Papaya

A growing market

The international papaya market seems to have a fine future. Work on fruit varieties and post-harvest operations has increased the lifetime of this reputedly delicate fruit. Harvesting at practically ripe stage and optimum sea transport conditions have re-launched operators' appetite for papaya. Nevertheless, education for consumers is essential.

Brazil is the leading papaya producing country, with some 1 650 000 tonnes, that is to say 25% of world production. Mexico is well behind with production approaching a million tonnes. These are followed by countries like Nigeria, India and Indonesia with between 650 000 and 750 000 t each. Finally, annual production is between 100 000 and 230 000 t in many countries—Ethiopia, the Congo, Peru, Venezuela, China, Cuba, Thailand and Colombia.

Domestic markets still form the main outlet for papaya. Given the difficulties experienced in transport of the fruit (it is very delicate) and the sometimes small returns on investment, many growers do not wish to grow it for export. In addition, in some countries, such as Brazil, producers have abandoned it and grow coffee instead as this is more profitable.

Exports developing

Nevertheless, world exports have soared, mainly since 2000-2001, rising from 121 700 t in 1996 to more than 250 700 t in 2003, thus more than doubling in hardly 7 years! The increase is even more impressive in Brazil, whose production increased seven-fold during the same period, from 5 600 t to 39 492 t! Mexico is the leading exporter with 96 500 tonnes, followed by Malaysia (58 100 t) and Brazil.

The United States, the world's largest importer

The main import market (accounting for nearly 41% of world exports) is the USA, with a population of 293 million. It is followed by the EU with 20% (population 450 million), Hong Kong with 11% (population 6.9 million), Singapore with 11% (population 4.24 million) and 'others' (17%).

Post-harvest operations as a development tool

Papaya must be harvested when ripe and exports have long run up against problems of keeping. As sea transport takes between two and three weeks in most cases, the challenge is considerable. However, a number of very recent innovations in the conservation of fresh fruits have resulted in renewed interest in sea freight for papaya since it was abandoned in 2000-2001. Its spectacular development from 2002-2003 onwards has in a way democratised the fruit by making it available at more acceptable retail prices. Some hard discount chains in Germany have recently started to keep regular stocks of papaya at less than one euro each.

A consumption threshold to be exceeded in Europe

Import statistics show that papaya consumption is much lower in Europe than in the USA. Indeed, the latter imports twice as much papaya as the EU. This can be explained by strong ethnic consumption. It is thought that nearly 35.3 million Hispanic persons live in the United States (2000 census), and most of these came from Mexico, the second largest papaya producer in the world. Nevertheless, it seems clear that there is considerable scope for increased consumption in Europe. Marked differences are also observed within the EU. According to Eurostat, the seven leading papaya

The main varieties marketed in Europe

'Solo': discovered in Barbados in 1911 and marketed from 1936 onwards. Yellow/green skin, yellow/orange flesh, very sweet and fragrant, juicy. Weight: 0.5 to 1 kg. Pear-shaped and of a size well suited to European markets, it is by far the best-known variety.

'Formosa': large fruits (up to 5 kg). Consumption mainly ethnic and catering.

'Golden' : fruit with striped pale brown skin, thick, very firm salmon-pink flesh; very sweet with a nutty taste. Mainly grown in subtropical regions in Asia and also in Brazil. Keeps very well.

'Sunrise': soft skin, firm red-orange flesh, sweet with a high sugar content. Weight: 0.6 to 0.75 kg.

importing countries in Europe are the Netherlands (14 739 t), the United Kingdom (10 757 t), Portugal (5 114 t), Germany (3 790 t), Spain (3 138 t), France (1 636 t) and Italy (850 t).

However, these figures do not reflect real consumption, since the Netherlands, Germany and France also function as hubs with an estimated re-shipment of nearly 30% to destinations in the European Union.

Thus, according to the EU Market Brief 2005 on papaya (CBI), apparent consumption in tonnes is increasing noticeably in the great majority of European countries, with a jump of 31% from 2002 to 2003, but with considerable disparities. Average per capita consumption is 0.13 kg per year in the EU. Portugal is by far the leading consumer country with 0.49 kg per person per year. It is followed far behind by a group of three countries—the United Kingdom, Holland and Germany—with consumption of 0.11 to 0.19 kg per person per year. Finally, although consumption is increasing, the performances of Spain, France and Italy are much smaller than the European average, with consumption of 0.02 to 0.03 kg per person per year.

Thus, although it has been increasing recently, papaya consumption is very low in Europe (except in Portugal). Furthermore, operators in the sector report that the great majority of sales are concentrated around Christmas and Easter. This means that consumption is festive so far, whereas papaya, which is finally fairly similar to water melon, should be more a summer fruit.

