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WORLD TRADE IN PROCESSED TROPICAL FRUITS

By

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A. INTRODUCTION

Tropical fruit products are sold in a variety of processed or semi-processed forms, the following three product groups being the main ones: *Canned fruit ("prepared or preserved"); Fruit juices, juice concentrates and fruit pulp/purée; and Dried/dehydrated fruit.*

This paper will cover the most important tropical fruit, including the following: pineapple, banana, passion fruit, mango, papaya and guava. Other less important tropical fruit will be covered, when relevant and to the extent information is available, e.g. cherimoya/soursop, acerola (Barbados cherry), pomegranate, lychee, rambutan, longan and starfruit.

B. WORLD SUPPLY

With the exception of a few major items there are no statistics on world production of tropical fruit. However, according to the FAO Production Yearbook, total world crop of bananas amounted to 54.5 million tons in 1995, followed by mango with 19 million tons, pineapples (11.5 million tons) and papayas or pawpaws (5.2 million tons). Plantains (30.2 million tons) and avocados (two million tons) are not included in this paper. For the purpose of comparison it should be noted that the total world crop of oranges amounted to 58 million tons in 1995, and that of apples amounted to 49.7 million tons.

The FAO statistics provide a breakdown by regions and countries for the above fruit, but does not specify other tropical fruit. The figures include total production of fresh fruit, whether used for fresh fruit consumption or animal feed, or processed into various products, including those covered by this paper. No figures are given on the utilization of the fresh fruit production, and there are no figures on global production of processed tropical fruit products.

C. WORLD TRADE AND MARKET SITUATION BY PRODUCT GROUP

CANNED TROPICAL FRUIT

World trade

Pineapple is the most important canned tropical fruit, followed by tropical fruit cocktails (tropical fruit salads), canned lychee, canned mango and canned papaya, and a few others.

With total world imports of canned pineapple amounting to $617 million in 1995, it is not only the biggest canned tropical fruit in world trade but also the largest item of any processed tropical fruit traded. The United States is by far the biggest importer with $ 185 million in 1995, corresponding to about 30% of total world trade, by value. Together the five biggest markets, including also Germany, Japan, the United Kingdom and the Netherlands accounted for 61.7% of the total. See table 1.

The major supplying countries are Thailand (by far the biggest with about 43% of total world exports in 1995), followed by the Philippines, Kenya, Indonesia, Malaysia and South Africa. Singapore, the Netherlands, Germany and Belgium are re-exporters only, though they account for a substantial share of world exports. See table 2.

No figures exist for canned tropical fruit salads and other canned tropical fruit, though importers in some markets indicated that sales might correspond to about 5% of canned pineapple sales. However, this estimate seems to be too high in most markets. Thailand appears to be by far the largest supplier of most of these products.

Market characteristics

In most markets the retail sector absorbs between 50% and 75% of canned pineapple sales, while catering and the food industry account for the balance. For canned pineapple the bakery industry is a very important outlet. Tropical fruit salads and canned single fruit are sold mainly for retail but also for catering (e.g. lychee).

Canned **pineapple** is sold in the following main forms: slices (mainly for retail), titbits, chunks, pieces and crushed (mainly for catering/industry). **Tropical fruit cocktails** usually contain pineapple, papaya (red and/or yellow), guava and banana in light syrup and/or passion fruit juice. Some packs may include other fruit, e.g. rambutan, longans or mango. Traders in some markets indicated a growing interest amongst consumers for tropical fruit cocktails.

It should be noted that some non-tropical fruit salads also include pineapple. Such products are packed, for example in Greece; since Greece is not producing pineapple, this fruit is imported, usually in A 10 cans (3 kg) or bigger containers, for re-packing with other (non-tropical) fruit. Similar products (e.g. peach/pear/grape/pineapple/cherry) are also imported from South Africa.

Apart from pineapple, **mango** (mainly slices) is probably the most important canned single fruit product, followed by **lychee, papaya**, red or yellow (chunks or dice) and **guava** (quarters, halves or dice). **Other tropical fruit** include, rambutan, jack fruit, pitahaya (slices) and kumquat. In France, for example, there is a growing market for canned **coconut milk**.

Other canned fruit include two-fruit products. A Thai producer, for example, exports papaya/pineapple, pineapple/ mango and papaya/mango, all packed 50/50. Rambutan stuffed with pineapple is exported by Thailand and Viet Nam.

Distribution channels

In most markets the large retail organizations prefer to purchase canned pineapple direct, either from the multinationals or other, often smaller, producers in the producing countries, which may pack supermarkets' own labels. However, most retail organizations also obtain canned pineapple through intermediaries. The catering sector and the food industry are supplied by the multinationals as well as specialized agents and importers.

