

Segmenting the market for potatoes in South East Asia

Peter J. Batt

There is considerable evidence to suggest that potato consumption in South East Asia is increasing. While potatoes are not part of the traditional diet, increasing consumer affluence and the desire to adopt a more western diet is having a significant positive impact on the consumption of both fresh and processed potato products. However, despite the growth opportunities, much of the region remains dependent on imports. Potato production in South East Asia is primarily confined to the highlands where temperatures are sufficiently low to facilitate tuber growth. Furthermore, the high incidence of pests and diseases, poor seed quality, inappropriate varieties and the inability of farmers to purchase sufficient quantities of fertilisers and chemicals reduces yields to an average of just 16 tonnes per hectare. Well endowed with good soils, good seed, abundant resources and very knowledgeable farmers, it would seem that there are many opportunities for potato farmers in Australia to participate in the expansion of the market. However, in what is fast becoming a global market, Australian exporters are facing intense price competition from a variety of lower cost producers including China, South Asia (India, Pakistan and Bangladesh), Indonesia, the Netherlands and New Zealand.

While importers have considerable choice and wherever possible will endeavour to purchase the best quality potatoes available for the lowest price, there is considerable variation in both the quality of the tubers and the availability of the product between these alternative suppliers. Furthermore, while many regard potatoes as just another commodity, there is considerable variation between alternative suppliers in terms of the suitability of the product for its intended use. While some potatoes are better for making French fries, others are better for baking or incorporating into soups, stir fries or curries. Customers and consumers may also have various preferences for tuber size, tuber shape, skin colour and flesh colour. Thus, rather than considering the market for potatoes as being a commodity market, the market does differentiate between alternative suppliers and the different products they offer. Consequently, for Australia to compete in the market, exporters must identify what their customers specifically want and endeavour to match that against their capabilities to deliver.

Its also important to understand that while there are a great many similarities between the various markets (Hong Kong, Singapore and Malaysia), particularly with regard to the consumption of French fries, there are many significant differences between the markets and the manner in which potatoes are consumed. Significant differences may also exist with regards to the distribution of the product, the structure of the retail market and the ability of consumers to pay.

Hong Kong

In 1999, Hong Kong imported more than 456,000 tonnes of fresh vegetables. The major vegetable crops imported were cabbage (80,900 tonnes), garlic (69,900 tonnes), carrots (24,200 tonnes), lettuce (21,600 tonnes) and onions (21,400 tonnes). Potatoes comprised less than 3% of total imports by both volume and value.

With some 95% of the population being ethnic Chinese, the relatively small contribution potatoes make to total imports is not surprising. Rice is the staple food, with potatoes being used primarily as a vegetable in soups, curries and stir fries. Furthermore, with a high starch content, potatoes are perceived to be fattening, and, as a result, the consumption of French fries, potato wedges and potato skins is well below that ordinarily expected within a highly developed economy.

The fresh vegetable market in Hong Kong can be broadly divided into three segments. Even although Hong Kong has one of the highest standards of living in Asia, the retail market is dominated by the traditional wet market. It is currently estimated that there are over 100 wet markets and over 4,000 hawkers and street vendors selling fresh fruit and vegetables. Collectively, they account for over 80% of retail sales.

Nevertheless, as household incomes continue to grow, especially among the young professionals, greater convenience and the desire for a more comfortable, cleaner and hygienic environment is contributing to an expansion in supermarket sales.

Finally, there is the food service segment. Hong Kong is currently a market in transition towards a more service-orientated economy. As a result, the food service industry is expanding. However, because of the relatively small volumes purchased and the large range of produce required, most hotels and restaurants continue to purchase from importers and distributors rather than to import themselves.

In 1999, China was the major supplier of fresh vegetables to Hong Kong by both volume (77%) and value (55%). However, the large difference in market share between the volume of imports and the value of imports suggests that product from China is significantly cheaper than that imported from most other countries. Whereas the average price of imported vegetables was \$HK3.20 per kg, fresh vegetables from China returned an average price of just \$HK2.29 per kg.

Not unexpectedly, In 1999, China was the largest importer of fresh potatoes into Hong Kong by volume (47%), but commanded only a 25% share of the market by value (Table 1).

