VG97034

Heavy Vegetable Export Opportunities and Germplasm availability in Singapore, Japan, Taiwan and Hong Kong

Ken Jackson
QLD Department of Primary Industries

HAL

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VG97034

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HORTICULTURAL RESEARCH & DEVELOPMENT CORPORATION

Partnership in horticulture

Final Report

Heavy Vegetable Export Opportunities and Germplasm availability in Singapore Japan, Taiwan and Hong Kong.

Project No. VG97034 - Dr Ken Jackson

DPI QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

Queensland Fruit & Vegetable Growers

HORTICULTURAL RESEARCH & DEVELOPMENT CORPORATION
The Research Arm of the Australian Horticultural Industries

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April 1999

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Ken Jackson

SUMMARY

Background

Regular over supply of vegetables on the domestic market has created much interest within industry and service providers to assess the opportunities to export particularly into key Asian markets including Singapore, Hong Kong, Taiwan and Japan. As a vegetable agronomist involved partly with the development of improved varieties, I considered it necessary to have a first hand knowledge of the varietal characteristics required in these potential export markets. An opportunity also existed to determine if new germplasm could be sourced while undertaking a study tour of Asian vegetable markets.

When this idea was put to the Heavy Produce Committee of the Queensland Fruit and Vegetable Growers, the Committee offered support to finance a study tour of Singapore, Hong Kong, Taiwan and Japan and requested that two grower/exporters of heavy vegetables (potatoes, onions, pumpkins, sweet potates and garlic) accompany me on the study tour. This Committee with the assistance of matching funds from the Horticulture Research and Development Corporation provided the travel and accommodation costs for the study tour. The Queensland Horticulture Institute, a Business Group within the Queensland Department of Primary Industries paid my salary.

At the time the trip was proposed I was a Principal Horticulturist, based at Gatton Research Station and responsible for Heavy Vegetable Research in Queensland. By the time I was able to undertake the trip I had been appointed as Leader of the Vegetable Program within the recently formed Queensland Horticulture Institute.

This report records my impressions of what we saw on the study tour. The report also includes brief reports by David Nix (potato grower/exporter from the Atherton Tablelands in North Queensland) and Kerry Qualischefski (onion grower/exporter from the Lockyer Valley in South East Queensland).

Results

We were able to visit major wholesale fruit and vegetable markets in Singapore, Hong Kong, Tokyo and Taipei. Opportunities to visit supermarket chains and importers in each of the countries was also possible. These visits were organised by local AusTrade officers in Singapore and Queensland Department of Trade Officers in the other three countries.

This study tour has provided me with a great opportunity to gain in a short time frame a perspective of the complexity of exporting vegetables to Asia. So often the message that is spread is that exports are the simple answer to our domestic oversupply and that the returns are high in the export arena. Export is a hard slog, requiring commitment over the long-term and a fair chance of the incursion of some losses along the way in establishing a lasting profitable relationship with an importer.

We quickly came to the conclusion that there were many competitors viaing for business in Asia. Australia is however perceived as a clean source of produce. With particular reference to Queensland our quality assurance training programs and subsequent adoption as well as our seasonality of production enables some competitive advantage. Export profit margins are generally narrow but by exporting a proportion of product, domestic markets are less likely to be affected by overproduction.

Freight costs especially those associated with shipping disadvantages Australian exports. It was not uncommon to hear that shipping containers from the US which were double the size of those from Australia and that took twice as long to get to Asia could be landed cheaper than the smaller container from Australia. There has to be an effort to coordinate export shipping from Australia, perhaps by linking with New Zealand to obtain cheaper shipping rates and thus be more competitive against Northern Hemisphere suppliers to Asia.

Quality of product in Asian markets was generally high with improvement as we moved north to Japan where we saw exceptional quality. This was quality in terms of visual appearance. The degree of chemical residues was difficult to ascertain but the awareness of food safety was apparent with some form of random testing being conducted in all markets we visited. Australia does have a competitive advantage over many countries in this regard and our quality assurance programs can only enhance this advantage.

Continuity of supply and consistent quality were areas where we heard regular negative comments about Australian vegetables. Importers frequently commented on the need for Australian producers to network the supply and centralise their pack houses to address these two issues. Exporters need to be aware of the preferred packaging required by the importing market, the preferred size range and count per package. Use of the language of the destination market on packaging is also recommended.

Communication between producer, importer and retailer is essential for a successful export relationship. This should be regular and channelled through someone representing a group of suppliers rather than a group of individuals. At least one visit by a representative of the group should be made preferably at the beginning of the season to see the product turn-out at the destination market. During our visit we found staff of the Queensland Trade Offices in the various Asian countries were of tremendous assistance. It is felt that this resource is not used to its full potential by producers. I also feel that there could be a closer association between QHI staff and the Trade Officers with periodic exchanges recommended.

Supermarkets are not as dominant in the retailing of fruit and vegetables in the Asian countries we visited as they are in Australia. Overall they possibly retail 50% of fruit and vegetables. In some of the countries such as Taiwan there is still a heavy reliance on the wet market for retailing these commodities. As we travelled around there was much debate on the expected growth of supermarkets in Asia. Many people thought that wet markets are part of the Asian culture and these markets would remain a major player in the retail of fruit and vegetables. I feel however, that supermarkets will be dominant in the countries we visited within the next 5 – 10 years.

Competition from other countries is high with the United States, China, European countries particularly Holland, and New Zealand being major suppliers to the Asian markets. South Africa and South American countries are also emerging as significant suppliers. It is often suggested that China is a major opportunity to target for export. While there are these opportunities, statistics in this report demonstrate the capacity of China to service Asian markets. I see that this capability will continue to grow rapidly.

Throughout the report, there are references to opportunities for Queensland heavy vegetables exports and for vegetables in general. Greatest opportunities appear to occur for the supply of range of fresh vegetables that are sought to service the significant trade to high class hotels and restaurants in Asia, particularly in Japan. Generally markets in Hong Kong, Taiwan and Singapore are very price sensitive whereas it is expected that there are better opportunities for long term arrangements to be established to supply Japanese markets.

We had the opportunity to visit sweet potato and onion research stations in Japan as well as the Asian Vegetable Research and Development Centre (AVRDC) in Taiwan. Contacts were established to introduce sweet potato and onion germplasm. At the AVRDC several contacts were made that will be useful for QHI vegetable research in general.

RECOMMENDATIONS

- Confusion was apparent in many of our interviews as to what type of onion Queensland was trying to market in Asia. Industry and QHI need to settle on a description – "sweet", "mild", "short-day", "tropical", "fresh" and "low pungency" are confusing the image of what we are trying to market.

- Industry needs to develop a portfolio of the products it can supply and when it can supply. The recently released brochure "Queensland's Horticulture Portfolio" is an excellent start. A more detailed portfolio of varieties, grades, attributes and supply period for potatoes, onions, sweet potatoes and pumpkins would be very helpful for officers of the Queensland Trade Department working in Asian countries. This portfolio would also assist our exporters overcome some of the criticisms of inconsistent quality and less than acceptable grading standards.

- Improved communication between QDPI Business Groups including QHI and overseas officers working for the Queensland Department of Trade should be implemented. For example, location and key staff involved in horticulture should be known to both Departments. Currently a capability statement of teams within QHI is being developed. When completed, each trade office will receive a copy. The opportunity of arranging short term exchanges (3 months) for key personnel in QHI and Trade Development Offices in Asia will be investigated.

- Industry representatives who undertook study tour should communicate export opportunities identified on the tour to the Heavy Produce Committee to pass on to industry members. These include opportunites for onions, potatoes and sweet potatoes.

- Industry should pursue the opportunity to coordinate the supply of consistent high quality fresh onions from Queensland to serve the markets identified.

- A comprehensive feasibility study should be commissioned by industry to ascertain the potential of Kabocha pumpkin exports from Queensland to Japan. There appears to be confusion as to whether it would be a profitable exercise given the market access issues involved to get fresh pumpkin into Japan.

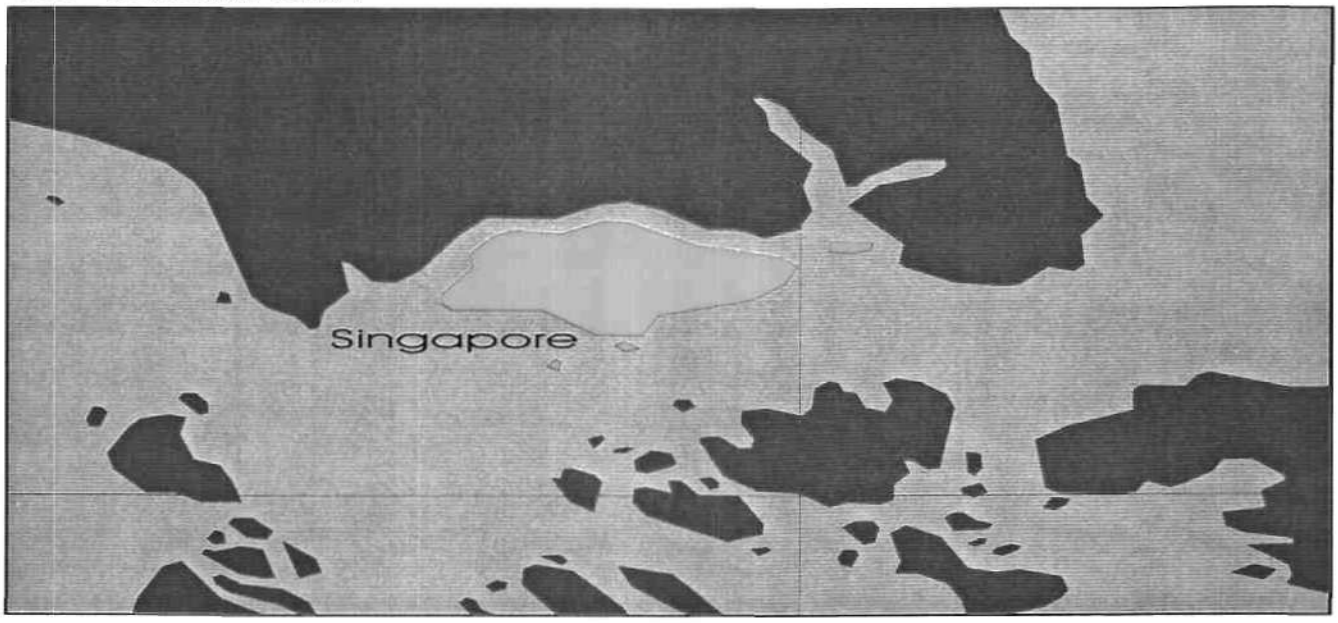
- QHI should continue to cooperate with the testing of onions from the sweet onion breeding company in Japan as a number of low pungency lines are being developed. An approach should also be made to the Kyosekihata Research Station in Japan to introduce the sweet potato variety Beniazuma variety. Sources of Kabocha varieties were also identified should we decide to investigate the potential of this vegetable.

