A Study of the Mango Market in the European Union

ABSTRACT

This study describes the mango market in the European Union, the largest importer of Brazilian mangos. For such, we find support in the in-depth interview method for obtaining information from importers, wholesalers and supervisors of horticultural sectors of supermarkets and fruit shops in Spain as well as import agents from other EU countries. The results showed an upward trend for mango consumption in the European Union. With regard to the market behavior of the main mango varieties, we realized that Tommy Atkins mango is classified in two stages of sales life-cycle: maturity and decline; Kent mango is found to be ascending in the maturity stage; Haden and Keitt mango are stabilized in the maturity stage, whilst Palmer, Maya and Shelly mango are classified in the growth stage. The study also showed four well-defined segments in the EU fresh mango market: 1) consumers who priorize the relationship between quality and competitive prices; 2) 'premium-product' consumers; 3) organic product consumers; and 4) consumers of the pre-peeled, ready-to-eat product.

KEY WORDS:

Mango. Marketing. Exports. The European Union.

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1 – INTRODUTION

Brazil is undoubtedly a great potential protagonist in the scenario of the international fruits and vegetable trade market. Because a great variety of fruits can be produced in various times of the year, the country holds comparative advantages in relation to other producing countries. However, the lack of knowledge of certain aspects of the production chain – from the exploration of varieties that are more appropriate for foreign consumption to activities connected to commercial strategies such as determining main markets, identifying market segments, identifying products' sales life-cycle in their destination markets and a better understanding of consumer preferences – has resulted in criticism to our products for not meeting clients' demands.

In the above described context, one of the Brazilian fruits that pose the greatest demand for market studies in the international scenario today is the mango fruit. The seasonality in supply, our product's greatest comparative advantage in that market, suffers constant threat of reduction in the face of the technological advances being experienced by other important players. Moreover, in Brazil as well as in other competing mango-exporting countries, like Peru and Ecuador, there are millions of hectares of mango crops that haven't yet reached full production. As this market is regulated mainly by the law of supply and demand, the major reflection of such phenomenon is clearly the demand for price reduction and greater quality. In order to respond to this demand while maintaining its competitiveness – mango exploration is one of the leading economic activities in Brazil's semiarid region, notably in the fruits production center of the Vale do Submédio São Francisco – it is indispensible that mango producers and exporters have detailed knowledge of these markets' characteristics, mainly in what regards the distribution organizational structure, product sales life-cycle, market segmentation and consumer trends.

It is thus justified that studies shall be carried out on the international trade of the mango product, supported by this fruits' second position in the rank of Brazilian fruits and vegetable exports, with a volume of 133.724.756kg shipped to the international market in 2008 (BRAZILIAN INSTITUTE..., 2009). Nevertheless, the fact that Brazil concentres its exports in a single variety (Tommy Atkins) represents a threat in the international market, mainly in the European Union, its major import market. Given the fact that some community markets are increasingly controlled by major distribution companies (supermarket chains) there is an increasing trend for reduced purchase of the Tommy Atkins variety.

The European market, specifically the EU market, has been elected as an item of analysis in the study of the Brazilian mango international market because it constitutes the major destination of the country's mango exports. The choice for Spain as the base-country in this study finds support in the fact that the country is the only in Europe that imports the product and acts as a supplier to the European Union also, a condition that grants trade operators over there a significant degree of knowledge of market structure and operations.

The major goal of the present investigation is the study of the mango market in the European Union. Specifically, we aim to identify the operational structure, growth trend, seasonality in supply, market segmentation and sales life-cycle stages of the major varieties of mangos traded in the international market.

2 – MATERIAL AND METHODS

The method chosen for this study was the in-depth interview, or problem-centered interview, for various authors like Ortega (1994); Malhotra (2008) and Esteban Grande and Abiscal (2009). This method allows the respondents to freely express their opinion of the theme – considered an essential condition for an adequate investigation of exploratory nature. According to various authors in the field of market investigation, like Kinnear and Taylor (1998); Trespalacios; Válques and Bello (2005) and Malhotra (2008), in exploratory studies aimed at determining an approximate view of the target market operations, one of the most commonly recommended methods for data collection is the in-depth or experience interview. It is a qualitative research method where the researcher is interested in the point of view of a representative and selective sample of respondents that are associated with the theme under investigation and chosen for their familiarity with the theme and capacity to express their answers clearly. The approach is commonly open-answer interviews whose main advantage is the possibility to produce precise and specific information.

The questions in our interview encompass diverse aspects that identify the market of fruits and vegetable product, such as: growth trends, seasonality in supply, knowledge of the life-cycle of the main varieties, factors interfering in competitiveness, consumers taste and preference, market segmentation and consumer assessment of the fruit in the moment of purchase.

The samples in this study were composed of Spanish importers of fruits and vegetable products, trade operators in various EU countries, wholesalers of the Mercasa chain and supervisors in charge of the horticultural sectors of chain supermarkets. It is important to add that being this a qualitative research technique there is no formula to define the size of the sample; thus, researchers generally carry as many interviews as are necessary for collecting the essential data, or when they feel no new data is being further generated (MALHOTRA, 2008).

The use of agents in distribution chains to give their opinion on a product behavior in a given market finds support in the views of authors like Rivera (1995), Karsaklian (2000) and Lambin (2003), who defend the theory that product quality is determined by the client or user. According to these authors, all segments of the trade channel are representative of the end client once precise knowledge of clients' preferences and demands is indispensible in order to produce a competitive product. This line of thought is coherent with the business marketing philosophy that holds that the knowledge of client's preference, demands, and even expectations by all segments of the organization as a fundamental condition for the success of a company (LAZOSKI, 1998; MUNUERA e RODRÍGUEZ, 2007; KOTLER, 2009).

All interviews were carried out between June and August of 2009 in the facilities of the respondents' companies, what allowed the researcher to obtain further relevant data for the study. According to Godoy (1998), the best way to collect qualitative data, be it recorded or through note taking, is to do it in the context where the phenomenon under investigation (or part of it) occurs.

Because this is an investigation of exploratory nature, in which the majority of the answers depend on the respondents' perception of the phenomenon, we realized an exclusively descriptive-qualitative analysis, granting special relevance to the analysis of coincident answers. We also sought to compare our analysis results with those of other empirical studies or report data as a means of strengthening or contradicting them.

3 – RESULTS AND DISCUSSION

3.1 – The Mango Market in the European Union: Behavior Trends

With regard to mango consumption in the European Union, the greatest import market of Brazilian mangos, an upward trend was perceived by nearly the unanimity of the trade operators of the main mango import and sales companies interviewed for this study. On the other hand, it is important to mention that there was no opinion favorable to its reduction – the only importer who argued diversely from the group believes the trend is for stability; another clear indication that among the respondents there is no negative opinion regarding the future behavior of the EU mango market.

