

## The Singapore Market for Fresh Fruits and Vegetables

*This market survey was produced by the USAID-funded Agribusiness Development Project (ADP) in Indonesia. It was authored by Henry Harmon, Marketing Advisor, in June 1994 in Jakarta. Note that tables for the sections "Notes of Fruit Imports" and "Notes on Vegetables Imports" are not included on this site due to size limitations.*

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### FOREWORD

This is the first in a series of reports which will address the potentials of Indonesia exporting fresh fruits and vegetables, particularly higher value horticultural products, to regional and ultimately international markets. ADP has selected high value fresh export horticulture as a central theme for the future for the following reasons:

- Development of this industry will lead to a general improvement in the quality of all fresh fruits and vegetables on offer, for both domestic and export markets, and will have an effect on nutrition, taste, post harvest losses, and price received by the farmer.
- Regional markets in Asia, such as Japan, Taiwan, Korea, Malaysia, and Singapore have rapidly rising or already high labor costs and thus have both the demand and the ability to pay for imported fresh fruits and vegetables. Simultaneously, these markets (with the exception of Japan) are generally less rigorous in their quality requirements than are the European markets.
- Increased trade liberalization brought about by GATT indicates that markets which were formerly restricted will increasingly become open, though there are still non-tariff barriers to trade, such as phytosanitary requirements, which will have to be overcome. This will require active intervention by the Government of Indonesia.
- Penetration of the export horticulture market will require the employment of many new farmers and the development of ancillary industries, initially in the packaging and cold storage areas.
- Ultimately, the stimulation to production which may be caused by export development may lead to the creation of higher value canning, freezing and processing industries.
- High value horticulture is a specialized area which offers a microcosm of the larger issues of Indonesian agribusiness: small holder-processor relations, small farm credit, development of the farmer as the ultimate agribusinessman, requirements for market orientation and demand driven production decisions, and the development of specialized infrastructure are all important considerations for the development of a horticultural industry of some magnitude.

Note that the term "apparent disappearance" is used throughout this report: this is an approximation of consumption. A truer measure of consumption would entail knowledge of beginning stocks, to which would be added imports, less exports, less ending stocks. For perishable horticultural products, especially over a time series such as that presented here, such detail is not available nor would the presence of such data add extensively to our knowledge of the market.

### EXECUTIVE SUMMARY

1. In 1992, Indonesia exported some US\$32 million of fresh fruits and vegetables to worldwide destinations.
2. Of this, almost US\$24.5 million went to Singapore, but as will be seen, Indonesia's overall market share of the total Singapore market is only 4.2%, and the overwhelming majority of Indonesian exports to Singapore are concentrated in just a few items: coconuts, cabbages and potatoes, all relatively low value products that have the advantage of being simple to grow and requiring only minimal postharvest handling.
3. In the tables that follow, please note that since Singapore does not report separately imports of goods from Indonesia, it has been necessary to employ Indonesia's reported exports to Singapore as a "proxy" for imports, and thus there is a tendency to undervalue Indonesia exports, since they are reported on an f.o.b. basis, while Singapore imports are generally recorded on a c.i.f. basis. Also note that this report is based on 1992 data: an updated version will be issued on release of the detailed Indonesia export statistics for 1993. The above bias is somewhat overcome in the detailed tables of Singapore imports by commodity and country of origin, since the emphasis in those tables is on tonnage rather than dollar volume.

TABLE 1				
SINGAPORE MARKET FOR FRESH FRUITS AND VEGETABLES AND INDONESIA MARKET SHARE, 1992				
IN 000'S OF SINGAPORE DOLLARS AND %				
PRODUCT	SINGAPORE IMPORTS	INDONESIA EXPORTS	TOTAL	INDONESIAN SHARE
Vegetables, Fresh or Chilled	293,013	18,324	311,337	5.89%
Fruits and Nuts, Fresh or Dried	563,331	19,246	582,577	3.30%
Total	856,344	37,570	893,914	4.20%

4. As can be seen in Tables 2 and 3, Indonesia exports large amounts of only a very few products to Singapore. For vegetables, potatoes and cabbage, both low value products, account for almost 75% of Indonesia's exports to Singapore, with green onions and tomatoes accounting for virtually all the remainder. Indonesia is the fifth largest supplier of fresh vegetables to Singapore, but lags far behind Malaysia and China, each with \$64 million, Australia at \$52 million and India with \$20 million (Table 7).

TABLE 2				
SINGAPORE SELECTED TOP VEGETABLE IMPORTS, 1992				
IN 000'S OF SINGAPORE DOLLARS				
PRODUCT	SINGAPORE IMPORTS	INDONESIA EXPORTS	TOTAL	INDONESIAN SHARE
Fresh Leafy Vegetables	55,294	3	55,297	0.0%
Fresh Garlic	34,294	2	34,296	0.0%
Fresh Onions	30,350	2,406	32,756	7.3%
Fruited Legumes and Vegetables	19,391	2	19,393	0.0%
Fresh Manioc and Sweet Potatoes	14,609	891	15,500	5.7%
Fresh Cauliflower	13,498	1	13,499	0.0%
Fresh Carrots	13,401	4	13,405	0.0%
Fresh Cabbage	10,325	5,504	15,829	34.8%
Other Alliaceous Vegetables	7,370	263	7,633	3.4%
Fresh Potatoes	6,743	7,709	14,452	53.3%
Fresh Chillies	5,885	13	5,898	0.2%
Fresh Tomatoes	4,819	1,026	5,845	17.6%
Total	215,979	17,824	233,803	7.6%

For fresh and/or dried fruits and nuts, again there is a high concentration in a low value product, with more than 75% of Indonesia's exports of the top fruits and nuts being accounted for by coconuts, and virtually all the remainder of the category being accounted for by cashews. There are virtually no fresh fruit exports from Indonesia to Singapore. Indonesia is the sixth leading supplier of fruits and nuts to Singapore, (Table 6), but lags far behind the United States and Malaysia, with S\$113 and S\$112 million worth of exports respectively, Australia with more than S\$95 million, and China with S\$82 million. Even comparatively tiny New Zealand ships \$24 million worth of fresh fruits and nuts to Singapore, compared with Indonesia's \$19.2 million.

PRODUCT	SINGAPORE IMPORTS	INDONESIA EXPORTS	TOTAL	INDONESIAN SHARE
APPLES	79,034	9	79,043	0.0%
ORANGES	74,282	0	74,282	0.0%
PEARS AND QUINCES	53,584	0	53,584	0.0%
DURIAN	44,111	269	44,380	0.6%
MANDARINS AND TANGERINES	33,338	0	33,338	0.0%
MELONS	23,237	15	23,252	0.1%
OTHER FRESH FRUIT	21,885	326	22,211	1.5%
BANANA	13,273	6	13,279	0.0%
PAPAYA	5,605	5	5,610	0.1%
PINEAPPLE	3,185	35	3,220	1.1%
COCONUTS	5,568	13,548	19,116	70.9%
CASHEWS	20,967	3,393	24,360	13.9%
TOTAL	378,069	17,606	395,675	4.5%

The high concentration of sales in low value products and the relatively low market share of Indonesia in the total Singapore market indicates there is a need for crop diversification in Indonesia, and that there is a significant opportunity for farmers, exporters and entrepreneurs to increase incomes, increase export earnings for Indonesia and to build new businesses. Simultaneously, the over-dependence of Indonesia on Singapore, and the fact that one market accounts for the majority of the country's fresh fruit and vegetable exports indicates a further need for future market diversification: this can probably be best brought about through crop diversification with an emphasis on the Singapore market, then on regional markets and finally on international markets. The gradual diversification will allow farmers time to adjust to new technologies needed to raise new crops, and allow for the development of necessary infrastructure and the development of human resources necessary to man it.