- QHI staff who are working in vegetable research related to that being conducted at AVRDC are encouraged to liase with staff at the centre; areas of common interest include Allium, Tomato and Capsicum breeding and Integrated Pest Management in Brassicas.

- Industry needs to decide if QHI staff should investigate the cost of eliminating virus from QHI bred garlic varieties Glenlarge and Southern Glen as elimination can be done by AVRDC scientists.

- Industry in consultation with QHI post harvest staff could investigate new opportunities to export frozen heavy vegetable product because of the increasing demand for frozen vegetables in Japan.

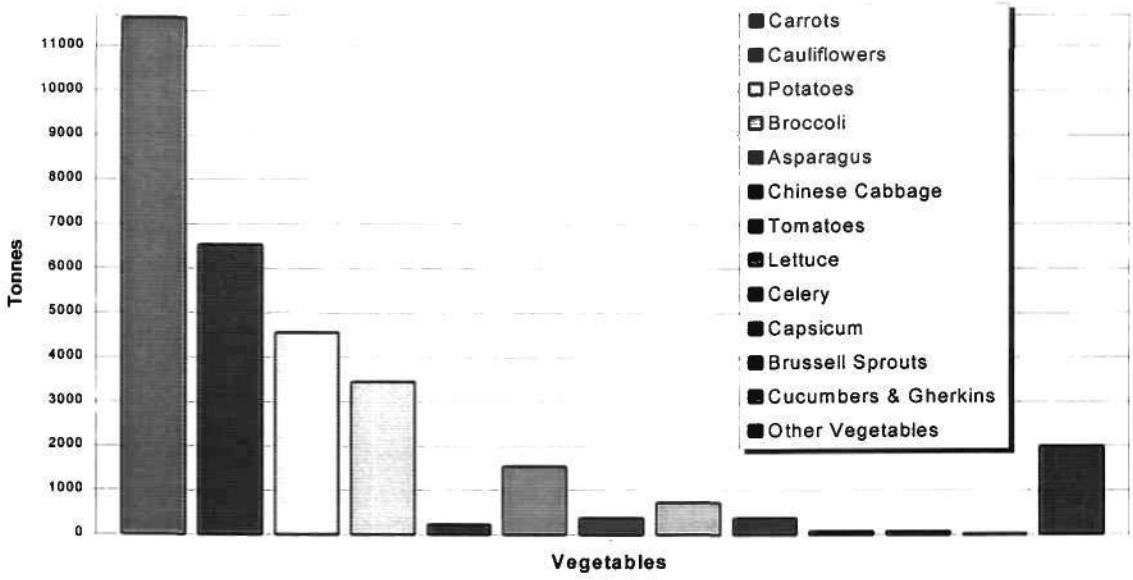
1.0 SINGAPORE



1.1 Briefing by AusTrade – Julie Bayliss and Toh Guek Hong

1.1.1 Introduction

Singapore has a resident population of just over 3 million; in 1996, 7.3 million tourists and business visitors came to the country. This highly urbanised country covers an area of 640 square kilometres and has minimal agricultural production. It virtually imports all raw materials and has very few import restrictions. Imports of food and beverages in 1996 totalled A$5.8 billion with approximately A$2.5 billion being re-exported to neighbouring countries.



Source: AUSTRADE Country Briefing Paper

Figure 1.1 Australian export of fresh fruit and vegetables to Singapore 1996/97

Per capital vegetable consumption in 1996 was 82kg. The value of fruit and vegetables imported in 1996 was A$1 222 M of which 12% was sourced from Australia.

The food service industry in Singapore is a significant component of the overall import requirement of vegetables and fruit. Singapore in one of the busiest airports in the world (78 134 aircraft landings, involving 10.9 million passengers and 59 passenger carriers operating a total of 1 426 flights into Singapore in 1995). Singapore is also the largest port in the world handling 800 ships at any one time. Singapore Airline Terminal Services (SATS) produces 75 000 – 100 000 meals per day for 57 airlines and Changi International Airport Services (CIAS) which produces 10 000 – 12 000 meals per day for 22 airlines. There are several ship chandlers which provision the shipping traffic. Other major food service industries include cruise ships, 24 hospitals, the catering trade and hotels.

Plate 1.1 Extensive, highly mechanised port facilities enable efficient handling of cargo in Singapore.

The key requirements of agents and distributors to service the food requirements of Singapore include

- Good quality products
- Range of products
- Consistency of supply
- Good working relationships
- Ability to adapt to:-
  - Special market requirements
  - Trading terms
- Good freight rates
- New line fees
- Marketing support
- Good margins – importer/relations
- Products in line with trends

Tips for exporters who intend to supply the Singapore food markets.

- Know your target market
- Meet traders face-to-face
  - More important in Asia
- Test your product in market/focus groups
- Adjust for local tastes
  - Often Western products are too salty
- Know the local food laws
- Pack and ship products for a tropical climate
- Adopt product to Asian ways of cooking consider other ASEAN market options.
- Be patient and **think long** term.

1.1.2 Food Retailing

There are major changes occurring in the marketing of vegetables and fruit in Singapore. There is pressure to change from the traditionally fragmented Singapore market into one of consolidation. Small and medium size retailers including the neighbouring provision shops and traditional "wet markets" which accounted for over 95% of the retail outlets and over 60-70% of the total merchandise turnover, are seeing their market share rapidly shrinking. Regional mall developments where supermarket operators such as NTUC FairPrice, Cold Storage and Shop N Save have established are having a significant impact on shopping patterns in Singapore. Provision shops and mini markets have lost up to half of their business to the rapid growth of supermarket chains.

The Singapore population is ethnically diverse composed of 77% Chinese, 14% Malay, 7% Indians and 2% of other races. The ethnic community strongly retains its own dietary habits but there is increasing consumption of western-style foods. Estimates of the size of Singapore's expatriate population are around 400 000 of which 7 000 – 10 000 are believed to be Australian.

1.1.3 Retail Outlets

Provision shops. These are located on the ground floors of the Housing Development Board (HBD) apartment complexes and are traditionally small independent operations run as sole ownerships or by facilities. They provide a convenient method of shopping as Singaporeans tend to shop more frequently and purchase product in smaller package sizes than in Australia. The low overheads of such complex allows them to compete with supermarkets.

Plate 1.2 David and Kerry inspect quality of garlic, shallots and onions in a provision shop in suburban (Clemente) Singapore.

Wet Market Stalls. These are also scattered among the HDB complexes and are typically family owned. Some 80% of fresh fruit sales are made through these outlets. They are likely to be maintained as they form an important part of the community lifestyle in Singapore.

Plate 1.3 Yams and sweet potatoes were commonly seen in Singapore wet markets.

Supermarkets. These are less developed than in Australian. Future urban development plans will favour their growth. NTUC FairPrice is the largest supermarket chain. It is a cooperative formed in 1983 from the merger of the National Trade Union Congress (NTUC), Welcome Consumers Co-operative and the Singapore Employee's Co-operative. It currently has an estimated 50% of the supermarket trade and 25% of all retail trade. Other important supermarket chains include, Cold Storage, a subsidiary of the Dairy Farm Group of the Hong Kong which owns the Franklins chain in Australia, Tops, Royal Ahold, Carrefour, Shop N Save and Prime.

Plate 1.4 Price/100g for various vegetables in suburban supermarket.

1.1.4 Fruit and Vegetable Marketing

Twenty – thirty percent of fresh fruit and vegetables are now retailed through the supermarkets with 70-80% going via wet markets and fully dedicated fruit shops in the HDB estates. Because Singapore is the visitor and transportation hub of South East Asia, the service industry as mentioned previously is a major consumer of fruit and vegetables. A small proportion of imported fruit and vegetables are processed by local companies while over one third of fresh fruit and vegetable imports are re-exported to nearby countries.

Fresh Fruit and vegetables are usually imported by agents/distributors that service wholesalers, retailers and the food services sector. Pasir Panjang market is the biggest and oldest wholesale market and houses offices, dried goods, fresh fruit and vegetables and cold rooms.