Canned mango, papaya, guava, etc. are imported mainly by specialized importers, who supply the retail trade, while very little is supplied to catering and industry.

A considerable amount of canned tropical fruit imported into the European Union, in particular the Netherlands, Belgium and Germany, is re-exported to other European markets; this includes a considerable trade with the previous communist countries in Central and Eastern

Europe (economies in transition). In Asia, Singapore is a very important trading centre for canned pineapple and some other fruit.

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FRUIT JUICES, CONCENTRATES AND PULP/PUREE

World trade

In 1995, world imports in fruit juices and concentrates reached $ 5,748 million, having fluctuated heavily in recent years, though it should be noted that world trade has increased very considerably over the last two decades. By far the largest share of world trade in fruit juices consists of citrus juices (mainly orange) and temperate-zone fruit juices, e.g. apple juice, whereas tropical fruit juices and concentrates accounted for the balance (about 5%). These figures do not include trade in pulp/purée.

Pineapple juice (mainly concentrate) is by far the most important tropical fruit juice. In 1995, world imports amounted to $ 280 million, while they fluctuated enormously since 1990 and peaked at $ 383 million in 1991. The fluctuations were caused by great variations in supply rather than demand factors, though there has been a considerable increase in world trade in pineapple juice over the last decade. See table 3.

Imports into the five largest markets, i.e. the United States, the Netherlands, Italy, France and Spain, amounted to $ 191 million in 1995 or 68% of world imports.The three largest producers of pineapple juice/concentrate, Thailand, the Philippines and Kenya , together account for over half of total world exports. Other important suppliers are Indonesia, Costa Rica, the United States and South Africa. Again it should be noted that world trade includes a very large amount of re-exports (mainly from the Netherlands). See table 4.

With the exception of pineapple, there are no reliable statistics on world trade in tropical fruit juices, concentrates and pulp/purée. However, based on information from trade sources and fragments of trade statistics, annual world trade in these products (excluding pineapple) can be estimated in the range of 175,000 to 200,000 tons in single strength equivalent, valued at between $175 and $225 million. The three most important tropical fruits, apart from pineapple, are banana, passion fruit and mango. The major markets are the European Union and the United States.

Market characteristics

Though there is a certain trade in consumer-packed items, fruit juices, concentrates and pulp/purée are mainly traded internationally in bulk form and used as a raw material by various industries. Though they vary with the fruit and market in question, a few end-uses are common to most markets:

- The beverage industry is by far the biggest end-user of these products. It produces juices, nectars, fruit juice drinks, multi-fruit and multi-vitamin beverages, alcoholic liqueurs, syrups, etc.

- The dairy industry produces such items as yoghurt, yoghurt drinks, ice-cream , pudding desserts and sauces. In addition to fruit juices/concentrates and pulp/purée, this industry also uses tropical fruit pieces, chunks, titbits, etc. in either frozen or canned form.

- Other food industries produce a range of products, containing some tropical fruit, such as bakery products, baby food, jams and confectionery. The baby food industry is the largest end-user of banana purée.

Pineapple juice/concentrate - the largest item - is mostly traded as a 60°Brix concentrate, frozen or aseptically packed. The main suppliers are mentioned above.

Banana is sold mainly as a purée (20-22°Brix) and as a concentrate (34°Brix); it is aseptically packed, canned or frozen. Main suppliers include Costa Rica, Ecuador, Brazil, Honduras, India, etc. **Passion fruit** is sold as juice (14-16°Brix) and mainly as a concentrate (50°Brix), preferably in frozen form because of quality reasons (aroma/flavour). Main suppliers include Ecuador, Brazil, Peru and Kenya. **Mango** is sold as pulp (13-18°Brix) or concentrate (28-32°Brix), mainly frozen and aseptically packed. Main suppliers include India, Peru and Ecuador. **Guava** is sold mainly as purée (8-11°Brix) and as a concentrate (20°Brix), frozen but also in aseptic packs. Main suppliers include South Africa, Malaysia, India, etc. **Papaya** is sold as pulp (9-10°Brix) and concentrate (21-25°Brix), in frozen form and aseptic packs. Main suppliers include India, Peru, Brazil, etc.

Other tropical fruits, most of which are sold in fairly small quantities include: acerola (purée and concentrate), mainly from Brazil; cherimoya (pulp) from Venezuela, Brazil and Ecuador; guanabana/soursop (pulp) from Peru, Colombia and Venezuela; and lychee (concentrate), starfruit (concentrate) from Malaysia.