The most common factors mentioned by the respondents to explain the upward trend for mangos in the European market are the year-round supply throughout the distribution chain and their own company's sales performance. In reference to the first factor, the majority is of the opinion that in the main consumer markets mangos are progressively changing their image from that of an exotic fruit to that of a fruit for consumers in general. Respondents explain that in the last decade mangos were sold only in the major supermarket chains and displayed on shelves destined for exotic fruits whereas today the fruit can be found in all fruit and vegetable retailers, from gourmet shops to neighborhood greengrocers.

On the other hand, it was observed that the very growth in sales volumes registered by these respondents' companies contributed to their optimistic views on the evolution of that market. It is relevant to say that the sales increase was observed by all segments of the distribution chain, i.e., importers, wholesalers, trade operators and supervisors of the fruits sector in major supermarkets.

In reference to the economic viability of mango exports to the market under study, the majority of respondents find that even when considered the relevant fall in price in the last years due to increased export volumes, it tends to continue a profitable activity provided the mango is of high quality. Because it is a highly competitive market, there will soon be no room for poor quality mango, say our respondents. This forces improved efficiency of the production chain and sales strategies resulting from good agricultural practices, increased production and reduced prices that enable competitive prices and better quality products.

The significant increase in mango imports from markets outside the European Union community is clear: from 139,955 to 227,977 tons registered in the period from 2002 to 2008 (COMISION..., 2009). This documental data serves to strengthen the dominant view among our respondents regarding the mango upward trend in the EU market. Moreover, it is important to highlight that besides a 66.5% rise in that time period – with the exception of 2004, when great part of Brazil's mango production was lost due to climate constraints – there was no record of decline in the import volume.

In his analysis of the fresh fruit market in Europe, Ramos (2009) detected further evidence that reinforces our study. The author holds that today mangos have the second fastest-growing sales rate among tropical fruits in Europe, thanks to the wide distribution channels that have allowed for consumers of all social levels in the main markets to get familiar with the product.

Furthermore, it is pertinent to say that despite their expressive sales growth in the EU the fruit still has a small market share when compared with the total volume of imports into that market. Of the total volume of fruits traded in the EU (inter-EU imports and imports from countries outside the EU) in 2008, approximately 29.5 million tons, mangos account for just 1.18%. A figure that suggests exporting countries must design exceptional programs for the promotion and dissemination of the fruit in these community markets. In that sense, the Brazilian Fruit Institute (Ibraf) and the Brazilian Export and Investment Promotion Agency (APEX-Brazil) are developing programs involving tasting in European main supermarket chains and fostering the participation of mango producers and exporters in important trade fairs for fruits and logistics of the European Union market.

3.2 – Commercial Performance of the Major Mango Varieties in the European Union

In regard to the Tommy Atkins market share in the EU, the majority of respondents hold that this variety still has a significant share of the market because it best endures transportation and has longer shelf-life. However, a significant number of respondents argue that this variety – of largest sales volume in the market under investigation – is presently experiencing a slow and progressive decline.

To some extent these opinions reveal significant contradiction among respondents that reflect the current situation of the Tommy Atkins mango in the EU market. The most numerous group, in the majority Spanish traders, based their views in the sales increase of that variety in the Spanish market, especially in the small and medium supermarket chains, discount stores, and neighborhood greengrocers. As they see it, the price reduction, the expressive increase of the South America emigrant population and the Spaniards' improved knowledge of the fruit in the last years are the factors accounting for that market behavior. As for those who hold the Tommy Atkins mango is in decline, a group also comprised of some Spanish traders, the argument is that in important markets of fruits and vegetable products in Europe, such as the French market, the sales volume of Tommy Atkins mangos are gradually falling due to their inferior organoleptic qualities when compared with other varieties. For these respondents, the fibrous flesh and little sweet flavor characteristic of Tommy Atkins mangos is what mostly drives consumers into buying other mango varieties.

In regard to the Market behavior of the Kent variety, the second in sales volume in the EU, the major view among trade operators is that it is an upcoming variety in the European markets. According to them, this variety, air freighted and sea freighted to Europe, is more suitable for long-distance transportation and thus enables sales in all segments of distribution. They hold its growth is expected to continue due to its very good flavor.

The major arguments relating to the behavior of the Haden variety in the EU market concern it being regarded by consumers and traders as a high-quality fruit. Respondents point out an upward trend in trade in the European markets despite its lower sales volumes in comparison with the varieties analyzed so far, resulting from the fact that it demands greater care along the transportation and distribution process. Nonetheless, Haden mangos reach the highest sales price among the varieties traded in that market.

The majority of respondents say the Keitt variety behavior in the EU market is similar to that observed for the Haden variety once it is also considered a high-quality product. However, due to its predominant green color, consumers often have difficulty assessing ripeness and reject the product believed to be unripe.

As for sales, respondents say Haden reaches the highest price, followed by Kent and Keitt, traded at practically the same price, and lastly by Tommy Atkins.

It is relevant to mention that the EU fruits and vegetable market is quite homogeneous and, thus, aside from these most traditional and commonly traded varieties, significant volumes of other species also enter the market, like Alfonso and Julie, which stem mainly from Pakistan and India; Zill, from South Africa; and Osteen, produced in Spain. The premium-import varieties – Maya (Israel), Shelly (Israel) and Palmer (Israel, Brazil) – destined to upmarket segments are also worth mentioning.

We now present the market behavior results for the main mango varieties traded in the EU assessed through the Product Life-Cycle marketing technique, a concept used in studies to assess the dynamics of a certain product in a given market.