1.2 Visit the Pasir Panjang Market – John Lim

John Lim used to import but now buys from three importers. John was concerned about the short shelf life of the Short day sweet onions grown in Queensland. They would require refrigeration for storage in Singapore. Inadequate cold storage facilities, and the added expense of refrigeration and the non differentiation between mild and pungent onions in the Singapore market were reasons why he traditionally purchased the longer keeping pungent onions from New Zealand and Tasmania. Yellow fleshed potatoes were preferred to white flesh for use in cooking and most were sourced from Indonesia. However, substantial quantities of Russet Burbank were imported from the US for baking. The US also supplied frozen French fries for the fast food trade. John saw excellent opportunities for the seed industry in Australia to supply certified potato seed in Asian countries.

Plate 1.5 Tasmanian onions and Chinese garlic (as cloves) and Indonesian shallots at Pasir Panjang markets .

Some opportunities exist for sweet potato import. Currently Singapore imports from Malaysia which supplies cheap product of irregular quality, Indonesia where the current financial crisis may effect supply and Vietnam where occasional supplies are sourced.

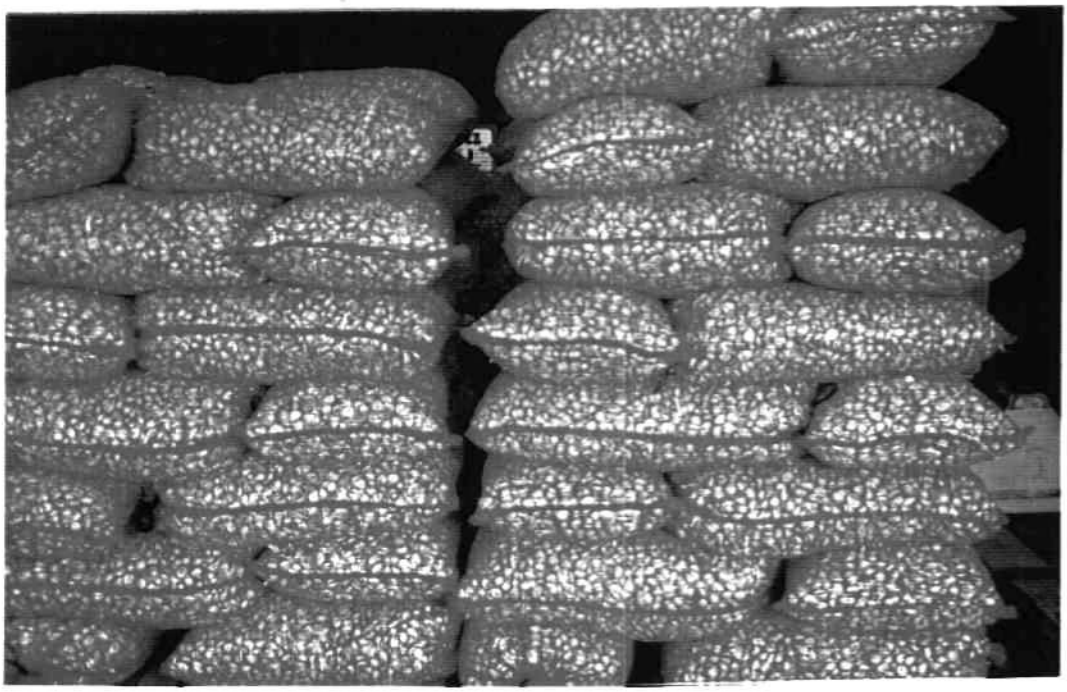


Plate 1.6 Chinese garlic broken into cloves was heavily supplied throughout the Pasir Panjang Market.

Garlic at very low prices and of good quality was sourced from China.

As we walked around the Pasir Panjang market, we were impressed with the quality of vegetables coming from Malaysia. However, John commented on the problem of chemical residues especially with the Malaysian produce. This has resulted in much greater intensity of chemical residue testing of Malaysian produce, compared to that received from other countries.

When asked some general principles about exporting to the Singapore market, John emphasised reliability of supply. He quoted the case where he sourced all lettuce from Australia, but due to supply problems he had to import from the USA which has maintained this supply at the expense of the Australian industry. Another aspect our exporters need to be aware of is an emphasis on consistency in packaging. The supermarkets of Singapore buy by piece not weight. Packaging has to be precise, consistency in counts from the USA is more reliable than from Australia as is quality. John considers quality of Australian vegetables suffers because there are so many small suppliers. He agrees with Mrs Julie Bayliss and Mrs Toh of AusTrade in Singapore for the need to amalgamate packaging and also adhering to a recognised set of specifications for our vegetable exports.

Visits to individual potato, onion and garlic stands in the market demonstrated the problems of spoilage due to the hot humid conditions experienced in Singapore. Such conditions were ideal for post harvest rots in potatoes and onions which had to be regraded by hand to remove spoilage.

Plate 1.7 Sorting through potatoes from China and Indonesia outside wholesaler's storage in Pasir Panjang Market to remove tubers affected by pest and disease.

1.3 NTUC Supermarket Purchasing Division – Tng Ah Yiam

We had the opportunity to discuss the potential for Queensland potatoes and pumpkin sales in the NTUC supermarket chain when we met with Mr Tng Ah Yiam. NTUC, the major retailing chain is currently placing emphasis on the expansion of its fresh produce section as it is realised with good management fresh produce sales offer the best potential for profit margins. NTUC are already heavily involved in importing broccoli from Queensland and carrots from Tasmania and Western Australia.

Tng was very positive about the potential of sweet onions in the supermarket chains. He sees a particular market for peeked onions that are vacuum packed. There are also opportunities for brushed and washed potatoes especially for a range of varieties. One of the ways to increase sales in the supermarket is to offer a choice of varieties. Tng was also interested in samples of our sweet potatoes but saw little opportunity for pumpkin. However, he was still interested in small Japanese type pumpkins in the 1-1.5kg range.

The heavy vegetable industry needs to arrange some samples of our heavy produce via John Lim to supply to the NTUC supermarket chain. Tng stressed the need to also supply simple information as to the advantages and uses of the products. For example sweet onions need to be explained as having low pungency and suitable for use in salads and pizza toppings.

Tng felt one of the most important aspects in developing opportunities is communication between the grower, the importer and the retailer. This was also a point made by AusTrade in Singapore. Australia is seen as a good source of supply but there is a general perception in Singapore that the Australian farmers are not as responsive as the Americans to responding to faxes and delivering product on time.

My general impression after visiting Asia is that we need to have a portfolio of the specifications of our products including supply period, colour pictures of the product, and size ranges that can be supplied and any special characteristics of the product. Most of the people we spoke to responded to pictures of product and could then identify what would and would not be suitable for importing. However, if asked for their specifications, most of our contacts were unable to clearly define what was required.

1.4 Singapore Airline Terminal Services (SATS)– Dennis Ong, Roger Tan and Toh Guek Hong

The visit to SATS was organised by Mrs Toh of AusTrade. Here we met with Mr Denis Ong (Purchasing Executive, Dry Stores and Overseas) and Mr Rodger Tan (Purchasing Executive, Perishables). SATS currently provide 75 000 – 100 000 meals per day for 51 airlines. Fruit and vegetables are sourced both from the local Singapore wholesale market and overseas suppliers. Many of the vegetables are imported as frozen processed product and the trend is to increase the amount of frozen product compared to fresh. However, the same products especially fruits including rockmelons and honeydews are purchased fresh. Tenders for the supply of fruit and vegetables are conducted each September/ October to supply on the basis of a one year contract. Opportunities exist for rockmelons are honeydews from Queensland as well as a whole range of fresh and frozen vegetables. Interest in supplying this market could be best organised by first approaching AusTrade in Singapore. The SATS staff were interested in the new infra red (NIR) technology being developed by the Queensland melon industry to determine sugar content and the mechanical peeling of rock melons and honeydews. It would be worthwhile for the melon industry to pursue opportunities to supply this market.

The SATS staff supplied specifications for all the fruit and vegetables used as well as the required volume. These are included as appendix 8.3 in this report.

1.5 Benelux Flowers – Pasir Panjang Market – Cham Quan Beng

Mr Cham supplies various supermarket chains with potatoes. Currently he sources part of his supply from Forth Farms in Tasmania. He is marketing the varieties Bintje, Symphonia (red skin) and Royal Blue (blue skin) from Tasmania and sees opportunities in the supermarkets for these novelty type potato varieties. North Queensland is currently growing small quantities of these varieties that could complement the supply from Tasmania in terms of production time. Currently Tasmania supplies January to August and Queensland could supply August to December.

Mr Cham was interested in trialing some sweet onions as he also sees the importance of offering choice in the supermarkets. He suggested 1kg pre packs containing 55 – 70 ml size range as a trial. He was more confident than other groups we talked to about the growth of supermarkets in Singapore. Already supermarket prices for vegetables are often lower than in the wet markets. The convenience factor and the fact that the younger generations prefer the new style of shopping offered by supermarkets will change the traditional standards of buying from the wet markets. He also sees no reason why the percentage of sales won't rise from the current 30% to the vicinity of 80% in the near future. Because of this predicted growth, Mr Cham also sees opportunities for minimally processed vegetables such as the range of fresh cuts available in Australian supermarkets.