#### **Recommendations:**

Observations in the marketplace, the results of this study and conversations with importers and buyers in Singapore have revealed the following:

1. While Indonesia already has a significant share of the cabbage market, this can still be expanded by diversification into Chinese type cabbages as opposed to the round/oval types.
2. Fresh potato market value and tonnage is inhibited by the presence of only two types of planting material, both of which are high water, low solids content potatoes and which have high spoilage losses. The introduction of baking and/or chipping potatoes would improve market access and volume.
3. There is significant room for growth in both the green onion and tomato markets, but this will be dependent on the development of improved postharvest handling and the introduction of suitable storage facilities.
4. Indonesia needs to diversify its resource base and produce more and different types of vegetables for Singapore - as one importer put it, "I can sell anything you can grow in Indonesia in Singapore if you can get it to me on time, in good condition."
5. Green leafy vegetables in general represent a major opportunity for the Indonesian farmer, if the necessary infrastructure can be put in place. This refers to the "cold chain" necessary to keep product in peak condition from time of harvest to time of delivery in Singapore.
6. For fruits, there is little reason to attempt to increase market share for the already saturated coconut category,

- and probably little reason to emphasize cashew (most of which are re-exported anyway).
7. Pineapple would appear to offer a significant opportunity, since the competing fruit is primarily of Malaysian origin and is of the Spanish/Singapore type. While this has previously been an inexpensive fruit, the increasing Malaysian labor costs, coupled with the inferior qualities of their variety in comparison to the Smooth Cayenne grown in Indonesia would appear to make Malaysia vulnerable.
  8. Durian, mandarins/tangerines, and melons would also all appear to offer diversification opportunities for Indonesia.
  9. Singapore market priorities are, in order, quality, consistency and finally price.

### MARKET OVERVIEW

Singapore is a market whose importance is belied by both its size (250 square miles) and its population (2.6 million).

The Republic of Singapore consists of 55 islands, of which the Island of Singapore is the largest, accounting for 95% of the Republic's land area. Singapore lies just above the equator at the southern tip of Peninsular Malaysia, to which it is joined by a causeway, enabling free vehicular and rail movement.

Singapore's strategic location at the heart of the sea lanes linking the South China Sea and the Indian and Pacific Oceans has caused it to become a major shipping point for ocean freight, with a ship entering or leaving the harbor almost every five minutes. Singapore's strategic location has also led to the development of a significant airfreight and passenger capacity, and the country counted about 6 million tourists in 1993.

The country's lack of strategic resources other than its harbor, caused it to turn early on to the development of Singapore as a major business and financial center and repository for light manufacturing skills, particularly those with a high technology component.

Due to its lack of land and the relatively high level of manufacturing skills (and the associated high labor costs) Singapore produces almost none of its food requirements, other than modest amounts of fresh vegetables (estimated to be in the range of 30,000 tons per annum). The nation's last hog facility closed down in 1990, and the country is now virtually dependent on imports for its food requirements. There are some food processing facilities in the country, but even these depend on imported raw materials/ingredients.

Imports of fruits and vegetables of all types, whether fresh, canned, frozen, or provisionally processed in the past four years have exceeded S\$ 1 billion per year. (Table 4.) Note that these are imports recorded by the Singapore Trade Development Board, and thus exclude exports from Indonesia, so that the total market is actually somewhat larger than reflected.

TABLE 4	
SINGAPORE IMPORTS OF FRUITS AND VEGETABLES (includes fresh and processed) 1989 - 1992	
IN 000'S OF SINGAPORE DOLLARS	
1989	1,077,074
1990	1,102,018
1991	1,262,738
1992	1,248,942

For 1992, the latest year for which statistics are available, the breakdown by form is as shown in Table 5.

TABLE 5	
SINGAPORE	
IMPORTS OF FRUITS AND VEGETABLES IN 1992	
BY STAGE OF PROCESSING	
IN 000'S OF SINGAPORE DOLLARS	
VEGETABLES, FRESH/CHILLED	293,013
ROOTS AND TUBERS, PREP/PRESER.	183,860
FRUITS AND NUTS, FRESH/DRIED	563,331
FRUITS, PRESERVED	165,672
FRUIT AND VEGETABLE JUICES	43,065

This report will concentrate on the two "fresh" segments, of which Singapore's 1992 imports (again, excluding Indonesia) totalled S\$856,344,000 or approximately US\$ 535 million. (Based on a conversation rate of S\$1.60 = US\$1.00.)

The major market characteristics are:

1. A small base population of 2.6 million, with an average per capita income in excess of US\$ 10,000 per year. The average Singaporean has travelled or been exposed to many other cultures. The population mix is roughly 75% Chinese, 15% Malay, 6% Indian, 4% "other" or mixed. In addition there are more than 200,000 resident expatriates. These traits combine to produce a culture in which dining out is a common occurrence, the ability to pay for high quality and "different" foods is present, and where the general populace is adventuresome in eating.
2. A significant tourist industry adds almost 6 million tourists to the base population, and an average tourist stays three nights. This population creates a significant demand for temperate and high value tropical fruits and vegetables, largely through the hotel and restaurant trade.
3. A large chandlery market to service the ships arriving and departing port, many of whom will be weeks at sea, and also to service the oil rig market (Singapore is the world's third largest oil refining center).
4. A rapidly and consistently expanding economy where the average housewife is employed and thus has less time for food preparation but an increased ability to pay for and consume fast and snack food items, such as fresh fruit.
5. A government that is encouraging the development of healthy eating habits, and, in particular, the consumption of fresh fruits and vegetables, as well as fruit juices.

#### FRESH FRUIT AND VEGETABLE IMPORTS

As can be seen in Table 6, the United States is the leading supplier of fresh fruits and nuts to this market, followed closely by Malaysia, then Australia and China. The four leading suppliers account for S\$ 403,985,000, or almost 72% of the dollar volume of all fresh fruits and nuts, while the top 11 supplying countries account for more than 90%. Indonesia ranks as the sixth leading supplier of fresh fruits and nuts, but this is largely based on Indonesia's position as a leading supplier of coconuts, and as a secondary supplier of cashews. Actual fruit exports are minimal. (See Tables 10 through 29.)

TABLE 6	
SINGAPORE	
LEADING SUPPLIERS OF	
FRESH FRUITS AND NUTS	
IN 000'S OF S\$	
U.S.	113,693

MALAYSIA	112,269
AUSTRALIA	95,949
CHINA	82,074
NEW ZEALAND	24,858
INDONESIA	19,246
THAILAND	16,236
OC AFRICA	15,453
INDIA	13,126
CHILE	9,040
JORDAN	9,038
<b>TOTAL TOP 11</b>	<b>510,982</b>
<b>TOTAL IMPORTS</b>	<b>563,331</b>
<b>TOP 11 AS %</b>	<b>90.7%</b>

Table 7 portrays the leading suppliers of fresh vegetables to Singapore. Malaysia is the #1 supplier, followed closely by China and then Australia and India. The top four suppliers of vegetables account for 68% of the total dollar volume, which is less concentration than for fruits, while the top nine account for more than 90% of the volume. Based on reported exports, Indonesia ranks as the fifth leading supplier of vegetables to Singapore. Were Indonesian exports recorded on a c.i.f. basis in Singapore, Indonesia would probably be ranked as the number four supplier.

