: Comtrade

Oceania - Main markets						
tonnes	2010	2011	2012	2013	2014	2015
<b>Total</b>	<b>2 659</b>	<b>3 779</b>	<b>3 758</b>	<b>4 330</b>	<b>5 126</b>	<b>4 471</b>
New Zealand	1 994	2 614	2 487	3 217	3 335	3 476
Australia	665	1 165	1 271	1 113	1 791	995

Source: Comtrade

## Mango quality defects

Photos © Pierre Gerbaud



**Immaturity and spotting**



**Natural discoloration  
of the epidermis**



**Misshapen fruit**



**Scarred-over insect pricking**



**Mechanical wounds after picking**



**Mechanical wounds after picking**



**Stalk too long**



**Spotting on epidermis**



**Anthrachnose type fungal infection**



**Fruitfly larvae**



**Sun scorching**



**Misshapen fruit**



**Discoloration caused by scales**



**Wounding with wind-caused rubbing**



**Postharvest sap burn**



**Postharvest soiling by sap**



**Stalk rot**



**Fungal infection**



**Overripeness**



**Internal breakdown caused by excessive nitrogen (high calcium and boron contents too)**



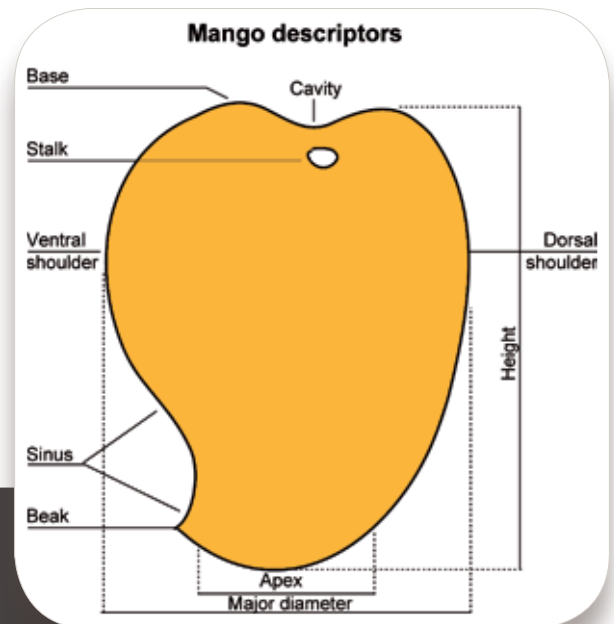


## The main mango varieties

The mango, *Mangifera indica*, probably originated in a region on the border between India and Burma. Today, there are certainly more than a thousand different varieties around the world. The mango plays an important role as a foodstuff in many countries. A distinction was originally made between two main families of mango with clearly different features that came from two diversification zones—the Indian sub-continent and tropical Asia. A great many of the commercial varieties grown today were bred in Florida at the beginning of the Twentieth Century from multiple crosses between parents from these two families. Exported fruits are generally from budded plants.

## Requirements of the mango

The mango is suited to a broad tropical climate ranging from humid to dry. It is found in regions with very different annual precipitation. In the tropics, the halting of vegetation caused by a dry or cool season lasting for a few weeks or months is a condition for good flowering intensity and hence high productivity. Production is often small and irregular in equatorial humid zones as a result of the absence of vegetative growth. The optimum temperature range for tree development and fruit growth is 24° to 30°C. Temperatures lower than 10°C can cause physiological damage. Water supply to the tree must be optimum throughout the fruit growth period and then during the growth of new shoots. Rainfall distribution over the year is more important than cumulative annual precipitation, especially for the production of high-quality fruits. The lower limit for precipitation for commercial mango growing seems to be 750 mm. The mango can grow in a very varied range of soil types if the underlying horizons are sufficiently loose and well-drained. However, the tree prefers deep, fairly light soils with average structure. It can suffer from water shortage in sandy soil and produce small, insipid fruits. It is sensitive to salts in the soil and in irrigation water. Wind can cause damage of varying seriousness and cause imbalance in the water supply. Windbreaks should therefore be grown in windy areas before mango trees are planted.