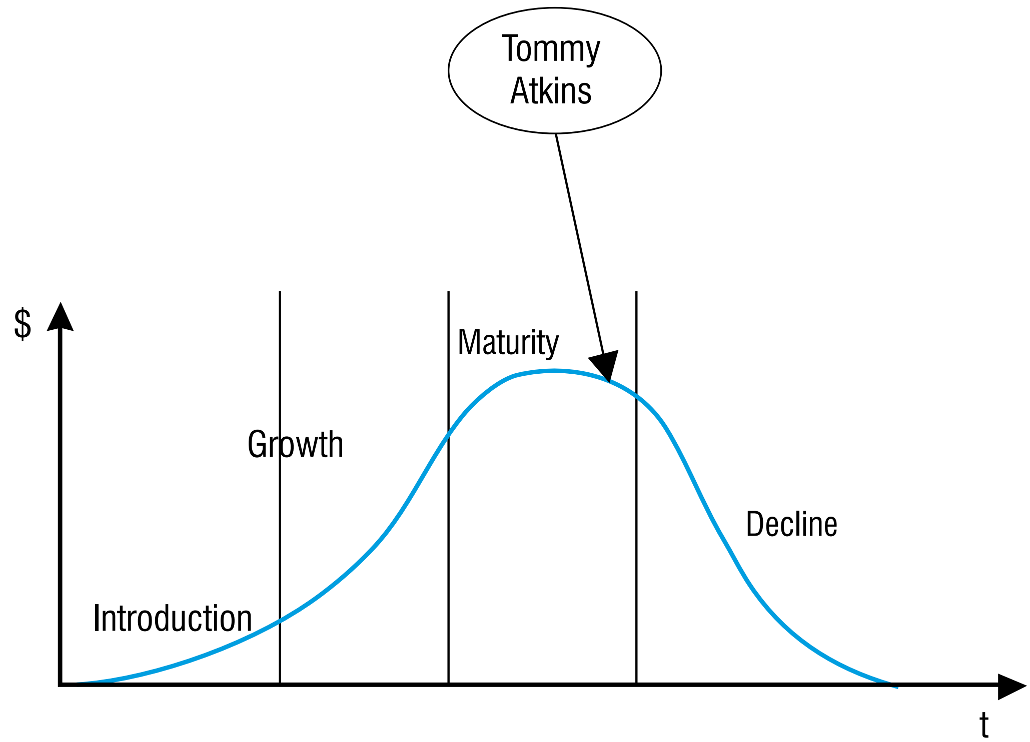
The majority of respondents hold Tommy Atkins' sales will continue to grow in the European market whereas a small but significant number (30%) find quite the contrary: slow sales drop in the EU market resulting from its inferior taste qualities. According to the first group's point of view, this species' life-cycle in the European market is adequately classified in the maturity stage. In this stage, the longest in a product's sales life-cycle, sales continue to grow, though at lower rates. In the viewpoint of market theorists like Lambin (2003) and Kotler (2009), in this stage benefits stabilize or fall and the product is more vulnerable to competition (Graph 1). In the opinion of respondents in the second group, influenced mainly by this species' performance in the French Market, sales are declining. In this stage, sales are reduced in absolute terms and the benefits also fall expressively (Graph 2).

Even considering that the sales figures registered by the EU Foreign Trade Commission pertain to the aggregated sales volume, i.e., there is no record of individual species' behavior; they contribute greatly to explain the results of the present investigation in regard to the Tommy Atkins performance once it accounts for nearly 90% of Brazilian mango exports. The figures supporting the majority of respondents' arguments stem from import data on the EU macro-market as well as other important community markets.

Between 2002 and 2008, mango imports from Brazil rose from 65,049 tons to 94,470 tons, representing a 45% increase. In the UK, largest consumer market for mango in the EU, imports went from 6,012 to 10,277 tons, accounting for a 70% increase. Nevertheless, the best sales performance of Brazilian mangos occurred in the Spanish market, a 207% jump from 3,064 to 9,421 tons. The figures that support the minority group's viewpoints represent imports into the French market, which plunged from 2,205 tons to 749 tons in the same period, an expressive 66.44% decrease.

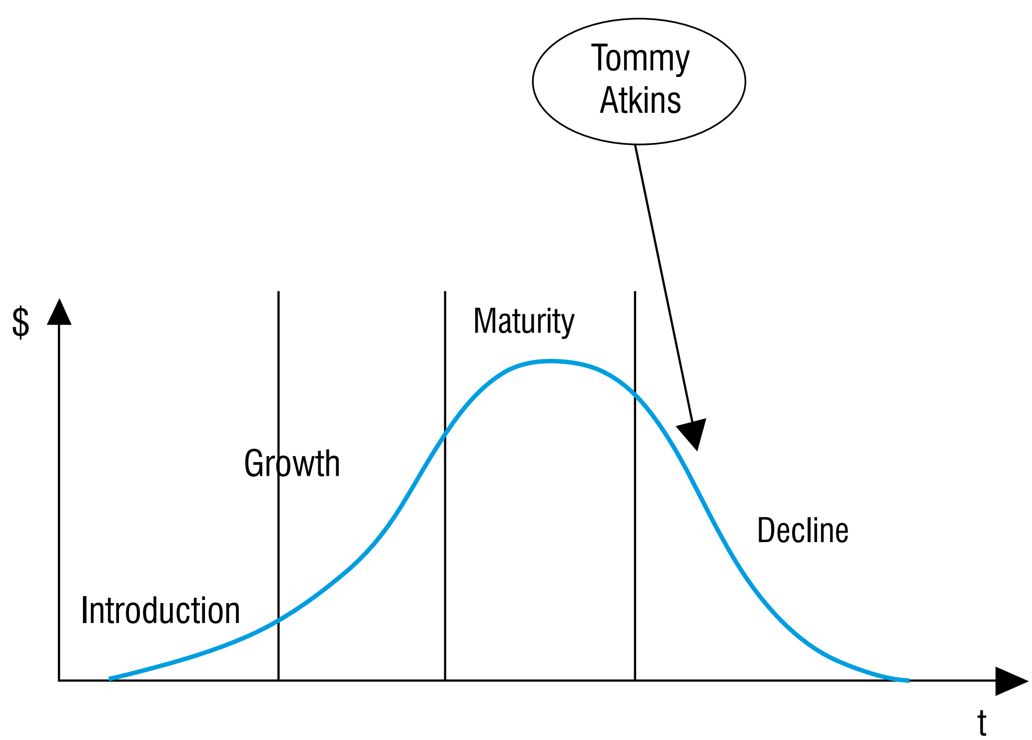
According to the international marketing literature, like the contributions of Munuera and Rodriguez (2007) and Santesmases (2007), it is evidently normal for a product to be classified in distinct stages of its sales life-cycle in different markets, mainly due to its less desirable or well-known aspects in some markets. Based on that evidence, the cited authors consider determining a product's sales life-cycle of utmost importance in the study of foreign market trends.

Kent mangos, a variety most respondents argue will continue to grow in the EU market, are classified in the maturity stage. It is worth mentioning that for most of these trade operators it is in the beginning of this stage and there is a lot of room for significant growth in sales rates (Graph 3).