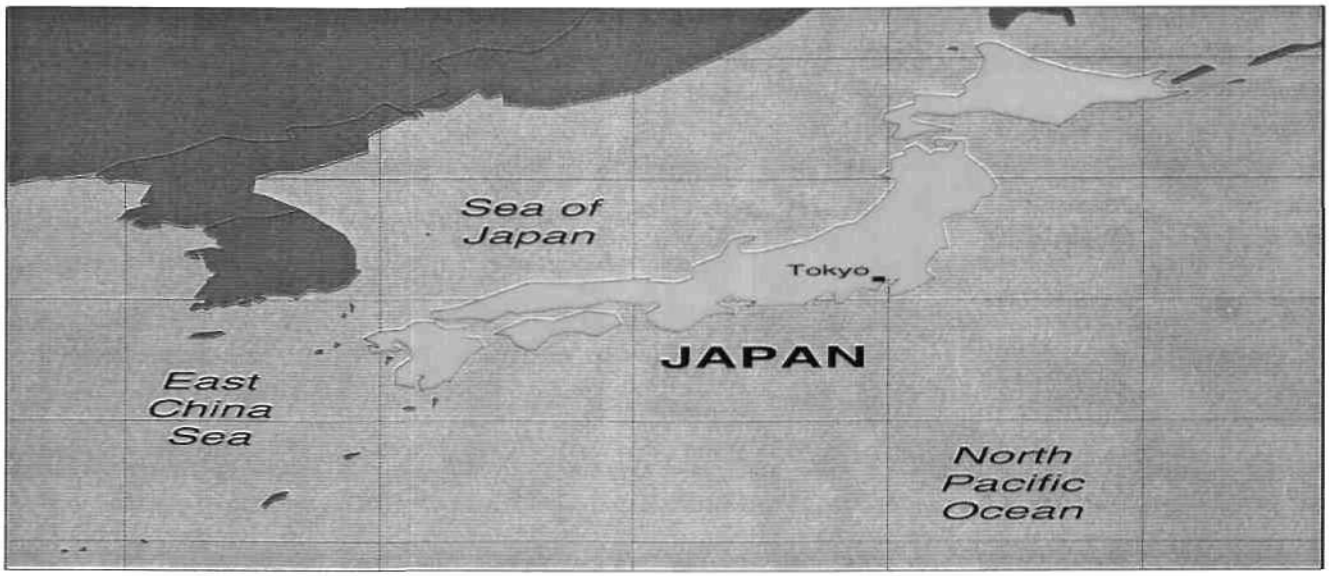
1.6 Kian Hin Hup Koe Pte Ltd – Pasir Panjang market – Ang Kheng Leong

This company imports potatoes from New Zealand, Australia and Indonesia and onions from New Zealand, Australia, Holland and India. We talked to Mr Ang who explained that the company was primarily interested in long storage onions as he felt that the short day onions would not handle the hot humid conditions of Singapore. The company imports the Cream Gold type from Tasmania and South Australia. However, after our presentation on short-day onions, he was prepared to trial some samples in the 50 – 70 and 60 – 80 mm diameter ranges.

The company imports potatoes currently for supplying to crisping industries in nearby Malaysia. David Nix has supplied to this company in the past and is still interested in supplying from the Atherton Tablelands. Atlantic and Nicola are the favoured varieties to import. Desiree doesn't store well in the Singapore climate and the quality of Sebago is too variable. Tuber moth infestation has been a particular problem in Queensland grown potatoes. Persistence in supplying processing potatoes from Queensland is warranted.

The AusTrade Office at Singapore stressed the importance of building a network of growers to produce a product that has consistency of supply, where there is some quality assurance program in place and where the importers are talking to one person representing a network, rather than a number of individual suppliers of variable product quality. The representative needs to accompany the first shipment of the season to insure the quality of the product on arrival so that any problems can be resolved from the start and to enhance the communication process between supplier and importer. For the sweet onion industry to develop to supply the demand in the Asian markets we visited it appears that this type of model needs to be investigated.

2.0 JAPAN



2.1 Background Information

2.1.1 Introduction

The Japanese consume a relatively high amount of vegetables compared to most other countries. This consumption has been calculated by the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF), to be 100kg per capita per year. Since the 1980's vegetable production has steadily decreased in Japan and from being self sufficient in the mid 1980's it now relies on 15% of its consumption from imports. A number of reasons have impacted on the decline in domestic production and include an aging of rural population with 35% of Japanese farmers over the age of 60, little succession within existing farm ownership, urbanisation decreasing the availability of land for agriculture, high farm labour costs and tardiness in the adoption of the mechanisation on farms. Other factors promoting imports include higher product quality, improvements in transport technology, appreciation of the Yen, westernisation of diet, a greater diversification of tastes, seasonality of production in Japan and the effect periodic climatic disasters have on domestic production.

Household consumption has declined while use of vegetables by food processors and the food service industry has increased. Consumer preferences are also changing from Chinese cabbage, daikon (Japanese radish) and other heavy vegetables to vitamin-rich greens. The health conscious consumers are also seeking naturalness which they perceive in freshness and little or no exposure to chemicals. To service these needs, the larger supermarket chains are increasing the number of outlets to enhance freshness of locally produced products. Organically grown vegetables are appearing in special sales corners within major supermarkets and department stores. However, there appears to be some confusion as to the Japanese definition of organic and is likely in many cases to refer to reduced pesticide usage. There needs to be a clearer definition of what is being described as organic in the Japanese market.

Pre-cut vegetables are also rising in popularity with emphasis on prepacked salad meal components available in the supermarkets. Dehydrated vegetables particularly from Italy and especially tomatoes are also becoming popular in selected Japanese markets.

Table 2.1 Estimated import share of various vegetables in 1996 in tons.

Vegetable	Domestic Production	Import	Total	Import Share(%)
Taros	257 000	112 337	369 337	30.4
Spinach	379 000	35 306	414,306	8.5
Onions	1 252 000	276 784	1,528 784	18.1
Pumpkins	242 000	143 789	385 789	37.3
Green Soy-bean (Edamame)	79 000	78 691	157 691	49.9
Broccoli	78 000	89 738	167 738	53.5
Asparagus	23 500	57 044	80 554	70.8
Fresh Mushrooms	74 500	24 394	98 894	24.7
Ginger	32 000	105 439	137 439	76.7

Note: Import volumes include volumes of processed and other products converted to fresh vegetable equivalents.

Source: MAFF and Ministry of Finance (MOF)

China is Japan's largest supplier of fresh vegetables, followed by the United States (Figure 2.1). China almost exclusively supplies taros, garlic, ginger, shiitake mushrooms and peas to Japan. The United States supplies Japan with approximately half of its imported onions followed by New Zealand, Thailand and Australia. New Zealand supplies about 50% of the imported pumpkins and Mexico another 30%. The United States supplies almost all of the imported broccoli. Almost 90% of the frozen potatoes (Table 2.2) comes from the United States.

2.1.2 Vegetable Statistics

Table 2.2 Trends in selected imported vegetables in various forms in tons.

Vegetables	1992	1993	1994	1995	1996
Fresh Vegetables					
Onions	35 138	61 809	206 849	245 844	184 455
Pumpkins	122 188	126 185	156 783	131 844	143 789
Broccoli	-	-	72 172	74 330	73 767
Ginger	15 921	26 636	28 190	36 102	31 318
Carrots and Turnips	2 967	9 266	18 212	55 573	30 200
Taros and Yams	1 850	10 701	29 115	-	-
Frozen Vegetables					
Potatoes	159 102	155 433	175 602	199 613	227 656
Taros	20 019	31 440	42 084	48 382	61 924
Green Soybeans (Edamame)	44 063	51 249	56 700	52 608	57 973
Sweet Corn	39 780	42 323	43 612	46 705	46 321
Processed Vegetables					
Sweet Potatoes	654	796	653	464	612

Source: MAFF

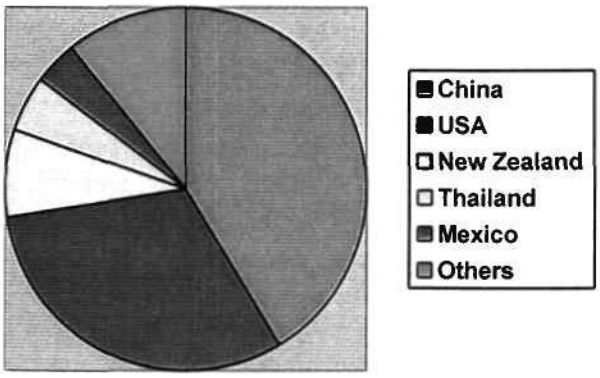


Figure 2.1 Main exporters of fresh vegetables - 1996
Source: MOF Australia's position as a supplier

Australia's exports of fresh vegetables to Japan totalled 21 721 tons valued at $50 million in 1996. Australia's share of total Japanese imports was 3.5% in volume over 4.5% in value in 1996.

Australia's major fresh exports to Japan are onions, asparagus, carrots, pumpkins, sweet corn and leeks. Australia has established a position in the Japanese market by capitalising on seasonal variation. Other types of vegetables being supplied to Japan from Australia during off season months in the northern hemisphere include chicory, beans, ginger and capsicum (Tasmania only).

Table 2.3 Export volumes and averaged landed prices of principal types of Australian fresh vegetables to Japan (1996).

Types	Tonnes	$/Kg
Onions	10 146	0.62
Asparagus	4 435	7.62
Carrots	2 635	1.02
Pumpkins	1 446	1.21
Broccoli	1 300	2.52
Sweet corn	985	2.82
Leeks	321	6.11

Source: Japan Tariff Association

Fresh vegetables are imported by trading companies and usually sold directly to retail outlets and are seldomley channelled through the wholesale markets. Large supermarket chains had previously been the purchasers from the importers but small supermarkets and speciality stores are now included as part of the importers efforts to service the nationwide outlets.