Characteristics of the two mango families

	Indian sub-cont.	Tropical Asia
Diversification zone	India, Pakistan	Burma, Malaysia, Philippines
Seed	Mono-embryonic	Polyembryonic
Shape	Round to ovoid	Elongated with cylindrical or flattened cross section
Skin colour	Yellow to orange, sometimes with purple flushes	Green to yellowish green, no purple
Taste	Marked, hint of turpentine	Less marked
Observations	Susceptible to anthracnose	



## Tommy Atkins

**Shape:** ovoid, sometimes slightly oblong. Sloping dorsal shoulder. Ventral shoulder above the stalk zone. Round apex, small lateral beak.

**Peel:** thick. Yellow orange and bright red. Dark purple bloom. Numerous large greenish-yellow lenticels.

**Flesh:** strong orange colour. Good quality but slightly fibrous.

**Average weight:** 450 to 710 g

Bred in Florida in 1922, it was soon chosen by growers for its productivity, robustness when handled and good resistance to anthracnose, in spite of its medium fibre content. Flesh quality deteriorates markedly if too much fertiliser or water is supplied. This is the most widespread variety in Brazil, where it forms the majority of exports. It is particularly well-liked in Northern Europe for its bright colour. Most exports consist of medium-sized fruits (8 to 10 fruits per 4 kg box); this matches the requirements of supermarket chains.



## Kent

**Shape:** ovoid, rounded dorsal shoulder and apex. Full ventral shoulder. No beak.

**Peel:** thick and strong, low adhesion. Main colour greenish-yellow with red or even crimson surface in the parts most exposed to light. Slight greyish bloom.

**Flesh:** strong yellow to orangey yellow, rich flavour with melting, fibreless texture.

**Stone :** 9% of total fruit weight.

**Average weight:** 600 to 750 g

Bred in 1932 in Florida from sown 'Brooks', it bears comparatively large fruits, ranging from 440 g to more than 1 kg on young trees. Much appreciated by both the upstream and downstream ends of the sector, yields are medium but with a high proportion of export quality fruits. Fruit colour is attractive and the tasty flesh is firm and ripens very gradually. It is grown in most of the countries supplying Europe, where it is considered to be the yardstick for mango. However, considerable variations in colour and size according to the production zone can lead to sales problems.



## Keitt

**Shape:** oval, abruptly falling dorsal shoulder. Full and rounded ventral shoulder. Rounded, obtuse apex with no beak.

**Peel:** thick and strong, fairly high adhesion. Orangey yellow to crimson yellow on the side exposed to the sun, with numerous small pale yellow to russet lenticels. Fairly strong lavender-coloured bloom.

**Flesh:** orange to deep yellow. Rich and fruity flavour. Melting texture with many fibres that are not particularly unpleasant as they are fine.

**Stone:** 7 to 8% of total fruit weight.

**Average weight:** 510 g to 2 kg

Bred in 1939 in Florida from sown 'Mulgoba', it has high, regular yields. The reddish colour appears very early before the fruit is ripe and can lead to problems of evaluation of maturity; the latter can be enhanced by time in a ripening chamber. An end-of-season variety in most sources that makes it possible to prolong the export season. Less appreciated than 'Kent', it is nevertheless of increasing importance during periods of gaps between supply sources.



## Osteen

**Shape:** oblong with a rounded base. Rounded apex, sometimes with a small beak.

**Peel:** thick, not very adhesive. Main colour violet/purple with some lavender lights. White lenticels.

**Flesh:** lemon yellow, firm and juicy. Very high quality and not fibrous.

**Stone:** long and flat.

**Average weight:** 500 to 800 g

'Osteen' is from Florida, where it was bred from sown 'Haden' in 1935. It is little grown on a global scale in spite of its good commercial features. It has become more common on the EU market since 2000 as it forms the majority of Spanish production.



## Haden

**Shape:** oval to rounded cordate. The ventral shoulder is broader and slightly higher than the dorsal shoulder. Well-rounded apex.