TABLE 7	
SINGAPORE MAJOR SUPPLIERS OF FRESH VEGETABLES, 1992	
IN 000'S OF SINGAPORE DOLLARS	
COUNTRY	AMOUNT
MALAYSIA	\$64,931
CHINA	\$64,138
AUSTRALIA	\$51,993
INDIA	\$19,596
INDONESIA	\$18,324
UNITED STATES	\$16,677
BURMA	\$15,353
THAILAND	\$12,514
TAIWAN	\$11,058
<b>TOTAL ABOVE</b>	<b>\$274,584</b>
<b>TOTAL IMPORTS</b>	<b>\$293,013</b>
<b>TOP 9 AS %</b>	<b>93.7%</b>

#### MAJOR MARKET SEGMENTS

Trade estimates are that for the higher value fruits and vegetables, 20% of the volume is at retail, 50% is through hotels and restaurants and other institutions, and 30% is through ships chandlers and oil rigs.

The retail/consumer market is segmented into the traditional "wet markets" believed to account for 75% of the retail trade in fresh fruits and vegetables, and the newer supermarkets, which account for the remainder. Government policy is to discourage the growth of wet markets, in favor of the more hygienic supermarket. While supermarkets traditionally catered to the expatriate and the higher income Singaporean, government policy is encouraging construction of supermarkets in more moderate income neighborhoods.

Major supermarkets include Cold Storage, Jason's, NQC Fair Price, and a group of Japanese retailers, including Daimaru, Tokyu, Sogo and Yaohan.

Trade estimates are that for every dollar spent on food consumed at home, another dollar is spent for food consumed away from home - either at one of the ubiquitous Western style fast food establishments, a hawkers' stall or a fine dining restaurant. Increased incomes, the lack of space and refrigeration for the preparation and storage of food, the lack of time and the desire to accomplish something other than meal preparation (hobbies, sports, shopping, etc.) and the increased consumption of snacks and "take home" foods driven by promotional campaigns have all encouraged this trend. In addition, the presence of 6 million tourists, all in a "spending mood" to sample the new and exotic or to bear the high prices of their familiar temperate zone fruits and vegetables, drives demand for high quality fresh fruits and vegetables.

The chandlery/oil rig market is a large and lucrative market in Singapore. The requirement for high quality produce is driven primarily by the desire to raise employee morale.

### CHANNELS OF DISTRIBUTION

This is a buyer dominated market with relatively large retail margins and small wholesaler/importer margins. While there are more than 200 importers/wholesalers centered at Pasar Pajang Wholesale Market, only 30 or so of these dominate, and for the high value products, perhaps only a dozen or so are active traders.

Channels of distribution tend to vary with the value and degree of perishability of the product. Highly perishable and valuable commodities such as strawberries tend to go directly from the importer to the larger retailers and the hotels/restaurants, while less perishable (and less valuable) items such as onions will follow a more traditional importer to wholesaler to retailer route.

### TRANSPORTATION

Singapore is well-served by air, sea, truck and rail routes, with (depending on the year), the first or second busiest port in the world and service from more than 60 international airlines. Most Malaysian and Thai produce arrives in the market by truck direct from the producing area.

Current rates from Medan to Singapore are quoted as: for a forty foot reefer \$1600, for a forty foot dry box \$600, and for airfreight US\$.40 per kilo. From Jakarta to Singapore, rates are quoted at: for a forty foot reefer US \$2000, for a forty foot dry box \$400, for a twenty foot dry box \$200, and for airfreight US\$.50 per kilo.

Category 7 (fresh fruits and vegetables) rates quoted by Garuda from Jakarta to Singapore are:

0-20 kilos US\$29 (flat rate)  
 20-45 kilos \$1.47 per kilo  
 45-100 kilos \$1.18  
 100-300 kilos \$0.96 per kilo  
 1 ton \$0.84 per kilo

The differential between the rates quoted by Garuda and the rates found to be in effect by exporters may be explained as the difference between the "asking price" and the "deal price," and is common in airfreight. Such high quotes, however, serve to discourage potential new exporters from even cursory further investigations of the possibilities of exporting Indonesian fresh fruits and vegetables. (*It was reported last year, while the author was shipping melons to Singapore from Sri Lanka, that Australian air freight rates were \$.28 per kilo from anywhere in Australia to Singapore or Hong Kong. Recent discussions with Singapore importers indicate that rates from California of as low as US\$.65 per pound can now be negotiated for volume shipments occurring on a routine basis.*)

Potential exporters should investigate the possibility of quoting an f.o.b. Indonesia price, since importers are frequently in a better position to negotiate favorable rates.

There is a reported monopoly on reefer containers between January and March. The exporters usually have 3 days free electricity at each shipment, but when the "monopoly" is in effect the exporter must pay by the hour for each shipment. Service is reported to be excellent.

### PRICING AND MARGINS

Normal wholesale - retail markups for bulk commodity type items are in the 50-60% range but for the more perishable exotics and for the temperate zone fruits and vegetables, markups of 100% and more are common. Retail prices of selected fresh fruits and vegetables available in a typical chain in March 1994, are shown in Table 8.

Table 8 RETAIL PRICE LIST SINGAPORE, MARCH, 1994	
FRUITS:	
Oranges	4 for \$ 1.00
Red Globe Grape	\$ 6.90/ kg
Red Apple	\$ 1.95 / kg
Sunkist Navel	\$ 1.99 / kg
Mandarin Pakistan	\$ 1.65 / kg
Pear	3 for \$ 1.80
Israel lemon	\$ 0.40 each
Kiwi	3 for \$ 0.99
Banana Dole	\$ 1.80 / kg
Honey Mango Thailand	\$ 1.75 each
Fuji Apple	\$ 19.50/ kg
Plum	\$ 7.90/ kg
Indonesia Salak	\$ 5.90/ kg
Indonesia Melon	\$ 9.90 each
Malaysia Coconut	\$ 1.95 each
Avocado Indonesia	\$ 6.90/ kg
Avocado U.S.	\$ 22.00/ kg
Guava Malaysia	\$ 0.90 each
Mangosteen Indonesia	\$ 5.90 / kg
Papaya Malaysia	\$ 1.50 each
Pineapple Ipoh	\$ 5.90 each
Australia Mango	\$ 6.50 each
Thailand Mango	\$ 1.75 each
Young Coconut	\$ 1.95 each
Passion Fruit	\$ 9.90 / kg
Salak	\$ 5.50 / kg
Melon	\$ 9.90 each
Durian Paste	\$ 2.75 / 125 gr
INDONESIAN COFFEE:	



Toraja Coffee - Royal	\$ 13.30 / 200 gr
- Mild	\$ 11.30 / 200 gr
- Toarev	\$ 15.50 / 200 gr
Vegetables:	
Red Cabbage Australia	\$ 4.90 / kg
Asparagus Thailand	\$ 12.90 / kg
Bangkuang	\$ 1.70 / kg
Chey Sim	\$ 3.50/ kg
Bitter Gourd	\$ 3.90 / kg
Sweet Corn	\$ 1.90 /2
Yellow Pepper	\$ 13.50/ kg
Orange Pepper	\$ 13.50 / kg
Red Pepper	\$ 9.50/ kg
Green Pepper	\$ 5.50/ kg
Gobo	\$ 19.90/ kg
Tomato Beef Holland	\$ 9.90/ kg
Button Mushroom	\$ 16.90/ kg
Savoy Cabbage	\$ 2.90/ kg
Australia Asparagus	\$ 15.90/ kg
Garlic	\$ 5.50/ kg
Onion	\$ 4.90/ kg
Shallot	\$ 4.90/ kg
Old Ginger	\$ 3.90/ kg
Young Ginger	\$ 4.90/ kg
Plum Tomato Indonesia	\$ 3.04/ kg
Tomato Indonesia	\$ 2.50/ kg
Japan Cucumber	\$ 2.93/ kg
Japan Egg Plant	\$ 9.90/ kg
Tan Sun Q	\$ 2.55/ kg
Snow Peas	\$ 7.50/ kg
Sugar Beans	\$ 9.90/ kg
Asparagus Thailand	\$ 12.90/ kg
Baby Corn	10 for \$ 0.79
Leeks	\$ 0.65/ bag
Thai Choi	\$ 0.69 / bag
Russet Burbank Potato	3 for \$ 1.20
Australia Potato	\$ 1.50 / kg
Peeled Onion	3 for \$ 1.50
Carrot	\$ 3.90 / kg
Small Lime	\$ 3.90 / kg