Consumption differences in Europe

Several explanations can be put forward. First, the case of Portugal should be seen separately. The good performance on this market is above all the result of substantial ethnic consumption for historical reasons and the still very strong links with Brazil. To a lesser degree, a population fringe in the UK is from countries in which papaya is eaten, such as India and Pakistan.

The situation in Germany and Holland seems much closer to that of France (like Spain and Italy). The populations from countries in which papaya is eaten very regularly are much more marginal. However, apparent consumption in Germany and Holland is much greater than that observed in France.

Thus, one might wonder what have been the main levers for the development of consumption in countries that generally display little inclination to eat this exotic fruits—apart from the logistic effect.

Marketing is necessary

For example, in Germany, and in the United Kingdom as well, considerable efforts have been made in marketing in recent years, based on the simple observation that the average European does not know this fruit! Thus, advertising campaigns targeting the natural advantages of papaya were run, mentioning its nutritional qualities. Efforts were also made to make the fruit more attractive to children—tomorrow's consumers. This is the case in particular of the campaign

Papaya in short

The papaya tree (Caricaceae) originated in tropical America and soon spread around the tropical belt. It grows in hot climates with abundant rainfall and flowers and fruits all the year round. The tree is unbranched and grows rapidly (considered as similar to a giant grass) to as much as 7 metres. It produces berries (pip fruits) that are round, ovoid or pear-shaped; these grow in bunches directly on the trunk. Plants are male, female or even hermaphroditic. Papayas from a female flower are practically round or oval. In contrast, hermaphroditic papayas are often cylindrical or pear-shaped. These are also the most appreciated (except in South Africa). Fruit skin is smooth and green, yellow or red depending on the variety (nearly 50). The fruits have a central cavity containing a large number of small mucilage-covered black seeds. The juicy, fragrant flesh is yellowish to orange when ripe. The fruits do not continue to ripen after picking.

Papaya — Main producer countries — Tonnes

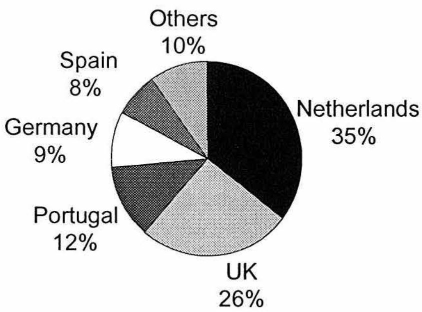
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total, incl.	**4 566 287**	**4 358 526**	**5 002 163**	**5 421 084**	**5 644 440**	**5 813 157**	**6 239 288**	**6 514 450**	**6 655 224**	**6 708 551**
Brazil	1 040 746	932 960	1 301 367	1 378 143	1 402 142	1 439 712	1 489 324	1 597 700	1 600 000	1 650 000
Mexico	482 968	496 849	594 134	575 558	569 230	672 376	873 457	876 150	955 694	955 694
Nigeria	648 000	662 000	675 000	751 000	748 000	748 000	748 000	755 000	755 000	755 000
India	478 271	539 736	620 000	582 000	660 000	700 000	700 000	700 000	700 000	700 000
Indonesia	586 082	381 964	360 503	489 948	450 009	429 207	500 571	605 194	626 745	595 333
Ethiopia	0	0	0	180 000	180 000	197 300	223 000	226 000	230 540	230 000
Congo	225 000	224 105	225 719	227 344	220 000	213 000	206 222	210 305	211 000	211 000
Peru	139 548	136 383	146 561	165 008	170 980	171 392	158 812	173 005	191 037	194 714
China	146 332	145 558	154 356	130 651	175 155	154 222	159 207	162 572	164 559	161 000
Venezuela	72 487	80 559	87 117	97 455	98 948	114 234	130 204	152 738	148 030	155 670
Philippines	56 820	60 453	65 408	62 748	71 666	75 896	77 417	127 680	130 764	131 869
Thailand	120 000	115 000	115 000	118 000	119 000	119 000	120 000	120 000	125 000	125 000
Cuba	15 043	23 800	32 264	67 911	61 300	95 503	135 128	107 240	120 100	120 000
Colombia	64 000	64 000	64 000	64 000	115 376	112 627	110 754	86 408	87 621	102 000
Kenya	57 465	60 050	65 844	65 605	62 780	63 410	77 822	81 811	86 491	86 000
Yemen	57 065	58 467	61 396	62 517	66 943	67 979	70 740	72 305	73 751	73 800