**Peel:** mostly dark red with numerous whitish-yellow lenticels.

**Flesh:** orangey yellow, almost fibreless. Pleasant, slightly acidulated taste.

**Average weight:** 510 to 680 g

Variety bred from a sowing of 'Mulgoba' in 1902. Shipped almost only by air, this variety tops up supplies of 'Kent' when these are too small to meet demand. The fruit has a fine appearance and a reputation for fragility, requiring rapid sale.



## Valencia Pride

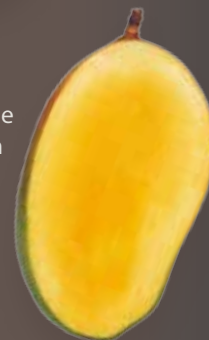
**Shape:** elliptic. Rounded apex, large apical beak.

**Peel:** comparatively thin but detaches fairly well. Basic colour greenish-yellow with a large red to purple area. Yellow lenticels.

**Flesh:** deep yellow. Aromatic and practically fibreless.

**Average weight:** 600 to 900 g

Variety bred from sown 'Haden' in Florida in 1941. Very elongated, fairly large fruits with attractive colour and shape. Good productivity. Grown mainly in West Africa, it long enabled varietal diversification at the beginning of the season when shipments consisted mainly of 'Amélie'. Its attractive colour formed an alternative. Gradually growing in popularity, it is now consolidating its market share in the range of air-freight fruits.