Large Lime	\$ 4.50 / kg
Water Chestnut	\$ 5.50/ kg
Long Bean	\$ 3.50 / kg
Bitter Gourd	\$ 3.90 / kg
French Bean	\$ 3.90/ kg
Red Brinjal	\$ 3.50 / kg
Okra	\$ 3.90/ kg
Chayote	\$ 1.90 / kg
Button mushroom	\$ 4.90 / bag
U.S. Lettuce	\$ 5.50 / kg
Indonesia Cabbage	\$ 1.50 / kg
China Small Cabbage	\$ 4.90 / kg
China Long Cabbage	\$ 3.50 / kg
Australia Carrot	\$ 2.50 / kg
Cauliflower	\$ 3.90 / kg

### PACKAGING

Acceptable packaging at the wholesale market at the current time includes bamboo baskets, wooden crates and corrugated cartons. There is an extensive amount of repackaging which takes place at the wholesale market, its major purpose being the elimination of any identifying marks which would allow the buyer to circumvent the normal channels of distribution. The amount of repacking varies inversely with the perishability and value of the product - items such as strawberries and asparagus, being of high value and high perishability, tend not to be repacked, whereas low value, high volume items such as cabbage and potatoes, are. This also serves to eliminate spoilage, since any product deterioration which has taken place in shipment is sorted out, and decayed cabbage leaves are removed from the exterior of the vegetables.

Discussions with the trade in Singapore indicate that disposability of packaging, particularly baskets and wooden boxes, is becoming a problem, and that there have been recent efforts by Chinese suppliers to introduce returnable containers. This may be worth consideration by Indonesian exporters and the appropriate trade associations.

### TERMS OF TRADE

There are basically two methods of selling fresh fruits and vegetables in the Singapore market:

**Consignment sales.** This is the most common method, but it passes the risk of spoilage, price drops, currency revaluations, etc. back to the exporter. The normal commission on a consignment sale is 5-10%, plus an additional 2-3% "handling charge." Commission charges will vary according to the amount of work required of the importer - if it is a "pass through" sale, where he is only required to take care of physical handling, and not make sales calls, etc, it is sometimes possible to negotiate a commission which is only in effect the handling charge.

**Fixed price.** This is much less common, but is sometimes possible, even with a firm Letter of Credit, if the exporter has a unique product in high demand, or has upscale merchandise and a long history of successful dealing in the market.

### QUALITY STANDARDS AND FOOD SAFETY REGULATIONS

As of the writing of this report, these areas are covered under the "Sale of Food Act", Act 12 of 1973 and Food Regulations 1988. However, there is new legislation slated to take effect in early 1994. The new laws will be included in the 1993 report.

Generally, Singapore quality requirements are not rigorous, being of the type "food must be wholesome, free from adulteration, contain no prohibited additives, and be fit for human consumption." Quality standards are more a matter

of market requirements, in that the highest quality foods will fetch the highest prices. There is no requirement for a phytosanitary certificate.

Packaging laws are equally lenient, unless the producer is packing in a pack for direct consumption by the consumer. If so then packaging must contain: trade name, net weight or number, true measure or volume, quality, strength, purity, composition and proportion of the contents, and the name and address of the importer, manufacturer or packer. Since most fresh fruit and vegetable items are packed in a bulk container, from which the consumer selects his/her choice, these packaging regulations do not apply and the relevant legislation requires :

"No person shall sell any items ..... packed in a package or container for sale as a single item unless there appears on a label, marked on or securely attached to the package or container, the name and business address, in English, of the packer of the package or container."

Singapore has stringent regulations, which are enforced, concerning permissible levels of pesticide residues on foods. While space does not permit a complete listing of these limits, some of the more commonly used pesticides, etc. in Indonesia and their accompanying limits appear in Table 9.

Table 9		
SINGAPORE MAXIMUM LEVELS OF RESIDUES FRESH FRUITS AND VEGETABLES		
Substance	Maximum Residue Limit (ppm)	Type of Food
Aldrin	0.1	Asparagus, Broccoli, Brussels Brussels Sprouts, Kale, Cabbages, Cauliflowers, Carrots, Cucumbers, Eggplants, Lettuce, Onions, Parsnips, Peppers, Pimentos, Potatoes, Radishes, Radish Top
	0.05	Citrus Fruit
Benomyl	10	Citrus Fruit
	5	Peppers, Berry Fruits, Mangoes, Carrots, Lettuce
	3	Avocadoes, Vegetables, Potatoes
	2	Grapes, Rock Melons, Beans Celery, Gherkins
	1	Bananas
	0.2	Peanuts
	0.1	Onions, Asparagus
	20	Potatoes, Soya Beans, Spinach, Strawberries
	15	Citrus Fruits, Tomatoes
	10	Cucumbers, Lettuce, Green Beans, Peppers
Carbendazim	10	Citrus Fruits
	5	Tomatoes, Peppers, Berry Fruits

	5	Tomatoes, Peppers, Berry Fruits
	3	Potato
	2	Gherkins, Mangoes, Melon
	1	Bananas, Mushroom, Sweet Potatoes
	0.5	Cucurbits, Avocado, Cucumbers, Eggplants
	0.2	Soya Bean
	0.1	Onion, Asparagus
Carbofuran	2	Brussels Sprouts
	0.5	Cabbage, Carrots, Potatoes
	0.1	Onions, Banana, Eggplants, Lettuce, Maize, Strawberries, Sweet Corn, Tomato
Chlorodane	0.02	Vegetables, Fruit
Chlorofenvin-phos	0.4	Carrots, Celery
	0.1	Radish, Tomatoes
	0.05	Cabbages, Turnips, Sweet Potatoes, Leeks, Onions, Eggplants, Mushrooms, Nuts, Maize Cabbage, Grapes
Chloropyrifos	1	Cabbage, Grapes
	0.5	Carrots, Peppers, Tomatoes
	0.3	Citrus Fruits
	0.2	Beans, Eggplants
Dieldrin	0.1	Asparagus, Carrots, Broccoli, Cauliflower, Brussels Sprouts, Cabbages, Cucumbers, Carrots, Eggplant, Horseradishes, Lettuce, Onions, Peppers, Potatoes, Radish Tops.
	0.05	Fruits
Diquat	0.2	Potatoes
	0.1	Onions, Maize, Peas
Dithiocarba-mates	5	Grapes, Celery, Currants
	3	Apples, Peaches, Strawberries, Tomatoes
	2	Brassicas and other Leafy Vegetables, Beans
	1	Banana
	0.5	Carrot, Beans, Cucumber
	0.1	Potatoes
EDB (Ethylene dibromide)	2	Asparagus
	0.1	Fruits, Vegetables
Endosulfan	2	Vegetables (Except Below)
	0.2	Carrots, Potatoes, Sweet Potatoes, Onions.
Fenitrothion	2	Grapes, Lettuce