Distribution channels

Tropical fruit juices, concentrates and pulp are usually obtained through specialized importers, though big bottlers may buy some of their requirements direct. Importers with blending facilities and compound houses supply raw material to end-users, for example blends to the beverage industry and yoghurt bases to the dairy industry.

The food and beverage industry is becoming more and more integrated across the European Union in terms of the manufacture, trade and distribution of fruit juices and similar products. Most of the trade in fruit juice raw material with countries in Central and Eastern Europe is also done through traders in the European Union. Like in the United States imports of tropical fruit juice raw material is handled by a relatively small number of companies.

DRIED/DEHYDRATED TROPICAL FRUIT

World trade

As separate trade statistics on dried/dehydrated tropical fruit are not available, it is impossible to give a precise overview of world trade in this product group. However, rough estimates put total world trade at around 30,000-35,000 tons, valued at an estimated $ 65 million (excluding coconut chips and dice). This constitutes only a small part (about 5%) of total world trade in all dried fruit, including temperate-zone, subtropical and tropical. The major markets for dried tropical fruit are the European Union (mainly Germany, France, the United Kingdom and the Netherlands), the United States and Japan.

Market characteristics

Consumers in the main markets have a long tradition of eating dried fruit (i.e. sun-dried) and nuts, whether temperate-zone or subtropical, e.g. dates and figs, sultanas, raisins and apricots.

Dehydrated (mainly hot-air dried) fruit, and tropical fruit in particular, fall into another category and offer, at least to some extent, additional end-uses. Though they vary somewhat with the type of fruit in question, the main end-users described below form market segments common to most markets.

- The dried fruit and nut industry is probably the largest end-user of dried/dehydrated tropical fruit. It produces a wide range of products, the most popular being fruit and nut mixes, though some tropical fruit are also sold in single-fruit packs, such as banana chips, pineapple pieces or slices, and papaya pieces or spears.

- The breakfast cereal industry is believed to be the second largest end-user of dried/dehydrated tropical fruit, e.g. in *müsli*. Tropical fruit is used more for appearance (because of their strong colours) than for flavour.

- The confectionery industry uses dried/dehydrated tropical fruit in various products like health bars, snack bars, *müsli* bars, fruit bars and chocolate bars, which are often taken as a snack between meals.

- Several other food products may include some dried, dehydrated or even freeze-dried tropical fruit, e.g. bakery products, dairy products, baby food, rice packs, prepared dishes, instant desserts and fruit teas.

Bananas in various forms are the most sold item. While banana chips are not a dried/dehydrated product in the usual technical sense of the term, they are popular in all markets. They are available in slices, wholes, strips, etc. The leading producer is the Philippines. Sun-dried bananas are sold in whole fruit (fingers), slices and dice. The main supplier is Ecuador; other suppliers include the Philippines and Thailand. Dehydrated bananas (hot-air dried) in small dice, granules, etc. are also sold, though in much smaller quantities.

Dehydrated **pineapple** (second largest item after banana) is sold in a number of different cuts (e.g. diced, in granules, tidbits, rings/slices). The colour should be light yellow or gold. Thailand is by far the biggest exporter, but supplies are also coming from the Philippines, South Africa, Taiwan Province (China) and other areas.

Papayas are likewise sold in all markets; though the fruit is less well known among consumers, it is appreciated by food manufacturers and packers. Dehydrated papaya is imported diced, in granules, chunks and spears. The colour should preferably be a natural red, which is supplied by Thailand. The lesser accepted white and other lighter colours are supplied by Thailand, the Philippines and Taiwan Province (China).

Mangoes in dehydrated form are little known by consumers and are sold in much smaller quantities than the above fruit. However, end-users in several markets have indicated an interest in buying more of this fruit if prices were lower. Mango prices are usually up to twice as high as those for pineapple and papaya. The leading suppliers are Thailand, India and the Philippines, followed by Taiwan Province (China) and Malaysia. Dehydrated mango is imported in dice, granules, chunks, slices, spears, and as powder. The colour should preferably be yellowish orange.

Other tropical fruits are sold in very small quantities, though packers and end-users are interested in experimenting with new fruit, if available. Dehydrated fruit in this category includes:

Guavas, kumquats, durian, starfruit, jack fruit, guyabanos, longans, crystallized ginger and stargooseberry.

Most importers and end-users often have their own, usually strict, specifications, which suppliers have to meet. The buyer will specify cut/style, moisture content, sugar content, whether the product should be with or without SO2, etc. Pineapple, for example, is usually offered in three forms: regular sugar (75-85%), low sugar (50-65%) and no sugar (40% natural sugar content).