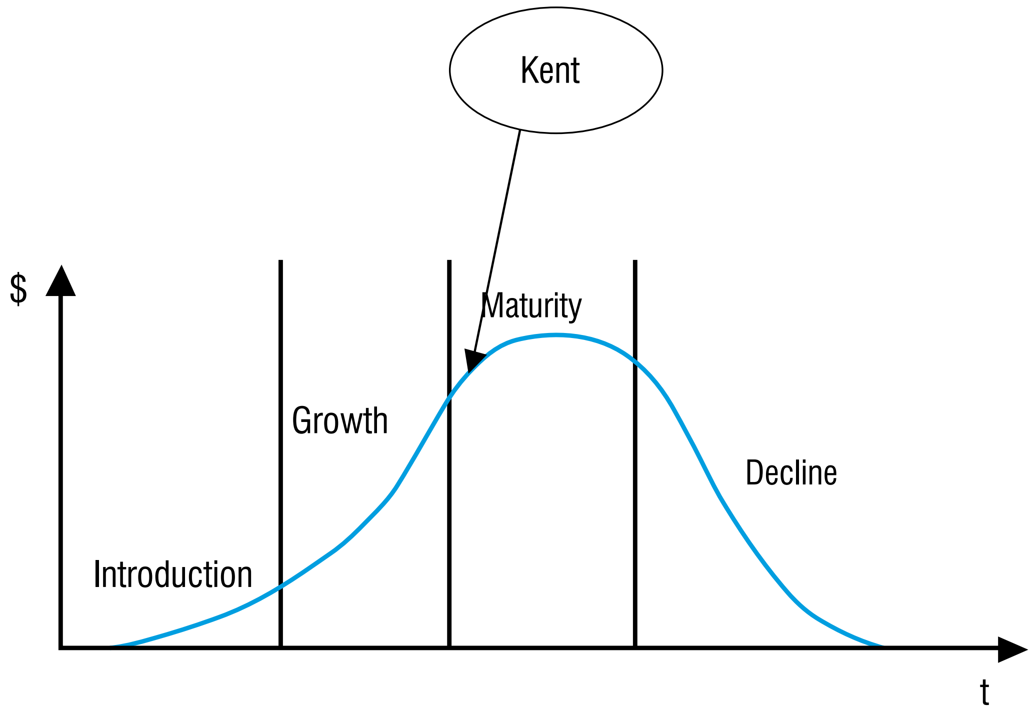
Graph 1 – Tommy Atkins life-cycle stage in the EU Market according to the views of the majority of European traders.

Source: Developed by the authors based on research data.



Graph 2 – Tommy Atkins life-cycle stage in important European community markets according to the views of a representative group of European traders.

Source: Developed by the authors based on research data.



Graph 3 – Kent life-cycle stage in the EU market according to the views of European traders.

Source: Developed by the authors based on research data.

The Kent variety experiences the same situation as Tommy Atkins, but in different countries. As stated by the Peruvian Association of Mango Producers and Exporters (APEM), 84% of that Andean country's exports are of the Kent variety. Therefore, again the data registered by the EU Foreign Trade Commission contribute greatly to the interpretation of our results. That Commission's data for the 2002-2008 period show that imports from Peru into the EU rocketed from 10,848 tons to 49,702 tons, representing an astonishing 358% increase. The data also make evident the exceptional growth of Peruvian mangos in these community markets. In the UK, the largest mango market in Europe, as previously cited, for instance, the imports of Peruvian mangos rocketed from 1,013 to 8,494 annual tons, a vertiginous 739% increase.

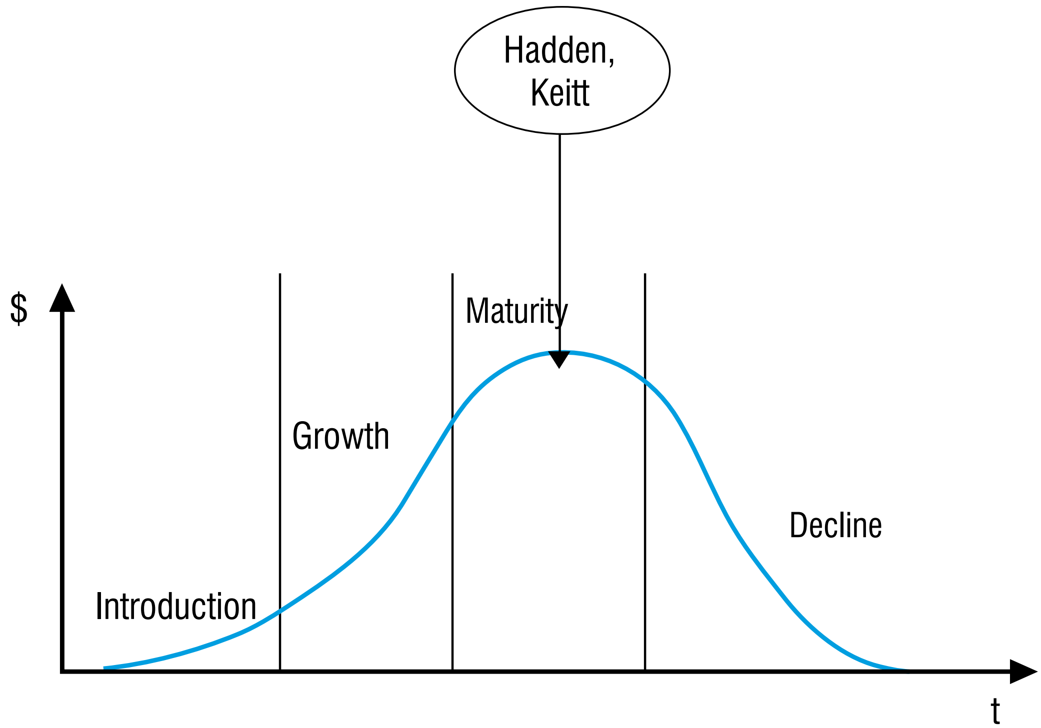
The Haden and Keitt market share continue to grow due to their good quality, as state the trade operators in our study. As for their life-cycle behavior, both species are classified as stabilized in the maturity stage, with continuously rising sales volumes in absolute terms, though at reduced rates (Graph 4).

The premium varieties – Palmer (Brazil and Israel), Maya and Shelly (Israel) –, appointed in the study as fast-growing species in the market under analysis, are classified in the growth stage, characterized by rising demand and better benefits for producers and exporters (Graph 5).