The overall steady decline in vegetable consumption per capita is not unlike that being experienced in many western countries. Seasonality of vegetable retailing is fast disappearing with consumers wanting to buy vegetables they want whenever they want them. While this is considered by some to increase imports and overall consumption others perceive that this has lowered nutritional and flavour content in vegetables produced in artificially controlled environments aimed at supplying this demand. This results in a general drop in consumer interest in vegetables. Japanese consumers have also become very particular about the appearance of fruit and vegetables, and will reject a product that does not match their standards regarding size, colour, shape and overall appearance. This emphasises the need for our producers to know the specifications required by the Japanese markets. However, there is some belief in the supermarkets that there is room for consumer education to understand that a vegetable which does not fit the accepted standards of shape, colour and size is not necessarily a lower quality product. This is the common dilemma of how to educate the consumer that appearance does not always determine flavour and nutritional value. The issue of loss of flavour and nutritional value in an effort to supply out of season production was regularly raised during our discussion in Japan.

2.1.3 Selected Vegetable Profiles

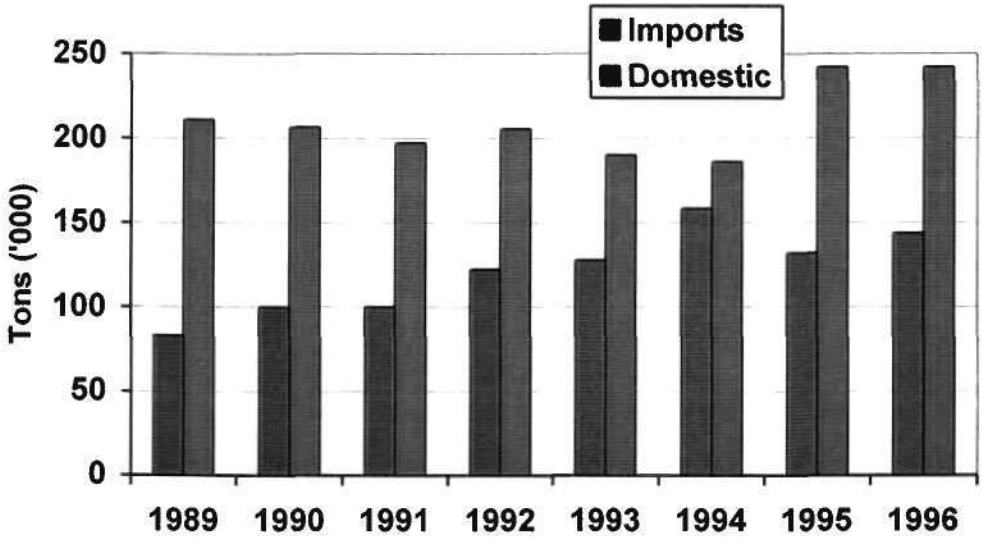


Figure 2.2 Kabocha imports versus domestic production 1989-1996.

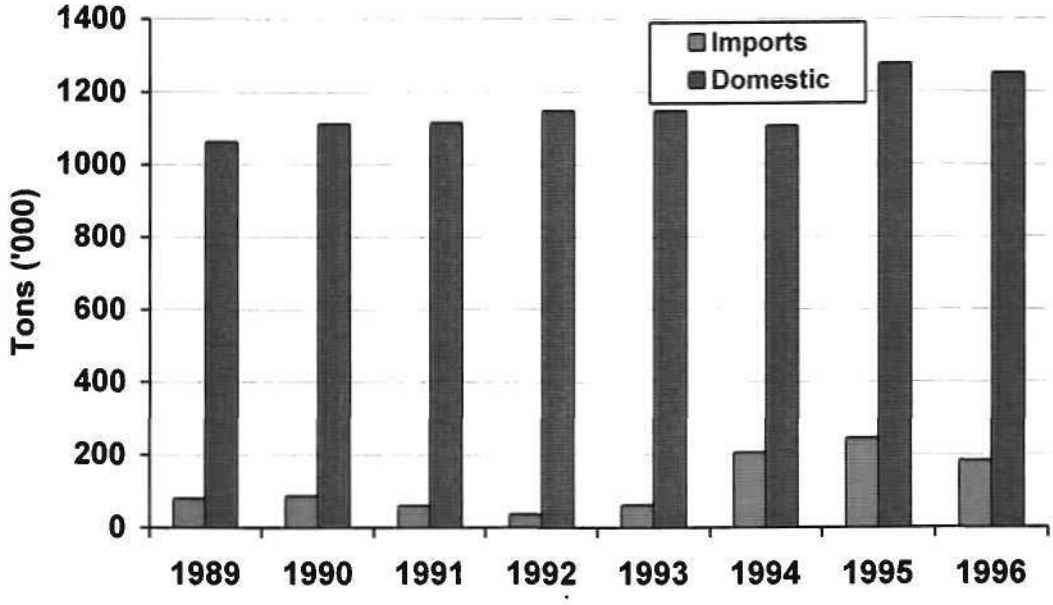


Figure 2.3 Onion imports versus domestic production 1989-1996.

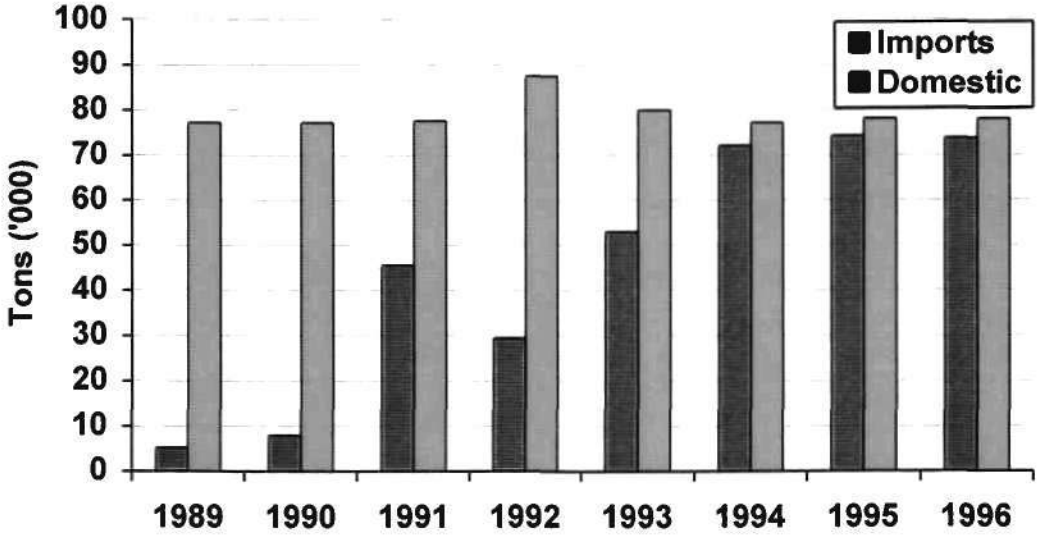


Figure 2.4 Broccoli imports versus domestic production 1989-1996.

2.2 Otha Market – Tetsuo Kudo and Nigel Traill

Of the 11 Central wholesale markets in Tokyo, the Otha market is the largest fruit and vegetable outlet handling 886 396 tons in 1995. This market is the major supplier to the supermarkets. This market was impressive for its neatness and quality of product. All vegetables were in cartons except onions which were in the traditional netted bags. The visit to the market floor enabled us the opportunity to see the excellent standard of the local and imported produce and the incomparable presentation in relation to the other Asian markets we visited.

Plate 2.1 Presentation of fruit and vegetables in Ohta Market was outstanding as demonstrated by these locally produced rockmelons.

Some idea of the through-put of vegetables in the Tokyo metropolitan markets is illustrated in Table 2.4.

Table 2.4. Vegetables handled in 1996 in the nine Tokyo metropolitan markets securing this category of produce.

Category	Volume (tons)
Vegetables	1 823 697
Cabbages	186 443
Japanese radishes (daikon)	170 435
Onions	165 751
Chinese cabbages	137 296
Potatoes	120 070
Carrots	109 761
Cucumbers	99 026

A brief description of the market operation is outlined. Producers either market their produce via a Producers Cooperative or brokers within the production area. Produce is transported to the central wholesale markets from 3pm through till midnight where wholesalers lay out the produce on the market floor prior to the auction. The authorised buyers (retailers and supermarket agents) and jobbers (intermediate wholesalers) inspect the produce and supplies prior to auction to decide what produce to purchase and what price they would pay the wholesaler. The wholesalers sell by auction the goods consigned to them. Their commission is fixed by municipal ordinance at 8.5 percent for vegetables. The wholesaler in the market must get permission to operate from the Ministry of Agriculture, Forestry and Fisheries. Intermediate wholesalers sell goods purchased from the wholesaler at their own shops within the market to buyers including stock purchasers such as retailers and caterers. The retailers and supermarket agents may also purchase directly from the wholesalers at the auction in the same way as the jobbers do provided they like the jobbers get approved from the metropolitan market authority. The consumers purchase from the Stock purchasers and authorised buyers generally via supermarkets and dedicated fruit and vegetable retail outlets.

Plate 2.2 Produce in Ohta Markets is sold by auction.

During our visit to the Ohta market we had the opportunity to hold brief discussion with Mr Tetsuo Kudo representing Tokyo Seika Co. Ltd, a wholesaler in the market. He provided us with the grade sizes and carton/bag capacity for selected heavy vegetables.