# Wholesale market prices in Europe

## January/February 2016

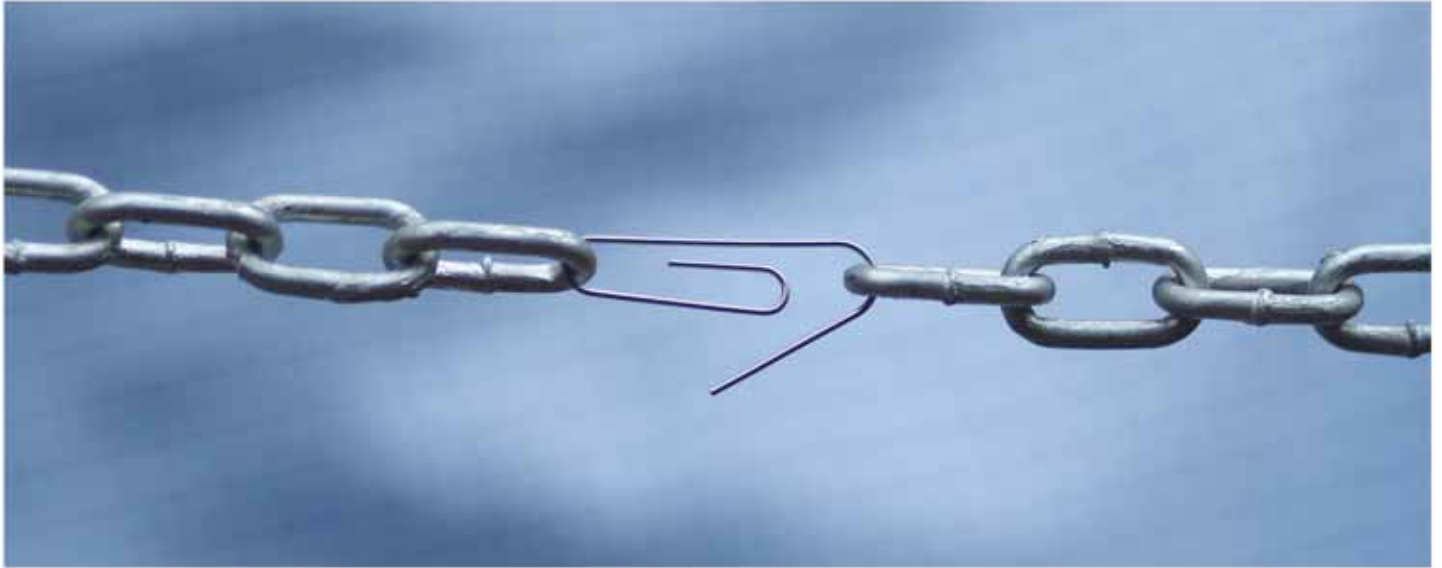
					EUROPEAN UNION - EURO				
					Germany	Belgium	France	Holland	UK
AVOCADO	Air Sea	TROPICAL ARAD FINO FUERTE	DOMINICAN REP.	Box			14.00		
			ISRAEL	Box	10.00			12.00	
			ISRAEL	Box	11.00				
			ISRAEL	Box				10.00	
		PERU	Box			10.00	14.00		
		CHILE	Box	12.00	14.00	11.15	13.13	11.77	
		COLOMBIA	Box			10.50	13.38		
		ISRAEL	Box	13.25		10.40	14.00	10.79	
	Truck	HASS	MEXICO	Box	12.50		10.60	11.69	11.61
			PERU	Box			14.00	13.75	
			ISRAEL	Box	10.67		9.25	11.13	9.94
			SPAIN	Box			10.00		
		PINKERTON BACON FUERTE HASS REED	SPAIN	Box			11.00		
			SPAIN	Box	14.25	14.00	13.29	16.00	
			SPAIN	Box	8.50		10.00	10.50	
BANANA	Air	RED SMALL	ECUADOR	kg				5.17	
			COLOMBIA	kg			6.80		
	Sea	SMALL	ECUADOR	kg				5.67	
			ECUADOR	kg			1.70		
CARAMBOLA	Air		ISRAEL	kg					6.54
			MALAYSIA	kg		6.67	5.07	5.16	5.94
COCONUT	Sea	GREEN NOT DETERMINED	COSTA RICA	Bag				15.50	
			COTE D'IVOIRE	Bag		12.50	8.75	12.75	13.31
			DOMINICA	Bag					10.46
			SRI LANKA	Bag				7.45	10.07
		YOUNG	THAILAND	Bag				12.75	
DATE	Sea	DEGLET KOUAT ALIGH MEDJOOL	ALGERIA	kg			5.10		
			TUNISIA	kg				1.88	
			ISRAEL	kg			10.50	7.31	5.26
			PERU	kg				6.00	
		MOZAFATI NOT DETERMINED	IRAN	kg				3.30	
			IRAN	kg					3.49
		STONELESS	TUNISIA	kg					1.70
			TUNISIA	kg				2.75	
GINGER	Sea		BRAZIL	kg			1.95	1.21	
			CHINA	kg		1.33	1.00	1.13	1.48
			PERU	kg				2.38	
			THAILAND	kg				2.38	1.20
GUAVA	Air		BRAZIL	kg					6.97
	Sea		BRAZIL	kg					2.88
KUMQUAT	Air		BRAZIL	kg					4.35
LIME	Air		MEXICO	kg			5.00		
	Sea		BRAZIL	kg	1.28	1.33	1.95	1.45	1.20
			GUATEMALA	kg				1.06	1.15
			MEXICO	kg	1.33	1.44	1.90	1.45	1.45
LITCHI	Air		MADAGASCAR	kg			3.00		
			MAURITIUS	kg			5.00		
			REUNION	kg			5.00		
			SOUTH AFRICA	kg			3.75		
	Sea		MADAGASCAR	kg	1.80	2.00	1.75	2.63	3.23
			SOUTH AFRICA	kg				3.50	2.62
MANGO	Air	KENT NAM DOK MAI	PERU	kg			5.85	5.00	
			THAILAND	kg				10.00	
	Sea	ATKINS	BRAZIL	kg	1.38		1.34	1.69	1.46
			SOUTH AFRICA	kg				2.00	
		KEITT KENT	BRAZIL	kg				1.13	
			BRAZIL	kg			1.41	1.13	
		PAL MER	PERU	kg	1.38	2.00	1.57	1.69	1.89
			BRAZIL	kg			1.63	1.38	1.31