Competitiveness in the EU mango market

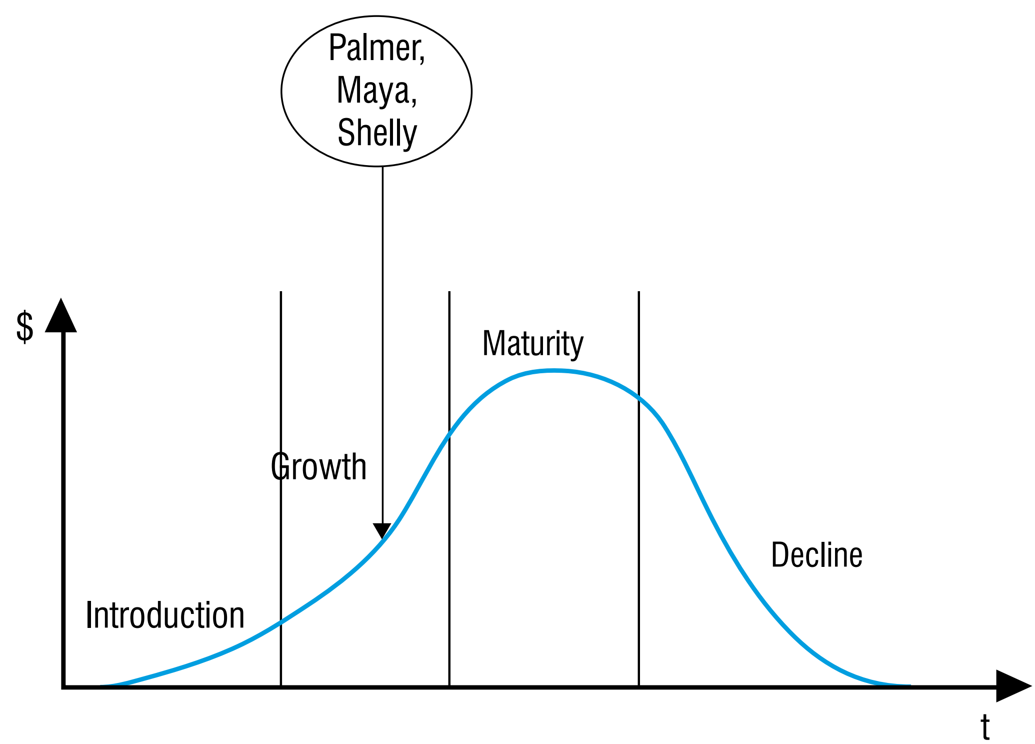
The dominant argument among the respondents in our study concerning competitiveness in the EU mango market is that the quality of products and services is the main issue. In fact, as the market is regulated by the law of supply and demand, price is always the protagonist factor; however, in times of greater or lower demand alike the best quality products in the eye of the consumer always reach the highest prices. Quality of mangos is determined by both appearance (shape and color) and internal attributes (flavor, aroma, texture, and lack of biotic and abiotic components).

The trade operators in our study hold that in the present scenario of the fruits and vegetable market in the EU, with distribution control in the hands of the



Graph 4 – Haden and Keitt life-cycle stage in the EU market according to the views of European traders.

Source: Developed by the authors based on research data.



Graph 5 – Palmer, Maya and Shelly life-cycle stage in the EU market according to the views of European traders.

Source: Developed by the authors based on research data.

main supermarket chains and trade platforms, there is great demand on producers and exporters regarding the quality of their products. They say major clients define requirements in sales agreements that concern the product trajectory from crop planning to delivery and demand that the quality be sustained all throughout the agreement in effect. Service quality, represented mainly by regularity and punctuality in delivery and type of packaging, is yet another dimension of the quality demanded by purchasing units – administrative figures created by distribution to manage this trade. It is relevant to mention that respondents explain this procedure is valid for direct purchase from mango exporters by main supermarket chains as well as for the most common situation, when such organizations delegate the purchase to importers themselves.

Our findings regarding competitiveness in the EU mango market were also observed by Merino (2004) in his study on the behavior of the fruits and vegetable market in the EU. The author concluded that due to great competitiveness among the major distribution chains of agro food products in affluent countries, like Germany, the trend is towards greater pressure on producers and exporters in respect to price and quality by these organizations – which definitely impose market criteria – once the goal is to fully meet consumers' tastes and preferences at competitive prices.

Explanation to why the major European retailer chains impose such rigid demand on fruit and vegetable producers and exporters for top quality products and services is found in Del Pozo et al.'s (2008) arguments regarding competitiveness in the distribution segment. For most of these organizations, the authors say, fruits and vegetables are very important to their trade units once they represent a mechanism for client rotation. Furthermore, these authors hold that the quality of the product guarantees an image transfer from the fruits and vegetable section to the entire business; i.e., when consumers build their image of quality retailers, the image they have of their horticultural products is a determinant factor.

In their study of the Peruvian mango exports The Ministry of Foreign Trade and Tourism of Peru (2007) found that as a result of the expressive increase in the number of suppliers as well as in the volume supplied the negotiation power of the major distribution chains in the European and North American markets has become even greater: changing suppliers has become relatively easy.

Giambanco (2009) has also analyzed the EU fruits and vegetable market in the current scenario of global economic crises and holds that fruit producers and exporters shall indeed effectively manage their production, handling and trade processes seeking to reduce costs, however, not in detriment of quality. According to this market analyst, the situation may hold favorable prospects for businesses to increase their share in markets that demand top-quality products since prices are indeed reduced. However, the reduction in the price of products possessing the attributes that best meet consumers' preference is lower.

Further reasons for the great pressure that major agro food distribution chains put on fruit exporters regarding quality are argued by market specialists of the Centre for the Promotion of Imports from Developing Countries (2009a), who say one of the main factors underlying such behavior is European consumers' high awareness of the concept of quality. Besides the product's visual and gustative attributes aggregated in the concept, the notion of quality today encompasses issues pertaining to the organizations, food safety, environment, and even social themes. The movement for rigid quality control resulted in the EurepGAP certification – today known as GlobalGAP. Nevertheless, many supermarket chains in the EU are currently demanding that fruit exporters have other certification besides the GlobalGap, for instance, Risk Control (HACCP), ISO 14000 and the British Retail Consortium (BRC). The trend is for these organizations to demand even greater transparency and sustainability all throughout the process.

3.3 – Size and Shape of Consumers' Preferred Mangos

The majority of trade operators interviewed point out that, in general, EU mango consumers prefer medium-sized mangos, being the 8 and 9 caliber fruit the most well accepted. There are naturally some exceptions to the rule in more specialized markets which offer aggregated value to the fruit in its destination point. As for shape, the dominant view among the respondents is that there is no well-defined preference – all shapes are accepted, from the more round varieties like Haden, to the flatter ones, like Palmer. However, some state that flatter varieties like Palmer and Osteen, a trait that facilitates peeling, enjoy greater marketing advantages.

With regard to the preferred size among consumers in the EU market, our findings confirm those obtained by Ramos (2009) in his study of Peruvian mango exports. The author points out differences regarding size that exist between the two major import markets: the Americans prefer mangos within the 6-9 range whereas Europeans prefer the fruits within the 8-9 range.