	0.5	Cabbages, Pears, Peas, Tomatoes, Strawberries
	0.2	Leeks, Radishes
	0.1	Other fruits and Vegetables, Peppers
	0.05	Cucumbers, Onions
Fenthion	2	Most Fruit
	1	Bananas, Cabbages, Cauliflowers
	0.5	Grapes, Peas, Tomatoes
	0.2	Citrus juice
	0.1	Onion, Sweet Potatoes
	0.05	Potatoes
Maleic hydrazide	50	Potatoes
	15	Onions
Mancozeb (See Dithiocarbamates)		
Maneb (See Dithiocarbamates)		
Metalazyl	1	Grapes, Citrus Fruit, Spinach
	0.5	Broccoli, Cabbage, Cauliflowers, Gherkins, Cucumbers, Tomatoes
	0.2	Melons, Watermelons
	0.1	Avocados, Potatoes
	0.05	Onions, Peas, Sugarbeets
Mevinphos	1	Broccoli, Cabbages, Strawberries
	0.5	Grapes, Spinach
	0.2	Cucumbers, Tomatoes
	0.1	Carrots, Onions, Peas, Potatoes, Turnips, Beans
	0.5	Tomatoes, Bananas
Monocrotophos	0.2	Beans, Cabbages, Cauliflowers, Citrus Fruits
	0.1	Onions, Peas
	0.05	Potatoes, Carrots, Maize, Soya Beans, Turnip
Paraquat	0.2	Potatoes, Passion Fruit
	0.1	Maize
	0.05	Vegetables, Fruits, Sugar Cane
Thiabendazole	10	Citrus Fruits
	5	Potatoes
	3	Bananas, Strawberries
	2	Tomatoes
	.5	Mushrooms
	.1	Onions
Thiram	7	Bananas, Celery, Onion Bulbs, Strawberries, Tomatoes

Zineb (See Dithiocarbamates)
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Tolerances for arsenic, lead and copper are treated separately and are for arsenic, 1 ppm, lead 1 ppm, and copper 30 ppm on any fresh fruit or vegetable. (For pickles, the tolerances respectively are 1, 2, and 30).

#### NOTES ON STATISTICAL SOURCES

1. Singapore data for 1990, 1991 and 1992 is from Singapore Trade Statistics published by the Singapore Printing Office.
2. Volume data are in metric tons, unless otherwise specified, and dollars refer to either U.S. or Singapore dollars as specified in the headings to each table. The current conversion rate is S\$ 1.60 = US\$ 1.00.
3. Where prior years' and seasonality data are referred to, this is from a similar study completed in 1990 which examined both annual and monthly import data.
4. Import values are C.I.F. Singapore, but exclude any import duties or other import changes.
5. Export values are f.o.b. Jakarta.
6. Goods on consignment are valued at current import/export prices.
7. As imports from South Africa have been banned for more than two decades, (though the ban was recently lifted), the category "O.C. Africa" should be treated with caution. Large quantities of fruit from Mozambique, for instance, are probably transshipment of South African fruit.
8. The Government of Singapore purposefully excludes publication of imports from Indonesia, for both political and statistical reasons. In the case of fresh fruits and vegetables, this understates the true level of imports into Singapore. According to trade sources, this is particularly true of vegetables. The problem is less pronounced for fruits, and for high value perishable fruits, non-existent.
9. For completeness, the tables of annual data include both imports and exports. This is because Singapore carries on a significant, though diminishing, entrepot trade, especially with Brunei, Seychelles, and Malaysia. For any particular item, exporters are advised to examine both import and export data to ascertain where their goods are likely to end up and to judge whether the appointment of other agents in other countries may be warranted. This would avoid paying a Singapore agent performing only a "pass through" service.
10. In a few cases categories have been undergoing definitional changes: for example, dried garlic is no longer reported separately, while lemon and lime data, formerly broken out separately, have been consolidated.
11. For some citrus categories, the statistics do not distinguish between fresh and dried. For purposes of this analysis, it is assumed that all citrus is fresh.
12. Temperate fruits and vegetables are included in these tables not because it is suggested that they could be sourced out of Indonesia, ( although some can indeed be successfully produced in Indonesia,) but rather because these fruits and vegetables are significant (and in some cases dominant) in the trade. To try to understand the Singapore market for fresh fruits and vegetables without looking at temperate zone inputs could lead to some erroneous conclusions.

Similarly, crops in which Indonesia might not be expected to be able to compete are included generally because the tonnage of these low value highly perishable crops is so large.

#### NOTES ON FRUIT IMPORTS

1. Temperate zone fruits, including oranges, account for approximately 37% of the fruit imports into Singapore by value.
2. Durian accounts for almost 10% of the fruit trade by value, and when in season, this fruit is a dominant factor in the fruit trade of Singapore.
3. Honey mangoes from Thailand are another fruit which generates significant consumer and retailer interest, and when available, this fruit "excites" the market.

#### ORANGES

1. In the years since 1980, orange imports into Singapore have averaged in the mid-40,000 ton range, and in 1992 finally surpassed the 50,000 ton mark.
2. While tonnage has been fairly flat, reflecting a mature market, dollar values have increased markedly, from levels of mid S\$ 30 million in the early 1980's to the mid S\$ 70 million range in the 1990's. This reflects increased prices per ton.
3. Reexports have remained constant throughout the period at a level of 8-10,000 tons, with Malaysia as the chief export destination.
4. Oranges are consumed in Singapore both for fresh "out of hand " eating and for the production of fresh squeezed juice, popular in hotels and restaurants. Sunkist, the US cooperative, has for many years held in-store

promotions in Singapore promoting the consumption of fresh juice and sponsors sign board advertisements on public transport buses, etc.

5. Oranges have historically been available year round in the market from the US and from Sept to March from Australia. A lower quality fruit is also available from Thailand year round. The tonnage from OC Africa probably reflects South African origin fruit, as until recently, trade with that country was prohibited.
6. The market is dominated by the US, mostly through the US cooperative "Sunkist" Note that in 1991, US exports dropped significantly, reflecting poor growing conditions in California, and that Australia moved quickly to usurp market share. US share quickly rebounded in 1992 however, and this probably reflects the brand loyalty developed over the many years of Sunkist advertising.
7. The imports from China are particularly associated with the Chinese New Year, and imports from that country are usually concentrated in the one month leading up to New Year, as a gift of oranges at this time is associated with good luck and good fortune, etc.
8. Indonesian market share of the Singapore orange market is zero. This reflects both the fact that there is an extremely large domestic Indonesian market for oranges, that degreening technology employing ethylene gas to change skin color is not employed in Indonesia, and that the citrus industry in Indonesia is not well-developed.

### MANDARINS AND TANGERINES

1. Imports of mandarins and tangerines have usually been at about one half the level of those of oranges, and have exhibited consistent growth in the years since 1980, increasing from 9-10,000 ton levels in the early 1980's to current levels in the low 20,000 ton range.
2. The major supplier is China, followed by Taiwan. As with the orange trade, mandarins and tangerines have a tradition associated with them: in this case with wealth and prosperity by the Chinese consumer, and are traditionally sourced by Chinese importers from China and Taiwan. In 1992 these two countries accounted for almost 80% of Singaporean imports of mandarins and tangerines.
3. It is doubtful that the rapid increase in apparent disappearance in the past 2 years was all consumed fresh in Singapore, and it is likely that some of this product, perhaps 8-9,000 tons, was reexported to Indonesia, or was processed for juice. The 1992 Indonesia Foreign Trade Statistics (Imports) reflect the import of about 2,000 tons of mandarins from all sources, but only 8 tons from Singapore.
4. Since 1980, Singapore has usually re-exported between 3500 and 4500 tons of mandarins per year, mostly to Malaysia.