Potatoes are sold in 10 and 20kg cardboard cartons in 6 grades – 3L(260g), 2L(190-260g), L(120-190g), M(70-120g), S (30-70g) and 2S (30g). Sweet potatoes are also sold in 10 and 20kg cartons in 5 grades determined by root diameter at the thickest point – 2L (9cm), L* (8-9cm) L(7-8cm), M(6-7cm) and S(5-6cm).

Onions are sold in 20kg netted bags and graded by diameter into 4 grades – 2L (7.0cm), L (6.0-7.0cm), M (5.0-6.0cm) and S (4.0-5.0cm).

Kabocha pumpkins are sold in 10kg cartons in 4 grades 4/5 (2.0 – 2.5kg), 6/7 (1.5 –2.0kg), 8 (1.1 - 1.5) and 10 (0.9 – 1.1kg). In the case of Kabocha the grade sizes indicate the number of fruit per carton with the 4/5 grade being the preferred size.

Our discussions with Mr Kudo centred around opportunities for exporting heavy vegetables from Queensland. Fresh potatoes are unable to be imported due to restrictions on soil contamination and the subsequent risk of disease. Imports of frozen french fries have increased marketly (127 000t in 1988 to 241 000t in 1997). These mainly come from the US, Canada, China and Holland with 1 171t coming from Australia in 1997. The white skinned varieties Danshuku and Mayqueen are the most popular local varieties. Since Queensland does not have a recognised French fry industry through a lack of suitable varieties, exports would need to be in some form of pre-peeled and possibly semi-processed fresh market varieties.

The opportunities for sweet onion exports will depend mainly on the seasonal conditions in the major growing areas on the northern island of Hokaido. Between September and April, 95% of Japan's production is derived from this island. Japan prefers the sweet or low pungent onion because it is more readily eaten by children. Production from May to June is primarily from the main island of Honshu and supply from June to September is from stored reserves of these onions. The preferred shape is a globe type onion. Overall the sweet onions in Queensland are very similar to the sweet onions produced in Japan which presents an opportunity for increased exports of sweet onions from Queensland. Japan also imports large onions (90-100ml) diameter mainly from the USA for processing when this size range is unavailable from the domestic market.

Plate 2.3 Kerry Qualischefski inspects quality of locally produced sweet onions which was similar to his imported product.

The main Kabocha season in Japan is May to October but the vegetable is eaten all year round. There is an increasing demand for this vegetable and in addition to imported fresh Kabocha, it is also supplied as processed product as well as frozen pumpkin pieces. Importantly, the bright yellow flesh colour is preferred with a dry matter content of 18% or more. Varieties with a sweet or aromatic flavour are preferred. Presently the occurrence of the Mediterranean fruit fly on continental Australia prevents the export of fresh Kabocha from Queensland. Queensland has the potential to at least supply Kabocha from October to January. Supply during February to April is more likely to suffer from mosaic virus in Queensland.

Plate 2.4 Nigel Traill gets the detail of what is required for imported Kabocha.

Brief discussions were also held about carrots and sweet corn. Domestic production of sweet corn is from May to September while fresh corn is imported from November to April. Retort packs made from domestic production are available during the off-season to offset their need for full importation of this vegetable. Opportunities exist for increased sweet corn exports from Queensland. The Koyo type of carrot is the preferred carrot eaten in Japan. The preferred grades are L(180-250g) and M(120-180g). The Nance type carrot which is more elongated than the Koyo type and which is more popular in Queensland does not sell well in Japan. Yields of the Koyo type carrot are too low to make it an export proposition from Queensland.

Mr Kudo stressed that it is very important for potential exporters to find out what are the preferred varieties that the Japanese consumers want and to supply these rather than force on to the market varieties that produce well in the environment where the export crop is grown.

2.3 Tsukiji Market – Makoto Kanazawa and Nigel Traill

At the Tsukiji market we were met by Mr Makoto Kanazawa the assistant general manager. Mr Kanazawa was keen to explain the difference between the Ohta and Tsukiji Markets as many visitors believe that the latter market trades mainly as a fish market. While this is true, the Tsukiji Market has approximately two-thirds of the vegetable trade that the Ohta Market has and therefore is a significant outlet for vegetables.

A major difference between the two markets is that the Tsukiji Market supplies products to the food service sector whereas Ohta is a major supplier to the supermarkets. The significant restaurant trade in Tokyo demands a wide range of vegetable products resulting in a much greater product range in the Tsukiji market (almost 800) compared to 400 product categories at Ohta.

Mr Kanazawa stated that while products such as onions and asparagus are important vegetables in the Japanese diet and appear in both markets, Tsukiji has opportunities for vegetables including leek and celery because of the demand for them in the service industries. Wholesalers in the market can't import from overseas directly so they work closely with trading companies. These trading companies go out and source the particular commodity and put them through the markets or they take opportunities when overseas suppliers visit the market and introduce them to their product. Mr Kanazawa was keen to have suppliers from Queensland visit the market as he felt that there were great opportunities for specialty products from Queensland for the restaurant trade. The Tsukiji Market has large expectations of Australia increasing its share of Japanese horticultural products because of its differences in growing season and that there are products grown in Queensland that are not yet imported into Japan. Agents from the market have been surprised at the scale of Queensland farms and the product range. Again it was stressed the need to supply products which are suitable to the Japanese market thus requiring good communication between the supplier and the trading companies.

The Japanese markets have very strict regulations about agricultural residues including chemicals. The general tendency is to use vegetables that can claim to have been grown in low or nil chemical environments or organic ones. Currently, there is no fully established system for certifying organic products. Queensland should take advantage of the fact that it does grow a lot of its vegetables in a low chemical environment. The market was interested in knowing details of the Australian organic trade mark. Food safety was of the highest priority for chefs and staff in charge of menus in restaurants and the food service sector, the major clients of the Tsukiji Market.

Finally, Mr Kanazawa recommended in addition to stability of supply, price needs to be negotiated against the long term market price in Japan and not the peak price which many producers tend to only see in a country which is already probably the world's the highest paying market for vegetables.

Mr Kanazawa supplied the following information about Japanese vegetable imports. In 1997 imports of fresh vegetables totalled 570 000t compared to 660 000t in 1995. The decline is attributed to improved domestic growing seasons in 1996 and 1997 and the declining value of the Yen. In 1997, onions (174 000t) and pumpkin (135 000t) were the major imports.

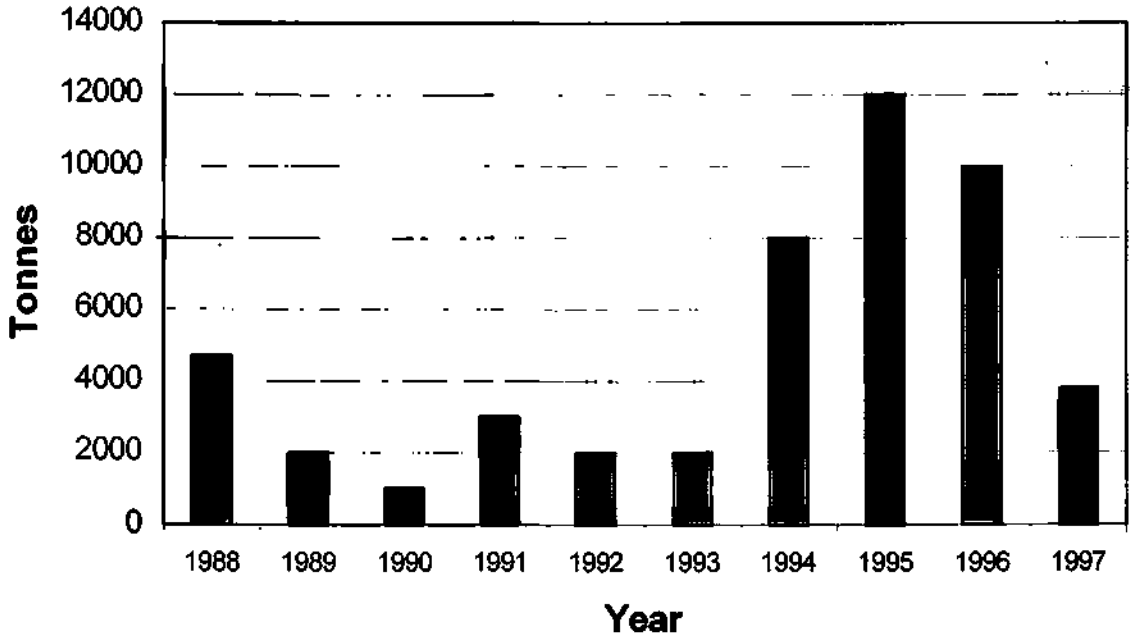


Figure 2.5 Australia's contribution to onion exports to Japan 1988/97.