3.4 – Consumser Appreciation of the Mango Attributes in the Moment of Purchase

The dominant opinion among the trade operators interviewed in regard to consumer appreciation of the mango fruit in the moment of purchase is that European consumers, in general, prioritize color – for them, it is the attribute that best translates ripeness. It is important to add that respondents find the European consumers have difficulty to assess ripeness and thus frequently reject the orange-reddish skin mangos thinking they are over-ripe. Appearance also deserves considerable importance once the absence of external damage and fruit uniformity – easily perceived by consumers – are determinant to these traders' choice of the fruit in order to meet consumers' demands. Pulp firmness, size and shape are also taken into consideration.

According the majority of these respondents, internal attributes such as pulp fibrousness, sweetness, and aroma are fundamental for a full perception of this product's quality. However, these are characteristics the consumer can only assess after the product has been bought; thus, they influence traders' decision only in future purchases.

The Centre for the Promotion of Imports from Developing Countries (2009b), in its study on the EU mango market, further indicates color and appearance as the most important factors in the decision to purchase the product. The study also confirms the difficulty to assess mango ripeness as one of the major barriers for consumers in the moment of purchase.

Elhadi (2005), who has also investigated the mango international trade, holds that the major reason for the reduced number of varieties traded in the international market (approximately ten species) results from the fact that most Asian and African varieties are of green skin even when ripe, what poses significant obstacles to buyers.

With respect to the weight of mangos' organoleptic qualities on buyers' decisions, as identified in our study, it can be said they are in agreement with the findings of various studies on consumers' assessment of fruit products, as the one carried out by Echeverria; López e Lara (2008). These authors argue that the predominant concept of quality at market level is determined by the consumer, and as the act of consuming a fruit is a pleasure-generating activity, flavor is the determinant factor in consumers' definite acceptance of the fruit, even when price and visual and nutritional characteristics are considered.

3.5 – Mango Consumption Preferences in the European Union Market

As would be expected from the very configuration of the EU macro market, the unanimous opinion among our respondents is the European mango market is heterogeneous when regarded consumer preferences and is highly influenced by the preferences of the immigrant population (Asians, Africans and Latin Americans) which reflects directly on the greater demand for certain species. In regard to main community markets, they stated that in the UK, largest consumer market in the EU, consumers enjoy both red- and green-skinned varieties. In France, the second consumer market for mango there is a preference for green skin mangos, followed by the red-skinned varieties. In the Netherlands, the main importer and distributer in the EU macro market, consumer preference is for red-skin species, as in some northern European countries, like Germany and Denmark. In Spain, a producing country as well, red-skinned mangos are more appreciated. Presently, the major suppliers of red skin varieties are Brazil and Peru whereas the green-skinned mangos come mostly from Pakistan, Ivory Coast and Senegal.

The Centre for the Promotion of Imports from Developing Countries (2009b) also states that in the UK, consumers of 28% of mangos traded in the EU, the red color varieties are the preference of British consumers whereas the green color varieties are the preferred species in the Indian and Pakistani communities, numerically highly representative in that country and the propellers of an increased demand for green-skinned mangos.

In our visit to the major retailers of fruit and vegetable products in Spain, represented by the Mercasa network (Mercamadrid, Mercabarna, Mercavalencia), to distribution platforms and main supermarket chains, we identified that in the fastest growing market in the EU in the last seven years, the preference is for the red skin varieties, being the South American community held accountable for the increase in demand for these mangos.

3.6 – Seasonal Sales Structure and Trade Channels

With reference to the seasonality in sales, all our respondents state the mango market is saturated in the period between April and June due to the competition with European seasonal fruits such as peaches, cherries, strawberries, and melons, among others, and, therefore, prices fall. On the other hand, from November to March, when the fruit supply is reduced, prices recover. The respondents argue that such seasonal market behavior favors mainly South American suppliers (Brazil, Peru and Ecuador) once they deliver their mangos in the period of high prices. Nevertheless, they point out that the continual increase in supply especially by Brazil and Peru may produce errors that may occur deriving from the lack of coordination of deliveries entailing significant fall in price due to excessive supply.

Regarding trade channels, our respondents also hold that most of the mangos imported into the EU, shipped to the ports of the Atlantic Ocean and the North Sea (Rotterdam, Ambers, Le Havre, Cherenses and Hamburg), are sent straight into import warehouses for quality inspection. After that, the major part goes to the main supermarket chains and the remaining part is delivered to wholesalers in the distribution units, as is the case of Mercamadrid. From there, the product is distributed to small supermarket networks, gourmet fruit shops, neighborhood greengrocers, and convenience stores. However, some major supermarket and retailer chains also act as importers, purchasing the product directly from exporters. With regard to the mango trade, importers take an 8% margin and wholesalers, 10%.

It is worth mentioning that during the interviews, carried out in the respondents' companies, we could identify through the data collection instrument as well as by direct observation that the airfreighted mango, which, according to the trade operators, is a fast growing trend, also goes through the same process with the only difference that in the retail segment sales are concentrated in gourmet shops and hypermarkets.

Data from the Centre for the Promotion of Imports from Developing Countries (2009b) show the average delivery of that fruit in the European market is approximately 190 containers – over 80% of which reach the consumer through supermarket chains.

In regard to the seasonality of the mango market in the United States and European Union, Vallejo and Quingaisa (2005) also point out the advantages in favor of producing countries in the Southern Hemisphere once they import the product in the period of the year when prices have been historically higher. The authors emphasize Peru's privileged situation among the Andean producing countries: besides supplying the market in the above mentioned period of year, the country offers a product of better trade quality.

In his analysis of the behavior of mango exports into the EU market, Fávero (2008) presents data that confirm these traders' viewpoints. This author holds that even when the market has historically reduced offers resulting from the numerous containers shipped in from Brazil and Peru, there are weeks when the market is saturated and, consequently, the product suffers a significant price drop. Furthermore, he argues that besides the fall in prices an expressive reduction of the quality is also observed once the mango is a highly perishable fruit. The author even suggests that in order for these countries to obtain better economic gains from their mango sales, they should reduce the volume of imports during certain weeks of the commercial year, more specifically between the 45th and 51st weeks (mid-November and December), when, in general, the volume supplied by Brazil and Peru together exceed 300 containers.