### LEMONS AND LIMES

1. Lemons and limes have not been shown separately in Singapore import data since 1983; prior to that year however, lemons accounted for about 50% of the volume. Given the popularity of iced lemon tea in Singapore it is likely that lemons account for at least the same percentage of a much larger volume currently.
2. The major supplier to this market is Malaysia and its' primary product is small limes, used in Indian, Singaporean and Chinese cooking and as a beverage base/additive.
3. Malaysian product is typically valued at less than half that of competing countries, reflecting both a product mix and quality differential.
4. Currently, lemons come primarily from Australia.
5. Note the consistent growth of Israel as a source; this is almost certainly lemons rather than limes.

### GRAPEFRUIT

1. Imports of grapefruit have increased gradually since 1981 and have reached a level of 1,355 tons in 199
- 2.
3. Virtually none of this product is re-exported.
4. There are no recorded exports of this crop from Indonesia.
5. Grapefruit is not popular with Singaporeans, being thought of as too sour and bitter, and requiring too much effort to prepare.
6. Imports into Singapore are primarily for the hotel and restaurant trade, and the US is the only consistent and thus, primary supplier.
7. There appears to be a shortage of fruit available in the Sept-October period, creating a possible niche window.

### OTHER CITRUS

1. This is a minor category consisting of kumquat, uglifruit, pomelo, etc. with total imports of 1,211 tons in 1982.
2. Almost 75% of this market is supplied from Malaysia.

## APPLES

1. Since 1981, 25% of Singapore's imports of apples have typically been re-exported.
2. Apples show marked year to year fluctuations in import levels, ranging from the mid-20,000 ton to the low 40,000 ton level.
3. Retained imports/apparent disappearances in the low 30,000 ton range are typical: 1993 reflects an unusually high year.
4. The US has historically been the major supplier to this market, but in 1992 US volume decreased sharply. Note the correspondingly sharp increase in shipments from Australia and New Zealand.
5. Indonesia exports few apples to Singapore.
6. Apples are generally consumed raw, and there is little off-take for the baking/processing market.
7. A leapfrogging pattern has developed for market penetration with first one country and then another assuming the dominant role of "market maker."
8. US and Australian apples arrive on the market year 'round, while New Zealand apples arrive March through September and French apples October through January.
9. Apples are generally the second most important fruit import into Singapore and are almost as important as oranges: any promotion aimed at either is likely to effect the total fruit market.

## STONE FRUIT

1. Imports of stone fruit have hovered between the 3,000 and 5,000 ton level since 1981.
2. This category includes peaches, nectarines, apricots, plums, and cherries, etc. and thus represents very high value fruits (note the average c.i.f. value in excess of S\$3,000 per ton) that are limited in their distribution, and almost all are transported via airfreight.
3. The market is dominated by the temperate zone producers of United States and Australia, who usually account for 90% of the imports.

## GRAPES

1. During the last five years, imports of grapes have increased 50% in volume terms and by more than 100% in dollar terms. This is a strong growth trend, and indicative of the trend to the Westernization of the Singaporean diet and the governments' promotion of healthy eating.
2. For the period 1980-1986, average c.i.f. values were under S\$2000 per ton, but today have risen to levels of S\$4000, reflecting strong demand.
3. Australia and the US are the major suppliers to this market, and together accounted for 85% of the volume and value. There were no recorded exports of grapes from Indonesia to Singapore in the period 1990-1992.
4. The US generally dominates this market from June to December and Australia dominates from January to May.
5. Preferred varieties are Red Flame, Thompson Seedless and Ribier types.
6. Grapes are increasingly regarded not as a luxury fruit to be consumed by invalids and the elderly, but as a healthy nutritious snack item. Since they require no preparation, they are particularly popular with housewives from two income families.
7. India has recently begun shipments of Thompson seedless-type grapes into Singapore.

## PEARS AND QUINCES

1. Imports of these fruits have not been growing as rapidly as grapes, and in fact the peak volume recorded in 1992 of 31,000 tons is similar to the previous peak recorded in 1984.
2. This category is a misnomer since it includes very dissimilar fruit varieties and textures.

## MELONS

1. This category includes watermelons, honeydews and cantaloupes.
2. About 3,000 tons per month, or 36,000 tons per year of this category is estimated to be watermelons from Malaysia.
3. The remainder of the Malaysian melons tend to be of the honeydew type, while Australia ships both honeydew and cantaloupes.
4. Note that a high percentage of this category is re-exported to Hong Kong, rather than to Malaysia, as is typical of most Singapore re-exports. Re-exports to Hong Kong are watermelons.
5. Both honeydew and cantaloupe type melons could be produced in Indonesia for export to Singapore: it should be noted however, that Australia has developed a program of almost year round availability, particularly of



cantaloupes, and that this program is made feasible by very attractive airfreight rates between Australia and Singapore - quoted rates are less than Jakarta or Medan to Singapore.

## BERRIES

1. Imports of berries are almost exclusively strawberries, with very minor amounts of blueberries, raspberries, etc.
2. The US has dominated this market for years, and one company in particular, Driscoll of California, has retained market leadership, though there is recent evidence that their dominance is levelling off and/or receding.
3. US fruit is on the market January through July while Australian and New Zealand fruit tends to be available Oct through January.
4. The 1990 figure is inordinately large and reflects special promotions.
5. Note the arrival of Indian berries beginning in 1992, and the fact that they immediately exceeded Australian and New Zealand volumes.
6. Also note that US berries fetch a premium price of almost S\$900 per ton, followed by Australia at S\$874 and then New Zealand at S\$722, whereas Indian fruit is coming on the market at S\$254, an introductory "give-away" price.
7. Strawberries are being successfully grown in Indonesia, and there is some trade interest in importing Indonesian fruit, particularly if reliable and consistent supplies can be developed.

## AVOCADOES, MANGOES, GUAVAS AND MANGOSTEENS

1. This category peaked in 1989 at a level of more than 11,000 tons and has since declined to more "normal" levels of slightly more than 8,000 tons.
2. Average prices per ton have escalated rapidly since 1980-89, when price levels averaged S\$500-600 per ton, to levels in excess of \$1500 per ton in 199
3. Note, however, the extremely high value of Philippine fruit at S\$3390 and Australian at S\$367
- 4.
5. Pakistani fruit is mangoes, Thailand is the Thai honey mango,(a favorite of Singapore consumers when available), and Australian fruit is a mixture of avocados, and mangoes. Note the much lower value of Malaysian fruit.
6. Philippine mangoes are developing a market following, especially because of year round availability.
7. Avocados are shipped in from the US, Australia, and New Zealand, and are an "upscale" market fruit, with good prospects for the future. The preferred variety is Haas.
8. While the trade in Singapore admits that the Indonesian Haru Manis type mango is a superior quality eating fruit, their impression is that consumers will not purchase this type due to its green skin - Singaporean and European consumers prefer red and yellow skinned mangoes. This may indicate a potential for promotion.

## DATES AND FIGS

1. This is a relatively "flat" category, supplied by China and Iran.
2. For the past 10 years, figs have only accounted for an average of about 75 tons per year, and thus the total category is overwhelmingly dates.
3. Parts of Indonesia would appear to hold promise for the production of both these fruits.
4. Note that Singapore re-exports almost half of its' annual imports of figs and dates.