While the official import statistics suggest that the Chinese share of the fresh potato import market is declining, industry sources indicate that this is highly unlikely. They suggest that recent changes to the regulations that facilitate greater trade with Mainland China has made it much less important to accurately record import volumes and values. Furthermore, it is common knowledge that China is now the world's largest potato producer and as production continues to expand, there will be more downward pressure on prices.

Broadly speaking, the fresh potato market in Hong Kong can be divided into three segments. Segment One is the baking potato. This segment of the market is dominated by just one supplier (the USA) and by one variety (Russett Burbank). The trade reports that the US domination of this market arises from the ability of exporters to precisely meet the market demands.

**Table 1. Major importers of fresh potatoes into Hong Kong.
(tonnes) (\$HK 000)**

	1999		2000		2001	
	Volume	Value	Volume	Value	Volume	Value
China	5,461	8,638	2,633	4,969	1,162	2,308
USA	3,473	16,439	4,724	22,329	5,295	26,405
Australia	1,187	5,025	3,844	13,763	3,978	13,807
NZ	900	2,832	833	2,934	864	3,097
Holland	348	858	777	1,474	400	732
Canada	135	723	59	479	49	144
Japan	17	362	50	537	51	511
UK	2	57	14	94	-	-
France	2	19	-	-	5	46
Thailand	-	-	-	-	26	38
Egypt	-	-	26	77	-	-
TOTAL	11,525	34,954	12,960	46,662	11,830	47,098

For this market segment, the market demands large elongated tubers. Product is consigned to the market in 50 lb cardboard cartons with a count of either 90 tubers per carton (255 g per tuber) or 110 tubers per carton (210 g per tuber). Over many years, the variety has proven itself well suited to the environmental conditions experienced in Hong Kong, for it does not break down too quickly nor do the tubers readily darken. Furthermore, despite the seasonality of production, exporters have been able to maintain a continuous supply of product to the market and prices have remained relatively stable throughout the year. While importers report that the quality of the US potatoes is poor in May-July (immediately prior to the commencement of the new harvest season), overall, the quality is consistently good. As a result, over the last three years, the volume of potatoes imported from the US has increased from 3,473 tonnes (in 1999) to 5,295 tonnes in 2001. Despite a 52% increase in the volume of potatoes consigned to the market, average prices have marginally increased.

Segment Two is the premium washed potato. Perhaps the most recent segment to emerge, this market caters primarily for the needs of the emerging middle class and expatriate population. For this segment, the market requires cosmetically attractive tubers. The skin should be smooth and unblemished, preferably yellow, for there is only a very small demand for red skinned tubers. Tubers should be round or oval, but with a regular consistent shape and uniformly graded (by size). Tubers may range in size from 80-100 g up to 200-250 g depending on the variety and individual buyer's preferences.

Australia is currently the major supplier to this segment. Understandably, however, while it is the smallest segment, the high prices attract intense competition from other potential exporters.

Segment Three, the price conscious or budget potato, is the largest market segment. Here, the market is dominated by imports from China, although during January to May, China often faces intense price competition from The Netherlands.

Product from China was said to be of generally good quality and exceptionally cheap, although the quality was variable from time to time depending upon the source. With shipments arriving from China on a daily basis, few problems were experienced with tuber rotting and decay. However, the greatest problems were experienced during July-September, the hottest period of the year. The product generally arrived in bamboo baskets, with individual tubers often encased by a protective net more commonly used for apples and pears. In other instances, the product was consigned to the market in 10 kg cardboard cartons. However, irrespective of the method of packaging, the tubers were invariably dry brushed to remove soil.

Conversely, after an extended period of shipment, Dutch potatoes often had a very short shelf life. However, it was also suggested that Dutch potatoes failed to attract higher prices because of the inability of the product to meet the needs of the market. Tubers were generally too small and failed to provide importers with the minimum shelf life of 10 days at ambient temperatures. For this segment, the market preferred large uniform tubers with shallow eyes, a light coloured skin and yellow flesh.