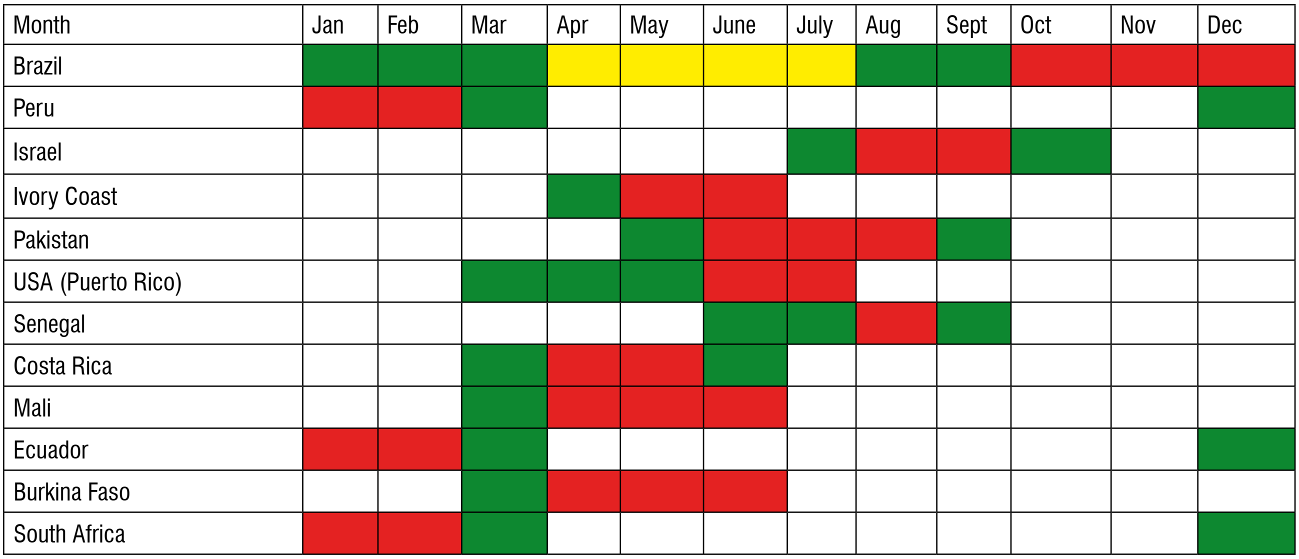


Chart 1 – Calendar for the Annual Supply of Mangos in the European Union Market Source: Cirad (2009).

Source: Cirad (2009).

Legend: Yellow – small quantities; green – average quantities; red – large quantities.

It is also important to note that as Brazil has developed technologies that enable year-round exports of the fruit between January and March, the country supplies average quantities to the EU market whereas between April and July reduced quantities are traded. From August to September, average quantities are again supplied and from October to December, a great quantity of the product is supplied (see Chart 1, designed with data from 2009 of supply into the EU by mango export countries).

Still in regard to seasonality, it is important to highlight Spain's privileged situation as a producing country. Because it is close to consumer markets, the Spanish mango, produced in microclimate areas in the Malaga and Granada islands, is harvested at its optimum point and traded at expressively higher prices in comparison with the sea freighted mangos and expressively lower prices in comparison with those transported by air. Aware of this competitive advantage, Spanish producers, who used to grow only the Osteen variety, traded basically in the months between August and September, are now diversifying their crops including the Haden, Kent and Keitt varieties, which enter the EU markets in the period from October to November.

3.7 – Segmentation of the Mango Market

With respect to market segmentation, considered by the major marketing scholars as the main strategic marketing instrument, our respondents' dominant view is that there are well defined segments in the European Union mango market today. They argue the largest segment is that comprised of consumers of average purchasing power, who buy the sea-freighted mangos; however, price is the major factor in their decision to buy the product. The distribution channels used by this segment are supermarkets, hypermarkets, discount supermarkets and neighborhood greengrocers.

Another important segment is that of consumers of the air-freighted mangos. The price in that segment is nearly three-fold higher compared with that of the mango transported by ship. These premium products reach ripeness in the tree and are harvested when their organoleptic characteristics reach their optimum point. This segment's distribution channels are hypermarkets and gourmet fruit stores. According to our respondents, as the properties of the mango fruit are gradually assimilated by the European consumers, there is a clear upward trend for increased demand. The main varieties traded in this segment are Haden, Palmer, Maya and Shelly. However, this segment also consumes mass-consumption varieties, especially those that consumers find of high gustative quality.

Another segment of the fresh mango market in the EU is that comprised of consumers of the organic or ecological mango. As a result of the European population's excessive concern with their body health and the health of the planet, this segment is growing at significant rates. The main distributions channels in this segment are hypermarkets, gourmet fruit stores and supermarkets.

Aside from the segments presented thus far, there is that of consumers who want pre-peeled, ready-to-eat mangos. This is also a fast growing segment, especially in the major consumer markets like the UK, France and Germany. The factors underlying this growth are convenience and practicality at the moment of purchase once the difficulty to assess ripeness is one of the barriers for consumers when buying the product.

According to the marketing literature, such as in the studies by Cobra (2004) and Kotler (2009), the market segmentation found in our study of the fresh mango market in the EU represents a quite traditional type of market segmentation, i.e., benefits are sought based on the premise that consumers buy solutions to their problems or the satisfaction of their needs. This is illustrated, for instance, by the consumer group (the largest) described in the first segment presented herein, who, reacting to their pocket stimuli, seek the best quality-price relation, that is, a reasonable price for a quality product. The very distribution chains, aware of the potential of such segment, launch campaigns offering healthy fruits of great nutritional and gustative quality at competitive prices.

The second segment described by us – that of affluent consumers –, seeks to fully enjoy the best flavor the product may offer. That is, they seek a top-quality product (premium or prime), which can only be guaranteed through airfreight transportation once aside from a very small microclimate zone located in Andalusia, Spain, all mango suppliers to the EU market are overseas producers and the sea freight transportation demands that the fruit be harvested prior to the full development of the attributes that determine its gustative quality.

Consumers comprising the third segment, on the other hand, seek to buy a product that does not harm the environment nor damage their health. They are happy to consume a product that besides meeting their demands for organoleptic qualities and food safety also respects their sociocultural concepts.

The segment comprised of consumers who seek pre-peeled, ready-to-eat mangos is characterized by the practicality associated with buying, transporting, and storing the fruit in the refrigerator and even with consumption itself.

With respect to the quality-competitive price relation that characterizes consumers profiled in the first market segment described herein, Papasseit (2009), in his analysis of the EU fruits and vegetable market, reveals the growing importance of European supermarket chains. He points out the focus of many of these organizations' publicity campaigns is on price and quality, highlighting they are not antagonistic concepts. In what mangos are concerned, being a fruit of yet timid consumption levels in the market under analysis, the positive side of this behavior is its growing popularity and sales; on the other hand, the pressure on producers and exporters to deliver quality products at competitive prices is seen as negative.