## PAPAYA

1. Import levels of about 15,000 tons are consistent with past trends. This fruit has shown good growth from within the 5-7,000 ton range in the early 1980's, the 10,000 ton area from 1984-6 and then another jump to the 15,000 ton area starting in 1987.
2. Exports were under 100 tons until 1988, when they jumped to 500 tons, then 2000 tons and have finally started to come back down
3. This market is almost exclusively supplied by Malaysia, with only 7 tons exported from Indonesia in 199
4. Malaysia has developed its own proprietary cultivar ("Exotica") based on a cross between the Hawaiian Solo type and the indigenous papaya and this is having some appeal. The fruit is small, so one half a papaya will constitute one serving, an important factor for the smaller family, and even more so for the institutional customer, who is trying to control food and labor costs.
5. Note that as with melons, the main destination of re-exported fruit is Hong Kong.

## PINEAPPLE

1. Imports of pineapple peaked in 1980 at more than 18,000 tons, and have remained at about the 13,000 ton level from 1982 to 1990. In 1991 and 1992 there was a slight increase to the 15,000 ton level
2. Malaysia accounts for 93% of the total apparent imports despite the fact that the Malaysian variety, a Spanish Red type, is of inferior quality and not generally acceptable on international markets.
3. Malaysian fruit competes primarily on price and secondarily on consumer acceptance of that particular fruit over the years.
4. Note that there are small quantities of much higher value Smooth Cayenne coming from Thailand and other countries.
5. Pineapple, especially of the Smooth Cayenne variety, would appear to represent a fruit that Indonesia could successfully promote in Singapore.

## DURIAN

1. Annual imports of durian peaked in 1989 at 34,493 tons, but this was an increase of more than 500% from the levels of 1980. Since most food products' consumption patterns correlate with population increases, an increase of this magnitude is remarkable.
2. Prices have increased markedly over the last several years, and have gone from levels of S\$600-700 per ton in the mid-Eighties to current levels of S\$1642 per ton.
3. Almost all imported durian is retained for consumption in Singapore, with very little being re-exported.
4. There is apparently a specialized market developing for Thai durian, reputedly of the highest quality - note that Thai fruit commands a premium price of S\$2150 per ton, compared to Malaysian fruit which averages S\$1636.
5. Trade sources indicate that when durian season arrives, both the trade and consumers concentrate on that one fruit almost to the complete exclusion of all others. Sophisticated durian consumers have even been known to pay a premium price for fruit guaranteed to be from a particular tree or growing area: such premiums are in dollars per fruit, not cents per kilo.
6. As with mandarins and oranges, there is an ethnic component to the demand for durian, with Chinese consumers associating durian with fertility and virility.
7. The main season is May-August.
8. Indonesia exports very modest amounts of durian to Singapore: it is believed there is significant room for expansion. The trade in Singapore is of the belief that Indonesian fruit is harvested too ripe.

## BANANAS

1. During the 1980's, Singapore averaged imports of 26,510 tons of bananas per year, but consumption has been increasing to the low 30,000 ton level.
2. Malaysia is the chief supplier, with more than 94% of the volume and 88% of the value.
3. There is a small market, primarily for the expatriate and hotel/restaurant community, for premium priced product from the Philippines. This is generally fruit from Dole and Del Monte and is of the Giant Cavendish variety.
4. Banana consumption apparently peaks in January.

## LONGAN

1. Longans were not separately reported prior to 1990, but have shown very heavy growth: in the three years shown on the accompanying table, apparent consumption has increased 13 times!
2. Thailand is the major supplier, and enjoys a premium price over Malaysian fruit, receiving S\$2130 per ton, as compared to S\$1314.
3. Longan is produced in Indonesia but exports are minimal.

## LYCHEE

1. Thailand has also been successful in penetrating and now dominating the Singapore market for lychees, having displaced Taiwan as the leading supplier to this market.
2. Note, however, that it appears Thailand has had to "buy" its way into the market by offering prices below those of competing sources.
3. In 1992, Thai exporters received an average of S\$1159 for their fruit, whereas Taiwanese suppliers received an average of S\$2850, and those from all other countries received an average of S\$7241!
4. Lychees could probably be produced in Indonesia.

## OTHER FRESH FRUIT

1. This is a "catch-all" category, consisting of mixed varieties of high value fruits, such as cranberries, gooseberries, bilberries and black, white or red currants. Note that with the exception of Malaysia, this category contains fruit in the S\$2-3,000 per ton range.

### NOTES ON VEGETABLE IMPORTS

1. This report builds upon previous analyses of the Singapore market conducted in 198
2. For reasons of both brevity and clarity, the tabular data from the previous report is not included but is available at the Agribusiness Development Center.
3. Singapore annually produces about 30,000 tons of fresh vegetables per year, but this is both decreasing and of little importance to the overall import trade.
4. Many of the vegetables found in the Singapore market are tropical and/or Asian in nature, and thus face limited competition from temperate zone producers.
5. Unlike fruits, the U.S. is not a significant supplier in general, and the presence of "branded" merchandise is unheard of.
6. As with fruits, Australia tends to be a major supplier.
7. Trade sources indicate a definite willingness to experiment with new types of vegetables: a case in point is a California entrepreneur who exported cactus leaves to Singapore a few years ago, receiving much favorable publicity.
8. Singapore trade statistics consolidate green beans, peppers and cucumbers under "other leguminous vegetables" and thus these items cannot be analyzed separately.
9. Similarly, the category "fresh leafy or stem vegetables" contains so many different items that analysis is impossible.

### POTATOES

1. Imports of fresh potatoes (excluding sweet potatoes) from all sources excluding Indonesia peaked in 1981 at a level of 51,000 tons, and have since trended down, as Indonesian exports to Singapore have assumed a major share of the market.
2. It is estimated that Indonesia now has a market share in excess of 60% of Singapore's annual imports, and that share is probably not readily expandable, for two reasons: importers are generally hesitant to become reliant on one supplier, and two, imports from U.S., Australia, New Zealand and the Netherlands are likely to be of a more mealy type of potato sized and graded for the hotel and restaurant trade: what in the U.S. is known as a #1 Baker.
3. In 1989, seasonal volumes were much heavier in Mar-May and Sep-Nov than throughout the remainder of the year by a factor of as much as 7:1 times normal monthly volume.
4. Singapore's re-exports of fresh potatoes have decreased rapidly in the years since 1981, when they reached 30,000 tons, and have stabilized in the last five years at a level of about 10,000 tons.
5. Singapore's potato consumption is heavily influenced by the ubiquitous presence of fast food outlets and their reliance on imported frozen french fries.
6. Further development of Indonesia's volume of potatoes is inhibited by the fact that there are only 2 varieties of potatoes commercially available and both of these are high water, low solids content types. This tends to lead to higher spoilage, and diminished usage since these types of potatoes are not suitable for production of potato chips and/or other industrial uses.

### TOMATOES

1. Since 1981 Singapore's imports of tomatoes have averaged in the high 7,000 to low 8,000 ton range.
2. With an apparent upsurge in production and exports of tomatoes from Indonesia for the Singaporean market, total apparent imports have increased to somewhat above normal levels, while imports from Australian sources have decreased. Continued pressure from Indonesian production should mean that imports from Thailand, Malaysia and Australia will all decrease further in the future.
3. Importers in Singapore are very interested in sourcing tomatoes from Indonesia.
4. Note that on a value basis, Australian tomatoes are priced at a level about 4 times those of the Malaysian product. This reflects different varieties (Beefsteak vs Roma/canning), packaging, different end-users (upscale consumer and hotel and restaurant vs wet market), and different expectations of spoilage (Australian product has been refrigerated from point of production).