Malaysia

In 1999, the Ministry of Agriculture estimated that more than 32,000 hectares were allocated to the production of vegetable crops in Peninsula Malaysia. Some 17,000 ha (53%) were devoted to the production of fruit crops (tomatoes, chilli's, curcubits etc), some 14,000 ha (46%) to the production of leafy vegetables and just 900 ha (3%) to the production of root crops including carrots and radish. Potatoes were not reported to make any significant contribution to domestic vegetable production.

As a result, Malaysia is not self sufficient in meeting all its fruit and vegetable needs. There is an increasing demand for high quality fruit and vegetables, out-of-season produce and produce that is not grown locally. Consequently, in 1999, Malaysia imported over 561,000 tonnes of fresh vegetables. The major vegetable crops imported were onion and garlic (317,310 tonnes), potatoes (96,790 tonnes)(17%), cabbage (41,230 tonnes) and carrots (34,100 tonnes).

With a population exceeding 23 million people, Malaysia supports a diverse multi-racial population. Indigenous Malays (the bumiputera) and other indigenous groups comprise the majority of the population (65%). Ethnic Chinese (26%) and Indians (8%) are the two other major cultural groups. While rice is the staple food, potatoes are an integral part of the diet for both the Malays and Indians where potatoes are incorporated in various curries. Invariably, the demand is for firm yellow flesh potatoes that retain their shape after cooking. However, due to the disparity of income and with more than 15% of the population below the poverty line, Malaysia is a very price sensitive market. As a result, the majority of the demand is for the small, less expensive tubers.

Obtaining accurate information on the import market for potatoes in Malaysia is problematic. In the first instance, an examination of the HIS Codes reveals no record of any fresh potatoes having been imported into Malaysia. In the second instance, imports from Indonesia (in particular Sumatra) are not accurately reported. Under HIS Code

0714 9090, the Department of Statistics report that some 5,500 tonnes of assorted root and tuber crops were imported into Malaysia in 2001 (Table 2).

Table 2. Major importers of root and tuber crops into Malaysia.
(tonnes) (\$M 000)

	1999		2000		2001	
	Quantity	Value	Quantity	Value	Quantity	Value
China	3,396	5,397	4,234	7,146	3,958	7,324
Thailand	1,868	1,125	1,217	731	1,347	824
Vietnam	1,149	233	-	-	-	-
Hong Kong	294	267	456	527	135	183
Indonesia	252	109	70	25	28	13
Australia	19	17	-	-	-	-
Taiwan	16	12	-	-	-	-
Japan	5	60	7	32	5	28
USA	-	-	-	-	18	15
India	-	-	3	17	-	-
Singapore	-	-	-	-	4	17
Netherlands	-	-	1	8	1	6
France	-	-	-	-	-	-
TOTAL	6,999	7,220	5,988	8,486	5,496	8,410

Discussions with importers, wholesalers and retailers confirm that potatoes have been incorrectly reported under this category for some time. However, discussions with these same industry representatives cast much doubt on the validity of the reported statistics, for it was repeatedly suggested that the major suppliers of fresh potatoes to the market in Malaysia were Indonesia, China and the Netherlands.

The fresh potato market in Malaysia can also be broadly divided into three distinct market segments. The largest of these segments is the budget price market. This market segment is the most volatile, with supply frequently changing between Indonesia, China and the Netherlands depending upon availability, quality and price.

Potatoes from Indonesia are available all year round. The major variety cultivated (Granola) is well liked for it is tasty, versatile and the potato keeps its shape when used in curries. Being the most proximal supplier, it is easier to communicate with suppliers and to coordinate delivery in response to the market demand. However, and despite the proximity to the market, product from Indonesia is not always the most cost competitive. During December to April, product from The Netherlands is often cheaper. More recently, both India and Pakistan have entered the market and from April to July, New Zealand is shipping increasing quantities of good quality Granola to the market at very competitive prices. Since the product from Indonesia is often poorly packed, especially when the tubers had not been adequately cleaned of soil, and there are various problems associated with infestation by tuber moth and bacterial wilt, many of these alternative suppliers are expanding their market share at the expense of product from Indonesia.