Regarding the second market segment described above, the Centre for the Promotion of Imports from Developing Countries (2009b) argues Israel is the country that best meets these consumers' demands for mangos of premium flavor. The country produces nearly 30,000 tons annually and exports the major part of its production – of traditional varieties like Tommy Atkins, Kent and Keitt – to the EU, by ship. On the other hand, premium varieties like Maya, Palmer and Shelly, are produced in small areas and transported by air. The market analysts of the Centre for the Promotion of Imports from Developing Countries (CBI) further explain that because these varieties are harvested very close to their full maturation point they require great care concerning harvesting, handling and packaging. Nevertheless, the benefits are much higher once consumers of these top-quality mangos are ready to pay three-fold the price of traditional varieties. It is interesting to note that Israelis include the Haden species in this group of premium products due to its high gustative quality.

As for the segment of organic mangos, again the EU markets' main suppliers are Brazil and Peru. These countries have organizations of small producers that export their production through the traditional means or through fair-trade. The analysts of the Centre for the

Promotion of Imports from Developing Countries (2009a), in the European Union, point out in that the market share of organic food products varies from 2 to 5%. In Denmark, organic products account for the largest market share: 5% of all products have an organic certification. Germany, on the other hand, is the market that accounts for the greatest volume of organic products in the EU. In reference to the mango market, it is estimated that five containers of organic mangos enter the EU every week, representing 5,000 tons/year and approximately 2.5% of the total mango exports. Still in regard to the market of organic products in the EU, it is worth mentioning that in various countries of this macro market today, motivated mainly by the economic crisis that ravages the world, campaigns are being launched for the consumption of local products. According to followers of this line of reasoning, products developed locally can be closely monitored regarding the impact on the environment resulting from their production and processing. From the standpoint of analysts of the agro food market, the local organic products compete face-to-face with imported organic products once, according to supporters of local products, even when the organic products produced in other continents are cultivated adequately their transportation into their import countries in itself is harmful enough to the environment. However, as there is very little mango production in Europe, this trend does not yet represent a threat to the growing demand of the EU.

With respect to the fourth segment of the fresh mango market in the EU identified in the present study – the market for processed mangos, most of the analysts of the fruit and vegetable products market, such as Del Pozo; Papasseit and Namesny (2008), point out that in the European market this kind of product registered the highest growth and represents approximately 20% of the market. These analysts argue that the strongest evidence to that is the way they are displayed in supermarket shelves, occupying more refrigerated shelves than do dairy products. In what regards to mangos, according to a study by the Centre for the Promotion of Imports from Developing Countries (2009b), in the EU, the UK is the major market of pre-peeled and ready-to-eat mangos. Analyses indicate that besides practicality and comfort, the British consumers' difficulty to assess ripeness is one of the major factors contributing to the growth in demand for this kind of mango.

In summary, it is fundamental to say that aside from the fresh mango – the target of our investigation –; there are still the market segments of the processed mango. Imports of juice, pulp, and concentrated by the EU reached 6.4 million tons in 2007. As from 2002, a 6% annual increase in imports of juice and concentrated juice has been recorded, being the Netherlands, Belgium and Germany the main importers (CENTRE FOR THE PROMOTION OF IMPORTS FROM DEVELOPING COUNTRIES, 2009b). Nonetheless, it is still a small market accounting for only 4% of the world demand and the major part of imports are delivered in the form of aseptic and frozen pulp or paste, and concentrated juice. In the European market, the pulp is used mainly as an ingredient in tropical juices, desserts (jams, sweets and ice cream) and baby food. As the fruit and its pulp have a very typical and strong fragrance, it is a widely used product in beverages, though in very little amounts. It is worth mentioning, however, that in the major supermarket chains in most European countries the mango nectar and juice can be found in other forms rather than just an ingredient – a clear indication that this fruit's flavor has found some room in the market as a beverage.

4 – CONCLUDING CONSIDERATIONS

The present study of the EU mango market shows that increased mango consumption levels; distribution heavily centralized in the hands of major supermarket chains; and quality are determinant competitive factors defining market behavior. With regard to the marketing concept of Product Life-cycle, the investigation found that in the EU macro market, the Tommy Atkins mango is classified in two stages of its sales life-cycle (falling maturity and decline); Kent is ascendant in the maturity stage; Haden and Keitt are stabilized in the maturity stage; and Palmer, Maya and Shelly are presently classified in the growth stage – generating the greatest benefits to producers and exporters. Our results also reveal the existence of four consumer segments in the fresh mango market in the EU comprised of: i) consumers that buy the mango imported by ship and seek for a balanced relation between quality and competitive price; ii) consumers of quality premium mangos – Palmer, Maya and Shelly – transported by airfreight; iii) consumers of organic or ecological mangos; and iv) consumers of pre-peeled, ready-to-eat mangos.

Even when considering that Brazil is still the leading mango exporter to the EU market, various factors identified in this study – such as concept of quality based on consumer perceptions as protagonist; distribution heavily centralized in the hands of major supermarket chains; supply growing at faster rates than demand; and the finding that among other mango exporting countries to the EU, such as Peru, there are vast crop areas that haven't yet reached their production stage – signal that in their production and trade planning Brazilian mango exporters shall prioritize product diversification. It is important to note that such procedure has already been adopted in the main production areas like the São Francisco valley; however, exports are still concentrated on the Tommy Atkins variety.

As Brazil has developed high technology for mango production, the challenge to diversify exports can be met without great damage to the productive sector in a relatively short time. Furthermore, it is pertinent to argue that in defining the strategy for diversification of the mango supply to the EU market one shall bear in mind its segmentation and the sales life-cycle of each variety in the various community markets. According to this study, Palmer mangos shall be prioritized once they are highly valued by upmarket consumers, show significant growth rate and are classified in the sales life-cycle stage – the one that most generates benefits to producers and exporters.

However, further measures shall be taken for the country to maintain or increase its participation in the competitive EU mango market, such as programs for a broader promotion of mangos as well as of other Brazilian fruits exported to that market, as is the case of grapes and papayas. Such promotion programs shall include tasting in the major supermarket chains with the participation of producers and exporters in the main international fairs for fruit and vegetable products. Although in the logistics segment Brazil holds a competitive advantage over the Andean countries (shorter distance from European markets and better seaport and airport infrastructure), logistics deserves attention in what concerns costs so that the product delivered can be quality mangos at competitive prices.

Still other actions can be taken that are extremely necessary for strengthening the competitive potential of the Brazilian mango: i) better organization of supply through the creation of associations of producers and exporters, thus avoiding excessive supply, which entails so much damage to the export sector; ii) maintenance of action programs that target the supply of healthy and innocuous mangos produced with transparency and respect to the environment; iii) and the improvement of agricultural investigation programs that enable the enhancement of harvest and post-harvest activities and the appearance of varieties with attributes that fully satisfy consumers' taste and preferences and present adequate resistance with respect to transportation and shelf-life.

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