### ONIONS

1. For the 1980-1983 period annual Singaporean imports of onions averaged in the high 30,000 ton range, then

jumped to the mid 40,000- 50,000 ton range from 1984-1987, and since then have been in the low to mid 60,000 ton area. However, note that this category formerly excluded spring onions, which are now included.

2. This market is dominated by Indian product, and that country consistently ships in excess of 3,000 tons per month of "Bombay onion" to Singapore at prices ranging from \$400 to \$600 per ton. Onions from Australia, New Zealand, U.S., Philippines, and the Netherlands are of the yellow granex or white types, used principally by the expatriate and hotel and restaurant communities as a salad ingredient and are generally higher in price.
3. The marked decline in US exports of onions to Singapore in 1992 reflects a shortage in the US, and may well be to the detriment of future onion trade with Singapore. The heuristic in marketing is that once you have lost market share it is extremely difficult to regain it.
4. The marked increase in Indian exports may reflect a change in that country's export laws in 1992 which served to make agricultural exports more attractive by increasing the percentage of foreign currency earnings that could be retained by the exporter if he exported agricultural products in particular.
5. Onions are a principal agricultural re-export from Singapore to Malaysia. This probably reflects Indian domination of the trade, with expatriate Indian traders at all levels of the channels of distribution.
6. The dominant onion trade in Singapore is for the red varieties, of both the shallot and larger types.

## GARLIC

1. Long-term (since 1981) trends in garlic consumption are difficult to analyze, since prior to 1989 there was confusion as to the definition of fresh vs dried garlic. The data since 1989, however, indicate a normal import level of slightly over 30,000 tons per year, and exports in the mid-20,000 ton range.
2. The trade in garlic in the Singapore market is dominated by the Chinese origin product, which includes imports from both China and Hong Kong.
3. The quality of the Chinese garlic offered to the market has undergone vast improvement in the past several years and there is little likelihood of any known competitor being able to penetrate the market based on existing price-quality relationships, according to trade sources.
4. The majority of the garlic imported into Singapore is subsequently re-exported to Malaysia.
5. The negative disappearance in 1990 probably reflects a drawdown of stocks as there was a worldwide shortage of garlic that year (note the increased process in the following year).

## OTHER ALLIACEOUS VEGETABLES

1. This category primarily consists of leeks and chives.
2. China and the Philippines dominate the "official trade," but Indonesia has been showing strong growth, and in 1992 accounted for almost 18% of the market.
3. Reexports to Malaysia are of the same magnitude as imports from Indonesia.

## CAULIFLOWER (includes broccoli, kohlrabi and kale)

1. Singapore annually imports in the mid-6000 ton range of these crops, and exports 1500-2000 tons worth, with most exports to Malaysia.
2. Annual apparent disappearance of cauliflower is essentially met by imports from Australia, despite the fact that Indonesia has in the past been a supplier of up to 1,000 tons.
3. Note that imports from Australia have been growing while those from Taiwan and Indonesia have been decreasing.
4. In view of their high labor costs, Taiwan tends to be a net importer of both broccoli and cauliflower, and thus future shipments from Taiwan should dwindle.
5. While Indonesia produces and exports cauliflower, quality is poor, with soft "curds."

## CABBAGE

1. Cabbage is one of the major import items for the fresh fruit and vegetable trade in Singapore, and according to Indonesian export statistics, Indonesia is the major supplier to the market with a market share of almost 63%.
2. A market share of this magnitude is probably not capable of being greatly expanded since the other suppliers are likely to be supplying specialized types of cabbage and in addition may be able to take advantage of seasonal trends, providing cabbage when it is not available from Indonesia. Note, for instance, the difference in values between the different sources, with Australian cabbage being priced at about S\$1500 per ton, Malaysian at less than \$500 and Taiwanese product at about \$1000 per ton. Production of significant amounts of Chinese type cabbages in Indonesia would, however, enable some growth to occur in Indonesia's market share.
3. The extremely high export figure from Indonesia to Singapore for 1992 is not readily explainable nor believable - it is not consistent with past trends, does not reappear as incremental exports, and would indicate

that per capita consumption in Singapore increased almost 80% in one year!

4. Singapore generally exports slightly more than 3,000 tons of cabbage per year to Malaysia.
5. According to trade sources, there is a sizable Singapore market for long Chinese cabbages, and this demand is generally serviced from Australia, but could be serviced from Indonesia.
6. China and Taiwan tend to be suppliers in the November through March period, while Australia and Malaysia are year round suppliers.

### LEAFY VEGETABLES

1. Data in this series can be misleading, as the category undergoes definitional changes frequently. Nevertheless it is an important and growing category, and an examination of the import of fresh leafy vegetables into Singapore from 1981 to present indicates consistent growth every year from 1981 levels of 8,069 tons to current levels of more than 75,000 tons. As currently constituted, the category consists of various types of head lettuce, and witloof chicory.
2. Note that the bulk of the tonnage is sourced from Malaysia and is relatively low value product (less than S\$ 500 per ton). This category primarily reflects iceberg type lettuce and other lettuce types, along with many Oriental type leafy vegetables such as Bok Choi.
3. The leafy vegetables sourced from the more distant countries such as Australia are of much higher value (note that even the Thai product is priced at more than S\$2000 per ton) and reflect varietal, packaging and seasonal differences.
4. Indonesia has exported small but increasing amounts of leafy vegetables to Singapore over the past three years: this growth should be exploited.

### CARROTS

1. Indonesia has a small and decreasing share of the Singapore carrot market, which is totally dominated by the Australian producers.
2. Carrot imports into Singapore have been increasing every year since 1982, when they were just 50% of current levels.
3. The absence of any other significant competition suggests a trade channel monopoly or comparative cost advantage, unlikely in view of the low value of this vegetable.

### OTHER ROOTS AND TUBERS

1. This category includes beetroot as well as, turnips/rutabagas and Swedes.
2. The volume is dominated by Malaysia for tonnage and by China for total value.
3. Indonesian exports of 31 tons in 1992 accounted for .4% of the market.

### FRUITED VEGETABLES AND LEGUMES

1. This category includes peas and beans.
2. The market is dominated by Malaysia, which shipped more than S\$15 million into Singapore in 1992.

### CHILES

1. Chiles are ubiquitous in Singapore retail markets, but are a relatively low value product, chiefly sourced from Malaysia.
2. In 1992 Malaysian producers sold almost S\$ 4.5 million worth of chilies, to Singapore, generating about \$800 per ton.
3. Thailand and "All other" have met some success in exporting higher value chilies - such as the bird pepper, the jalapeno, the habanero and the Hungarian wax.
4. Most chiles in Singapore are bought in the dried form, with China as the major supplier. In 1990 and 1991, Singapore imported more than 16,000 tons of dried chiles.

### SWEET CORN

1. Sweet corn is a small but apparently growing market - until recently this category was not reported separately by the Government of Singapore.
2. The market is dominated by imported US corn, generally of the "super sweet" types, which appeal specifically to the thousands of expatriates associated with the electronics industry in Singapore.
3. This category also includes baby corn, typically imported from Thailand, and of low quality.

4. The 1990 exports from Indonesia are probably not realistic.

#### OTHER VEGETABLES

1. "Other vegetables" are included here to complete the category. The category includes artichokes, asparagus, egg-plants, celery and spinach.
2. Note the relatively high prices of S\$3500-4000 per ton.

#### FRESH MANIOC AND SWEET POTATOES

1. In both 1990 and 1992, Indonesia exported more than 2,000 tons into this market, accounting for 10% of the trade.
2. In volume terms, Malaysia accounted for almost half the volume, but only 18% of the value, as China exported product valued at more than S\$1000 per ton.