Although China was supplying the market all year round, it is not until June-July that the Chinese product begins to dominate the market. For many importers, China is their preferred supplier. Product is generally consigned to the market in 10 kg cardboard cartons. The tubers are generally cleaner than those available from Indonesia and have a superior cosmetic appearance. The tubers are large (125 g), oblong, well graded and uniform, with an attractive gold skin and yellow flesh. However, the quality of the tubers consigned to the market often changes abruptly, depending upon the supplier. Chinese product is also reported to have a longer shelf life. As a result, fewer problems have been experienced at the retail level with tuber rotting and there is less wastage.

The Netherlands is the best of the European suppliers. Product is more uniform and there are fewer problems with shipping. It is generally accepted that Dutch potatoes have the best reputation in the market. However, further discussions with importers and traders suggested that it was not so much the country of origin that was important, but rather the variety. Both China and Indonesia often marketed their product as “Holland” potatoes.

In a similar manner, the market recognised “Russett” as a premium baking potato, thus forming the second market segment. While the US again dominated this market, there was, unlike Hong Kong, a general attitude of distrust and discontent towards the US as a supplier, with many importers and traders indicating that they were currently searching for alternative suppliers. An examination of the product both in the carton and on retail shelves readily revealed the reason why. No doubt, because of the price sensitive nature of the market in Malaysia, the quality of the product had been severely compromised. Not only were the tubers smaller (205 g), but the skins badly marked and cut.

The final market segment was the ultra premium market. This was the market for the large, cosmetically attractive, washed potatoes. Here the market was dominated again by Australia. However, this market segment is very small (perhaps less than 5% of the market) and is limited to the high-class supermarkets.

It was suggested that the potato market in Malaysia is generally stable all year round. Prices are relatively constant, although the source of supply often varies depending upon harvest times and the suppliers cost competitiveness. Prices are generally fixed with the supplier each week, but could also change abruptly if there was a significant change in competitor’s prices. Perhaps surprisingly, at least in the retail sector, potatoes were not considered to be price elastic. Any reduction in price did not result in a marked increase in the demand. Nevertheless, intense price competition between the various retail chains ensured that consumers were getting good value for money and not paying more for potatoes than the market could stand.

Singapore

Singapore is one of the most wealthy nations in South East Asia. However, as a city metropolis with limited land resources, local farms manage to produce only 2% of the fish, 4% of the vegetables and around 32% of the eggs consumed. As a result, Singapore is largely dependent upon imports to sustain the population.

In 1999, Singapore imported almost 355,000 tonnes of fresh vegetables. The major vegetables imported included onions, potatoes, garlic, cabbage and cucumbers. According to the statistics, Malaysia is the major supplier of fresh vegetables to Singapore (45%), however, it is important to note that vegetable imports from Indonesia are not officially recorded. Furthermore, despite Malaysia's close proximity to the market, vegetable producers in Malaysia are facing increasing competition from lower cost produce grown and imported from China. The Chinese share of the fresh vegetable import market in Singapore is steadily increasing and currently exceeds 21%.

Potatoes currently comprise over 9% of total imports by volume, but only 7% by value. China is reported to be the largest supplier of potatoes by volume (28%), but by value, China (22%) is second to Australia (24%)(Table 3).

Table 3. Major importers of fresh potatoes into Singapore.
(tonnes) (\$S 000)

	1999		2000		2001	
	Quantity	Value	Quantity	Value	Quantity	Value
China	10,407	4,254	5,883	2,355	8,727	3,738
Australia	6,803	4,370	6,968	3,783	6,733	3,960
Netherlands	5,785	2,467	6,810	2,411	4,234	1,836
New Zealand	5,374	2,840	6,559	2,671	6,110	2,996
USA	3,024	2,187	4,390	2,755	4,126	3,199
Hong Kong	587	226	56	21	88	38
India	358	112	27	9	130	60
Pakistan	292	98	225	56	321	100
Malaysia	230	101	112	104	416	421
Bangladesh	129	57	187	59	287	118
Taiwan	98	61	-	-	38	16
Vietnam	74	33	33	13	1	1
Japan	24	103	22	95	28	116
UK	23	20	-	-	81	43
France	1	3	5	15	4	19
Myanmar	-	-	-	-	36	7
Belgium	-	-	-	-	17	7
Others	54	34	-	-	-	-
TOTAL	33,263	16,967	31,276	14,348	31,377	16,677

The market in Singapore is comprised of three main sectors; (1) the domestic market; (2) the tourist market; and (3) entrepot trade. Despite the high standard of living, the wet markets still dominate retail sales for fresh fruit and vegetables. Currently, there are more than 110 wet markets in Singapore, but unlike Malaysia and Hong Kong, the Government has recently embarked upon a program of modernisation to relocate and upgrade the standard of food hygiene in the traditional wet markets. While the wet markets continue to meet the needs of the older, indigenous population, younger consumers and expatriates are purchasing what they require from the supermarkets.