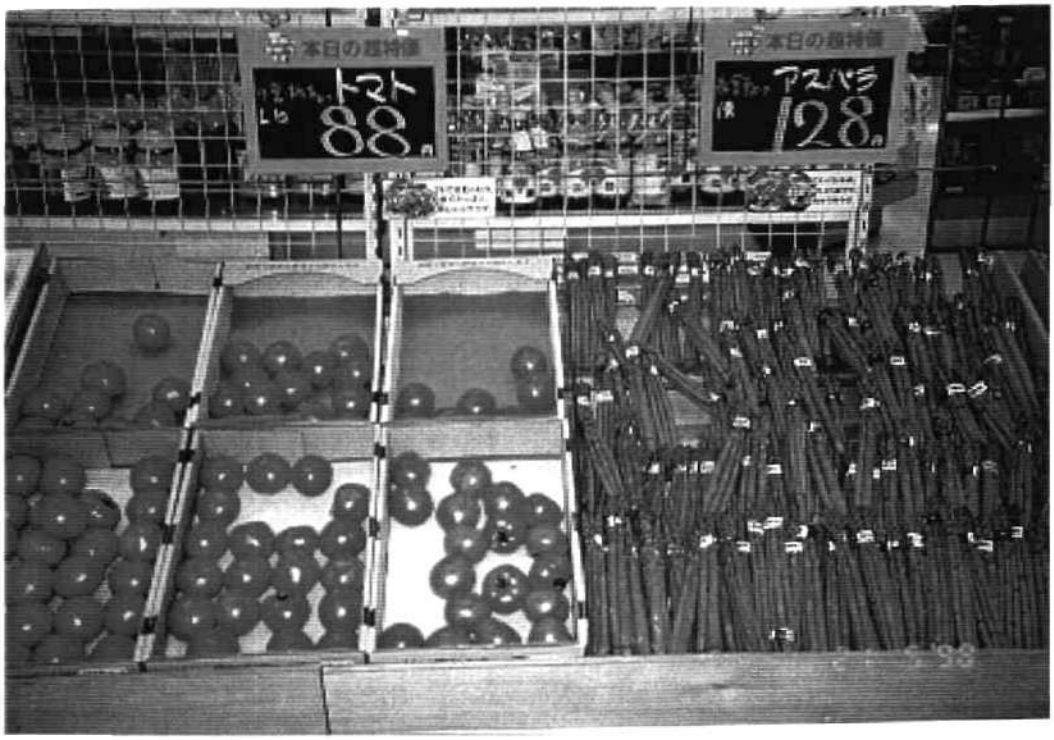


Plate 2.5 The high level of presentation of fruit and vegetables in supermarkets is maintained by regular checking by supermarket staff.

Mr Kanazawa also provided details about shopping trends in Japan. Currently, 50-60% of vegetables are purchased via the supermarket and this is expected to increase. The Japanese people shop much more frequently than Australian consumers and this has potential impact on how packaging of exports is done in Australia. There could be an advantage of Queensland exporters packing in containers suitable for retailing to reduce repacking once the product arrives for retailing in Japan.

Plate 2.6 Japanese consumers shop regularly hence many use bicycles to shop at supermarkets.

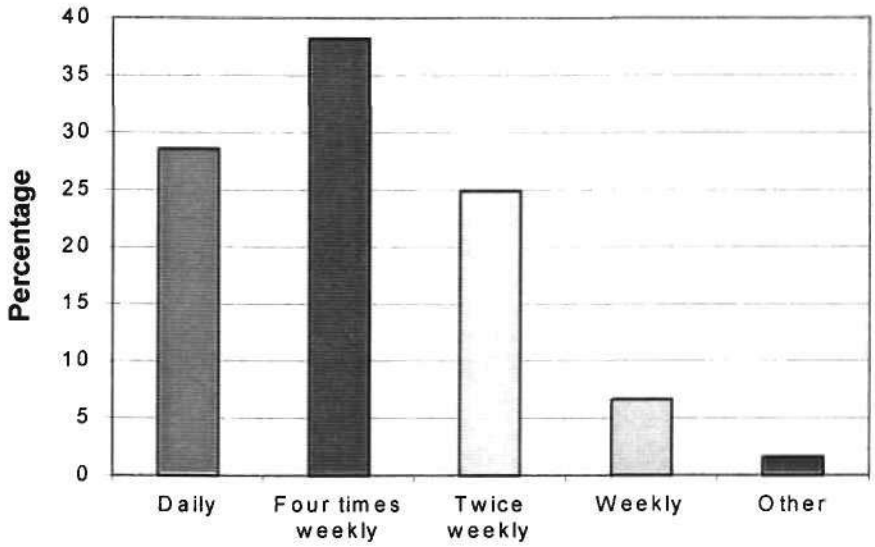


Figure 2.6 Frequency of vegetable purchases by customers in Japanese supermarkets.

Plate 2.7 Fruit and vegetables are regularly sold as gift packs as demonstrated in this well presented display in a corner store.

2.2.1 Frozen Vegetables – Schin-Ichi Taneya and Nigel Traill

Mr Shin-Ichi Taneya of the Japan Frozen Food association provided us with an overview of the frozen vegetable industry in relation to domestic and imported products. The following table illustrates the significant growth over the 1992-1996 period, an increase of 50%.

Table 2.5 Imports of frozen vegetables by categories in 1992 – 1996.

Year/Category	Potato	Beans	Sweet corn	Other Vegetables	Total
1992	159 102	100 910	38 819	100 974	400 805
1993	155 433	104 784	42 365	129 236	431 818
1994	175 601	114 969	43 695	166 774	501 039
1995	199 613	112 847	46 740	189 229	548 429
1996	227 656	117 145	46 389	212 846	604 036
1996/1995(%)	114.0	103.8	99.2	112.5	110.1

* Includes Soyabean **Source: Japan Frozen Food Association**

The reasons attributed to the rate of growth in this sector include ease of use, increasing consumer awareness of the quality of these products and their relative cheapness to domestic product because of the strength of the Yen over this period. Although the Yen has weakened since this time, the long term view is the changing lifestyles of Japanese consumers are expected to continue the growth of frozen vegetables albeit at a lesser pace. Increasing domestic labour costs and a growing shortage of agricultural labour are expected to cause domestic production to remain flat or decline gradually. Interestingly, Mr Taneya discussed research that has shown in many cases frozen products including vegetables are more nutritious than fresh vegetables as the product for freezing is harvested at its prime when nutrients are also at their highest. The research has shown that fresh vegetables harvested early or late have fewer nutrients than those harvested at their prime. This information has had some television coverage resulting in increasing sales of some frozen vegetable products.

The greatest increase in frozen vegetable products has been in the food processing and food service industry which accounts for 70% of the total demand with the remaining 30% being accounted for by home use. The convenience and labour saving attributes associated with the use of frozen vegetables are prime reasons for the increase in use of these products in the processing and food service industries. Frozen products also contribute to the stabilisation of supply in both food processing and household consumption outlets.

Consumers are demonstrating a growing interest in frozen organic vegetables, though the price differential between organic and non-organic varieties is significant. It is considered that if organic production systems develop more widely and the price differential drops to about 15%, there is strong potential for growth in this market.

The domestic market in 1995 was around 100 000 tons or approximately 15% of the total frozen vegetable market. This production is sustained by its consistent quality and the substantial number of consumers who prefer the taste of domestically grown vegetables. The local industry in many cases has capitalised on selecting domestically grown vegetables that have unique characteristics to protect local producers from being eliminated by the rapid rise of imports.

Table 2.6 Domestic production of frozen vegetables.

Vegetables	1991	1992	1993	1994	1995	1996	1997
Taros (satoimos)	-	-	-	3 560	2 996	2 167	1 637
Carrots	-	-	-	10 516	9 926	6 286	6 566
Corn on the cob	8 239	7 908	8 580	9 608	6 205	6 202	4 843
Kernel corn	6 709	4 897	4 860	6 012	6 595	4 078	4 574
Pumpkins	9 792	11 620	11 596	13 814	11 343	9 007	10 627
French Fried potatoes	18 075	18 608	21 598	18 141	15 701	15 529	12 510
Other potatoes	17 625	20 197	22 521	20 598	19 624	19 334	19 551
Spinach	6 007	7 506	7 135	6 928	6 780	5 850	6 652
Other vegetables and fruits	29 110	34 292	38 283	23 633	25 179	25 384	21 932
TOTAL	95 197	105 028	114 573	112 810	104 349	91 837	85 892

Source: Japan Frozen Food Association

In the mid-term potatoes, spinach, taro, broccoli and mixed vegetables are expected to increase. Although quantities of the following vegetables in real terms remain small, increased imports of cauliflower, garlic, sprouts, carrots, lotus roots and burdock are occurring.

Table 2.7 Imports (t) of frozen vegetables by categories our sources in 1996
(Top eight sources in order of export volume)

Category Source	Potato	Peas & Beans				Spinach	Sweet corn	Taro	Broccoli	Mixed vegetables	Other vegetables	Total
		Peas	Beans	Green Soya Beans	Other beans							
	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume (96/95:%)
U.S.A	209 479	5 487	1 081	40	43	241	40,378		954	13 295	9 650	280 782 (104.9)
China	4 002	7 912	18 346	27 395	3 052	30 248		54 281	2 723	7 592	62 413	217 965 (102.3)
Taiwan		20	75	25 586		80		3	43	296	1 902	28 005 (95.5)
New Zealand	550	7 185	148		269		8 882			7 164	2 329	26 528 (111.5)
Canada	24 085						696				228	25 010 (112.3)
Thailand		2	10 316	6 949			17	3		119	4 722	22 128 (99.5)
Mexico				22					8 098	2 462	2 352	12 933 (121.1)
Australia	1 171	343					151			128	1 726	3 519 (67.6)

Source: Japan frozen food association

Of the 241 120t of potatoes imported in 1997, the USA supplied 209 479t and Australia 1 171t. Product is imported as French fries both crinkle and straight cuts, wedges (known as natural cuts) and segments. French fries from the Russet Burbank variety are the predominant import. Japan still produces approximately 10 000t of French fries from a particular variety. This product purchased by consumers who fear higher chemical residues in the imported product.

Little sweet potato is frozen with approximately 2 000t from the domestic market and 7 000t imported annually from China. The main use of frozen sweet potato is for the production of a sweet or candy not unlike toffee apples where the frozen product is deep-fried and then covered in Japanese syrup.