It should be noted that tropical fruit is also offered by some producers in freeze-dried form. These products are of very high quality and are used for special purposes, e.g. instant desserts and *müsli*. Prices are high and the market is reported to be very small.

Distribution channels

Dried/ dehydrated fruit traded in comparatively small quantities are normally obtained through specialized agents or importers. For tropical fruit there are two main categories of intermediaries. The first are companies that specialize in handling dried fruit and nuts. Most of the trade goes through these companies. The second group comprises specialized importers/reprocessors of dehydrated vegetables. Both categories handle tropical fruit to complement their traditional range of products. The second category also purchases through specialized agents and importers.

Packers of dried fruit and nuts often import direct, but most of them probably buy tropical fruit through intermediaries because of the smaller quantities involved. Food manufacturers almost always obtain their dehydrated tropical fruit through middlemen. The retail as well as the catering sectors do not normally import dried/dehydrated tropical fruit direct. Processed foodstuffs containing tropical fruit and packs of dried fruit and nuts are usually supplied by manufacturers/packers of such products.

D. MARKET PROSPECTS

Canned tropical fruit

In general, the world market for canned tropical fruit suffers from the overall stagnation in canned fruit sales, as consumers, and young consumers in particular, prefer to buy fresh fruit or for certain end-uses even frozen fruit. However, canned pineapple is expected to remain the most important processed tropical fruit item for the foreseeable future. Both the United States and the European Union markets for canned pineapple are expected to stabilize around their present size, though considerable fluctuations will continue, mainly as a result of supply conditions in the major producing countries.

Other major markets are also expected to remain at least at their present size, while new markets, for example, in Central and Eastern Europe, are more likely to offer growth possibilities. However, the pineapple business is not just a result of demand forces and the development will, to a very large extent, depend on the supply situation in the major producing countries.

There is a growing demand in several European markets for tropical fruit salads thanks to a certain general interest in tropical products amongst consumers. Processors in developing countries also seem to be pushing this product more aggressively than in the past, as a means of diversifying their exports. It helps them to better utilize their production capacity and keep their unit costs down. As mentioned, two-fruit products, e.g. “Papaya/mango”, are increasingly being introduced in major markets, which is likely to increase overall sales of these fruit, though from a low level.

As shown above, the market for individually canned fruit (excluding pineapple) is small, though a few products, e.g. canned mango, canned lychee and canned papaya, sell relatively well. Again the growing interest in tropical products as such is likely to have a positive effect on future sales.

Fruit juices, concentrates and pulp/purée

Though world trade in fruit juices (tropical and non-tropical) has fluctuated considerably, in value terms, during recent years, most major markets have increased in volume terms during the same period. In general, the world market for fruit juices is expected to show further growth in the future, *inter alia*, because of a low per capita consumption in many markets and a growing health consciousness in most markets.

Considering more specifically tropical fruit juices, concentrates and pulp/purée, traders generally expect sales of these products to grow at least at the same rate as the juice market as a whole, and in some cases even more. Again the fruit juice business and related food industries are expected to benefit from the general interest in tropical fruit, including fresh produce, in most markets.

The major markets in the European Union and the United States are expected to remain the most important outlets for tropical fruit juices, concentrates and pulp/purée, whereas, for example, Japan and the Republic of Korea are less interesting markets for this product group. On the other hand there is a growing market in Singapore and some other markets in Asia and Latin America, including some of the traditional exporting countries.

Dried/dehydrated tropical fruit

As shown above, the dried/dehydrated tropical fruit trade is fairly small compared with the trade in the other processed tropical fruit products discussed here. However, it is an important business for those exporters involved in it. Though dried banana and banana chips have been known in major markets for a long time, the market for dried/dehydrated fruit such as pineapple, papaya and mango has developed only comparatively recently, say within the last decade. Thanks to heavy promotion by dried fruit and nut packers and food processors, e.g. *müsli* manufacturers, imports of this product group reached their current level fairly easily, but have not increased much during the last three to four years.

Traders in Europe and the United States are generally of the opinion that the market is more or less stagnant, and that little growth can be expected in the near to medium term. One of the impeding factors is that the taste of dehydrated tropical fruit is an acquired one for most consumers. Another factor is the high sugar content of dehydrated tropical fruit, which, to some extent, is detrimental to its success as a health food.

However, in the longer run, world trade in dehydrated tropical fruit may expand further. This will depend on the world economic situation, on the emergence of new markets and, in particular, on innovative product development by producers of dehydrated fruit and the food industries. It is interesting to note that some producers are actually experimenting with new product forms, e.g. rehydratable fruit, products with longer shelf life, items with lower sugar content, and new variations in product cuts. At the same time food producers are introducing more products with dehydrated fruit as an ingredient. It is also encouraging that exports are taking place to non-traditional markets, e.g. China is importing dehydrated papaya and pineapple.