Currently, there are four major retail chains in Singapore that collectively operate more

than 145 outlets. Cleanliness, comfort and convenience are the key drivers for growth in the supermarket sector, although, with increasingly levels of personal disposable income, consumers are becoming more demanding of quality and more aware of those brands which promise to deliver consistent quality.

In categorising the potato market in Singapore, importers suggested that the market was comprised of five segments. Segments One and Two were described as the mainstream retail market, although this segment was subsequently divided into two segments: wet market sales and supermarket sales. This was the major market segment, but it was also the most price sensitive. In order to gain a competitive advantage, importers sought to purchase the best quality potatoes at the lowest price. While Indonesia was the major and most regular supplier to this market, importers often changed suppliers depending on quality and price. China was the largest supplier from June-December, Australia and the Netherlands were the dominant suppliers in January-March, although it was readily apparent that imports from Holland were much more price competitive. Even so, the Netherlands were facing increasing competition from lower cost producers including New Zealand, who dominated the market from March-May and Bangladesh, Pakistan and India were all consigning greater quantities to the market in March to May.

The mainstream market generally preferred the Indonesian potato (Granola) as it had proven itself most suitable for soups and curries; the potato held its shape after cooking and had a good taste. However, tuber sizes were often too small, depending on the quality at harvest, and there were periodic problems with tubers rotting due to potato tuber moth and bacterial wilt.

Currently, several importers were sourcing Granola from New Zealand. The quality of the tubers was considered superior; tubers were larger, more uniform; there were fewer problems with tuber rotting; and the product was extremely cost competitive. Other than a slightly darker skin colour, the product was indistinguishable from the Indonesian product. However, since the market preferred Indonesian potatoes, the product was being regraded, repacked (into 18 kg bags) and sold as Indonesian product.

China generally supplied the market in 10 kg cardboard cartons. While the product was the most cost competitive during their main season of supply (June-December), the quality was highly variable. At the beginning of the season, the quality was very good, but as the season progressed, the quality often deteriorated quite abruptly.

During March-May, Bangladesh, Pakistan and India were all very cost competitive. However, importers again reported that while the quality of the early shipments was good, as the season progressed, quality declined and importers experienced greater losses from tuber rotting.

For December to March, the Netherlands was the preferred supplier. There were seldom any major problems with tuber rotting and the product readily met the needs of the market. Generally, the mainstream market preferred large, oval, yellow flesh potatoes with preferably a yellow skin. Tubers had to be visually appealing, with a smooth skin and shallow eyes. The preferred tuber size was 180-200 g (5-6 tubers per kg).

The second retail market segment was the baking potato. Dominated again by imports from the US, the demand for this market segment ranged between 230-450 tonnes per month, with an average of 350 tonnes per month. Prices were constant for most of the year, but as the supply began to diminish in June, there was a marked increase in the average price. Not unlike Malaysia, the cost sensitive nature of the Singapore market had resulted in consumers preferring a smaller tuber size (205g)(110 tubers per carton). Importers suggested that they would welcome competition in this segment of the market for there was a general perception that quality had deteriorated. An alternative supplier might be able to offer a more cost competitive product, but also seek to develop the market further, for it was reported that the food service sector required a larger tuber. It was also reported that most consumers understood that Russett was the predominant variety used for the manufacture of French fries.

The third retail market segment was for the premium washed potato. This product was required only by those supermarkets who sought to target the most affluent consumers. Considered to be the smallest market segment, this segment was perceived to be already saturated with product consigned primarily from Australia.

For the food service market, there were two clear subdivisions based primarily on tuber size. While many restaurants preferred large potatoes for baking or the preparation of French fries on the premises, others (including Singapore Airlines) required small baby (gourmet) potatoes.