					EUROPEAN UNION - EUROS				
					Germany	Belgium	France	Holland	UK
MELON	Air	CHARENTAIS YELLOW CANTALOUPE	DOMINICAN REP.	kg			4.65		
			BRAZIL	kg			1.43	1.50	1.56
			HONDURAS	kg				1.54	1.72
		CHARENTAIS GALIA	BRAZIL	kg				1.63	1.68
			BRAZIL	kg			1.20	1.47	1.43
			HONDURAS	kg				1.58	1.66
		HONEY DEW	ISRAEL	kg					1.05
			BRAZIL	kg			1.00	1.01	1.08
			COSTA RICA	kg			1.10	1.35	1.48
		PIEL DE SAPO	BRAZIL	kg			0.88	1.00	1.09
			COSTA RICA	kg			1.00	1.20	1.14
		SEEDLESS WATER WATERMELON	BRAZIL	kg			1.05	1.02	0.93
			BRAZIL	kg				0.63	0.71
			COSTA RICA	kg			0.90	0.98	1.01
			PANAMA	kg			0.85	0.98	
PAPAYA	Air	FORMOSA NOT DETERMINED	BRAZIL	kg	2.56			3.07	
			BRAZIL	kg	3.93	3.64	3.40	3.61	4.77
			THAILAND	kg				5.25	
	Sea	FORMOSA NOT DETERMINED	BRAZIL	kg				2.22	
			BRAZIL	kg					1.75
			COLOMBIA	kg					2.29
		SOLO	ECUADOR	kg				2.50	1.60
			ECUADOR	kg				2.00	
PASSION FRUIT	Air	NOT DETERMINED PURPLE	COLOMBIA	kg	4.56	5.50	6.25	5.50	5.19
			KENYA	kg		5.38			4.90
			SOUTH AFRICA	kg		5.50	6.80	5.75	
			VIETNAM	kg			9.00		
		YELLOW	ZIMBABWE	kg				5.50	
			COLOMBIA	kg				7.94	
			ECUADOR	kg				8.38	
PHYSALIS	Air	PREPACKED	COLOMBIA	kg		10.00	10.75	7.81	9.21
	Sea		COLOMBIA	kg	5.94				
PINEAPPLE	Air	NOT DETERMINED VICTORIA	GHANA	kg		2.40			
			MAURITIUS	Box				13.50	
			MAURITIUS	kg			3.90		
	Sea	MD-2	REUNION	kg			4.35		
			BRAZIL	Piece					1.03
			COLOMBIA	Box				11.83	
			COSTA RICA	Box	11.58	11.13		11.46	15.48
			COSTA RICA	kg			1.04		
			COSTA RICA	Piece					1.65
			COTE D'IVOIRE	kg			1.11		
			PANAMA	Box				12.25	
			PANAMA	kg			1.00		
PITAHAYA	Air	RED	INDONESIA	kg				8.67	
			ISRAEL	kg				6.38	
			VIETNAM	kg				7.50	
		YELLOW	ECUADOR	kg				9.40	
PLANTAIN	Sea		COLOMBIA	kg			1.35		
			COSTA RICA	kg					1.51
			ECUADOR	kg			1.35	1.09	
RAMBUTAN	Air		INDONESIA	kg				8.13	
			THAILAND	kg			8.50		
SWEET POTATO	Sea	NOT DETERMINED	COSTA RICA	kg				1.25	
			EGYPT	kg			0.97		0.74
			HONDURAS	kg				1.13	1.41
			ISRAEL	kg				1.25	1.31
			SENEGAL	kg					1.61
			HONDURAS	kg				1.25	
		ORANGE RED/RED RED/WHITE WHITE	HONDURAS	kg				1.25	
			HONDURAS	kg				1.45	
			HONDURAS	kg			1.20		
			HONDURAS	kg					
TAMARILLO	Air		COLOMBIA	kg				7.20	

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

# Information... your weak link?



**Reefer Trends is an independent news and information provider, financed exclusively by revenue from subscriptions.**

First published in 2003, it provides a number of services for users along the reefer logistics chain: the Reefer Trends weekly charter market brief is the benchmark publication for the specialist reefer business – it tracks the charter market for reefer vessels, as well as fruit and banana production and market trends that influence charter market movement.

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