Other processed tropical fruit products

In addition to the three major product groups, discussed above, there are several other processed or semi-processed tropical fruit products.

There is, for example, a growing market for frozen tropical fruit, e.g. pineapple, mango, papaya and banana, in slices, pieces, chunks, tidbits, dice, cubes, etc., dependent on the fruit in question (mainly IQF as opposed to block-frozen). These products are used as ingredients in bakery products, dairy products, baby food, fruit salads, etc.

Smaller (much smaller) export markets exist for tropical jams, jellies, syrups, and other retail-packed tropical fruit products, though such products are usually produced by domestic manufacturers, e.g. in Europe, from imported raw materials such as those mentioned above.

Summary on prospects for processed tropical fruit

In summary it can be concluded that total world trade in processed tropical fruit has reached an estimated $ 1,250 million, an impressive figure by most standards, and its importance is accentuated by the fact that it is supplied almost entirely by developing countries. Canned products are the most important category, in terms of total export value, with canned pineapple accounting for over half of total sales in processed tropical fruit, followed by juices, concentrates and pulp/purée, which are mainly traded internationally in bulk form and used as raw material by various industries. As shown, dried/dehydrated tropical fruit is traded in relatively small quantities. Among these major product categories, fruit juices, concentrates and pulp/purée appear to offer, by far, the best prospects for a long-term increase in exports.

E. MAJOR PROBLEM AREAS FOR EXPORTING DEVELOPING COUNTRIES

Problems related to the further development of the tropical fruit processing industry obviously vary considerably from country to country, depending on such factors as the general stage of development of the country in question, the size of its fruit processing industry, its infrastructure, etc. Though the following major problem areas are known to be of particular relevance in the fruit juice industry, other forms of tropical fruit processing are likely to face similar problems.

Agriculture and raw material supply

In many developing countries there is a major problem in relation to raw material supply. In some cases, there is simply not enough fresh fruit available to make a fruit juice industry viable. In other cases, an increase in supply of raw material is strongly needed to expand existing production and exports of fruit juices, whereas in some countries the industry is dependent on only one or two types of fruit for processing, usually resulting in a considerable and largely seasonal overcapacity. The specific problems may include the following: low yields, unsuitable types/varieties of fruit for processing, poor post-harvest handling, internal and external transportation, etc. In most countries, government authorities and industry leaders are well aware of the situation and are already undertaking corrective measures or planning to do so. However, external assistance in this area would be welcome in several countries.

Processing

Developing countries with modern and efficient fruit processing plants generally seem to face few major technical problems though it is likely that quality improvements could be made in some cases. However, in many countries, plants are small, old-fashioned, inefficient and totally inadequate for producing high quality fruit products.

It is also important to use the appropriate technology bearing in mind the requirements of the market. For example, there is a general preference for frozen fruit juice raw material, and aseptic packs are accepted to a large extent, in particular for certain fruit. Canned products (hot-packed), on the other hand, are generally of little interest to fruit juice bottlers and packers in the major markets, due to handling and environmental problems, though cans are still used for some products, e.g. banana purée.

Export marketing

A major problem facing exporters in developing countries is the identification of marketing opportunities for specific products. Not only is the choice of target market of paramount importance, but the selection of the most profitable market segments and the best suited distribution channels are also crucial elements in designing an overall export strategy.

There is often a lack of product and market diversification. Many developing country exporters are dependent on one or two fruits. Too much dependence on a single export item is obviously always a serious problem, but for most fruit juices and in particular for a product like passion fruit juice, the problem is accentuated by very big price fluctuations over a fairly short span of time, resulting in oversupply and low prices. Another problem, though smaller, is that many developing countries export their fruit juice to just one or a few major markets, usually for historical and/or geographical reasons. Typically a larger degree of market diversification would be advantageous, though it must also be stressed that a company's marketing activities should not be spread too thinly over too many markets, in particular when export quantities are relatively small.

A serious problem in most developing countries is the lack of information on market requirements, market trends and world market prices. It is hoped that the ITC market surveys on fruit juices and the Market News Service (MNS) on bulk-packed fruit juices/ concentrates and pulp/purée have helped to fill this information gap. In addition, a large number of other publications, including market studies, trade journals, specialized news letters, etc., published by public and private organizations, provide very useful information on market trends and requirements. It is likewise of great importance that exporters visit the major markets regularly to build up and maintain good contacts with importers and to follow market developments and trends direct.