Source: FAO

Papaya — World exports — Tonnes	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total, incl.	**102 508**	**120 941**	**114 528**	**130 753**	**155 021**	**175 559**	**196 502**	**211 585**	**252 526**	**274 556**
Mexico	36 410	54 208	47 618	59 638	59 959	59 819	74 033	68 558	74 814	96 525
Malaysia	36 269	32 598	33 000	34 312	37 000	44 134	53 961	60 892	71 473	58 149
Brazil	5 272	5 693	7 869	9 878	15 709	21 513	22 804	28 541	39 492	35 930
Belize	795	2 480	3 557	4 558	4 114	5 584	6 420	11 307	16 886	28 751
United States	8 253	8 917	6 788	6 024	5 939	6 191	8 324	7 106	7 046	9 789
Netherlands	2 079	2 453	1 563	2 051	2 788	3 021	3 649	3 362	10 548	9 554
Ecuador	4	13	43	20	386	3 810	3 669	1 976	4 477	7 196
China	223	143	171	96	9	138	331	847	5 811	4 455
India	317	607	827	2 505	12 660	11 928	1 976	3 452	3 550	3 475
Philippines	2 313	1 400	407	60	1 203	2 524	4 164	4 311	1 467	3 324
Thailand	8	5	44	29	103	182	495	2 681	2 123	2 417
Ghana	0	948	1 387	904	1 374	1 530	881	1 438	1 714	1 876

Source: FAO

Papaya - EU 25
Main import markets



Source: Eurostat

launched by the Brazilian producer Caliman Agricola SA. This company has shown that papayas with spotted skin have a higher vitamin C content. It markets these fruits for children with a sticker depicting a leopard and the slogan 'More spots, more vitamin C !'.

Finally, the Brazilian association Brapex (Brazilian Association of Papaya Exporters) has increased sales promotion operations. Tasting stands have been installed in major supermarkets in the United States (Winn-Dixie, Publix and Sedano) for a five-month period. A rugby/papaya partnership was organised in the United Kingdom in 2004. Similarly, advertising spots were run on radio and TV to promote papaya in Germany.

Varietal innovation is still topical. Research in this field is concentrated on breeding fruits that are ever more resistant to sea transport but that keep excellent taste qualities. The Caliman company thus launched Calimosa, a new variety that it developed, on the German market in August 2005. It is a cross between the varieties 'Formosa' (large fruits) and 'Solo'.

The increase in exports observed is not yet consolidated. It will just be a flash in the pan unless considerable efforts are made in marketing. Papaya has serious advantages to put forward at a time when people are seeking better nutritional balance ■

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Nutritional qualities

One 150 g portion of papaya contains 85% of the recommended daily intake (RDI) of vitamin C and 70% of the RDI of beta carotene. Furthermore, the mineral content of the fruit is remarkable, with high levels of calcium, potassium and magnesium. Papaya is a low-energy foodstuff as it has a low sugar content (33 kcal in comparison with an average of 55 kcal in other fruits).

Papaya — European Union — Imports in tonnes	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total, incl.	**8 658**	**8 696**	**8 624**	**10 709**	**10 318**	**12 242**	**14 516**	**17 309**	**19 374**	**27 627**	**39 814**	**41 591**
Brazil	4 403	5 116	5 049	4 693	6 136	7 965	10 293	13 462	15 239	20 245	29 107	29 054
Ecuador										1 260	1 272	4 367
Ghana	13	23	363	774	1 393	1 026	1 789	1 858	1 937	1 415	1 711	1 826
India	1	0	0	0	0	5	4	13	23	1 288	2 004	1 722
Pakistan	0	0	0	0	0	0	2	0	1	1 301	2 007	1 676
Côte d'Ivoire	345	330	197	218	115	193	382	317	236	339	232	1 164
Thailand	120	116	123	146	194	190	213	243	362	645	789	473

Source: Eurostat

Papaya — United States — Imports in tonnes	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	**33 288**	**57 196**	**48 201**	**47 908**	**66 479**	**69 887**	**84 441**	**88 526**	**101 876**	**126 009**
Mexico	30 461	50 195	40 022	39 661	55 931	55 124	68 891	66 965	74 613	94 213
Belize	652	2 425	3 616	4 263	3 849	5 565	5 837	11 021	15 723	24 217
Brazil	0	0	8	500	2 826	4 672	5 089	5 815	7 178	4 854
Dom. Rep.	567	1 142	962	523	1 183	2 531	2 877	2 414	2 481	1 201
Jamaica	1 570	2 379	2 078	2 069	1 903	1 547	1 579	1 900	1 494	996
Guatemala	0	5	0	31	0	0	148	328	349	415
Thailand	1	8	0	0	5	34	12	30	14	70
Philippines	0	0	0	0	0	0	0	0	0	32
Ecuador	0	2	0	0	4	0	0	0	0	7
Netherlands	0	0	0	0	0	0	0	0	0	6

Source: USDA