Mr Taneya was unaware of any imported frozen pumpkin product, though he remembered an exporter from Australia inquiring about the possibility. Mr Taneya indicated there could be some imports but they would be classified as other vegetables and thus no specific reference appears in the statistical data. He also suspected that there was sufficient domestic production to offset any major imports of frozen pumpkin. The frozen pumpkin is often processed into a paste, which is used in confectionary, cakes and breads.

2.3 Visit to Saitama Prefecture – Kazuo Ohtsuka, Hiroshi Aizaki and Nigel Traill

2.3.1 Kyosekihata Experimental Station

The Saitama Prefecture adjoins the Tokyo Prefecture to the north and has a sister statehood relationship with Queensland. It is a major sweet potato growing area in Japan. Our visit to Saitama included a visit to the Kyosekihata Experimental Station as guests of Mr Ohtsuka and Mr Aizaki of the Saitama Agricultural Department. Mr Shimazaki, the Research Station Manager outlined the research being conducted on the 4.5ha Station.

Research at the Station mainly focuses on root vegetables including potato, sweet potato and taro. Agronomic studies and plant improvement were major thrusts of the research being conducted. As in Queensland, seed companies do most of the plant improvement of non-vegetatively reproduced vegetables. In addition to the plant improvement work, emphasis is also on efficient production systems that produce the fastidious quality of vegetables presented in the market place, production methods that extend both ends of the growing season and integrated pest management work to reduce the dependence on chemical usage for pest and disease control.

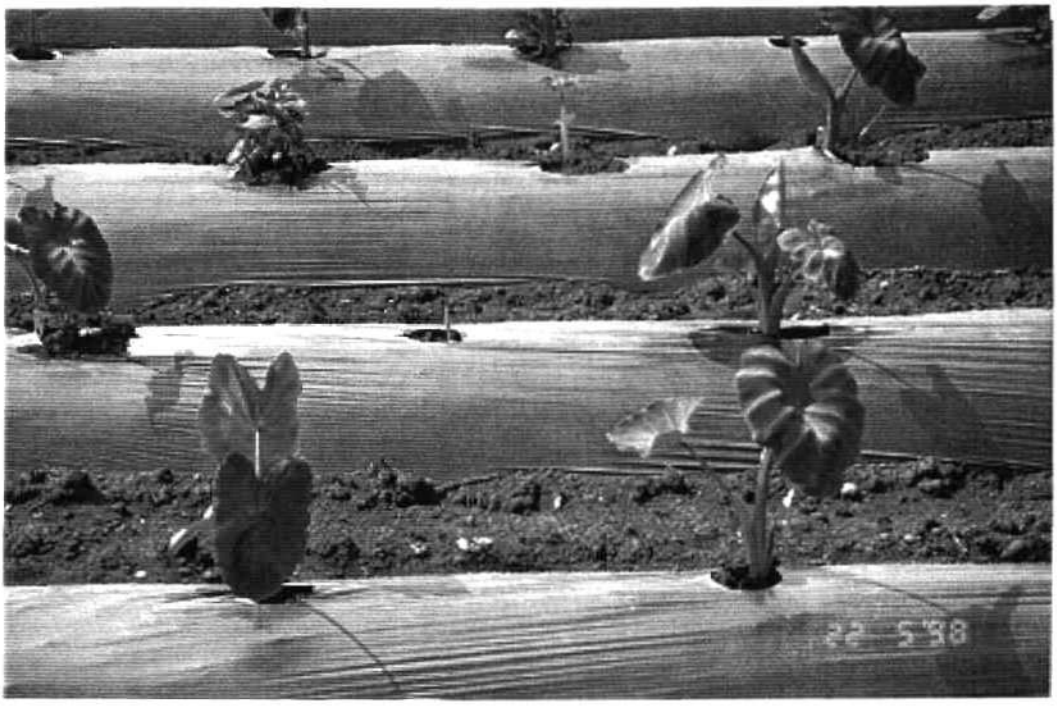


Plate 2.8 Taro was grown widely in Saitama Prefecture and was a focus of research at the Kyosekihata Research Station.

In Saitama 84.9% of the sweet potatoes grown is of the Beniazuma variety. It is grown as a fresh vegetable and not for industrial or processing use. The variety is popular for fresh consumption because it looks and tastes good. This red skinned variety has a high dry matter, has good disease resistance and is popular as a boiled vegetable. Negotiations will be developed to have germplasm of this variety introduced into Queensland.

Plate 2.9 The sweet potato variety Beniazuma is widely grown in Saitama Prefecture and presents well as demonstrated in this carton in the Ohta Market.

The two main potato varieties grown in Saitama are Danshuku and Mayqueen, which did not appear to have any special attributes beyond varieties grown in Australia.

The soil on the station was a brown volcanic one, high in organic matter and very friable. The research we observed included a taro crop in which fertiliser rates were being evaluated, sweet potato variety trials, evaluation of biodegradable plastic mulches inside and outside polyhouses and clear versus black plastic mulch for sweet potato production.

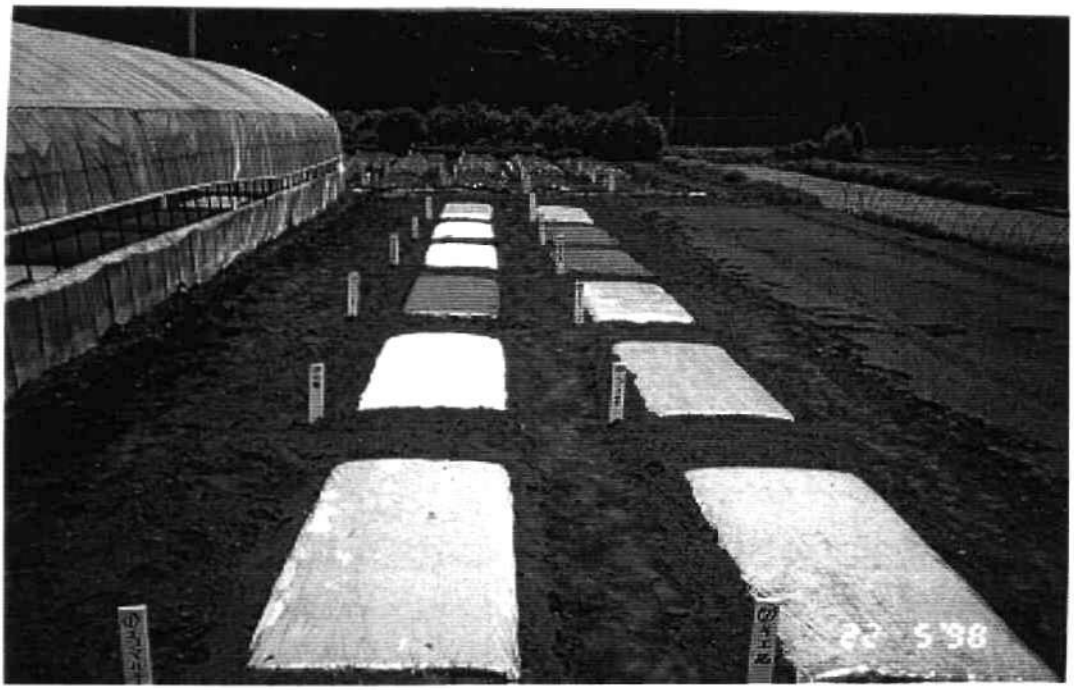


Plate 2.10 Research to determine suitable biodegradable plastic mulches for both field and glasshouse production to reduce environmental restrictions on plastic mulch disposal received high priority at the Research Station.

The main selection criteria for sweet potatoes for the fresh market include high dry matter and oblong shaped roots with rounded ends. In comparison trials between plastic mulches and non-mulched treatments, growth was superior with the plastic mulch. This mulch is used to raise the temperature to extend the growing season of the crop. As in Australia, the disposal of the plastic mulch is an environmental concern. Similar research to that being conducted in Queensland to select a plastic mulch which will biodegrade by crop harvest was observed.

Plate 2.11 Plastic mulch enhances early season production compared to non mulched sweet potato production.

Potato research was centred on serial plantings which also included plastic mulch for early season plantings. Yield was assessed from each planting so that yields for commercial production could be predicted for a specific planting time and thus better match production to market demand.

2.3.2 Sweet Potato Farm – Mr Abe and Nigel Traill

A visit was arranged to Mr Abe's sweet potato farm. On route from the Research Station to the sweet potato farm it was explained how leaf litter from the tree borders surrounding the small farms was collected and mulched and then added to the soil at planting of the various crops. This has enabled the organic matter in the soil to be maintained. However, younger generation farmers are doing this less and less and there is a concerted effort by governments in the various prefectures to encourage the continuation of the practice.

Plate 2.12 Mr Abe displays the mulch derived from leaf litter from bordering tree shelters that is added to the soil annually to maintain organic matter.

The farm we visited was approximately 5 hectares and was typical of the size of farms in area. Originally the farms in the area consisted of 2.5ha of natural forest and 2.5ha of cultivation. The area of natural forest has diminished. The remaining forest supplies the organic matter to sustain the tilth of the soil that has been intensively cultivated for the last 300 years. Irrigation was rarely required in the district except for taro as regular rainfall occurred.

Plate 2.13 Mr Abe maintained his sweet potato planting material in excellent condition in a series of polyhouses.

Although Mr Abe also grew small plots of corn and potatoes he had specialised in sweet potatoes which had allowed him to afford mechanisation of planting and harvesting. Mr Abe produces his own cuttings inside and outside of polyhouses. The quality of the seedbeds were excellent with no apparent sign of virus in the planting material.

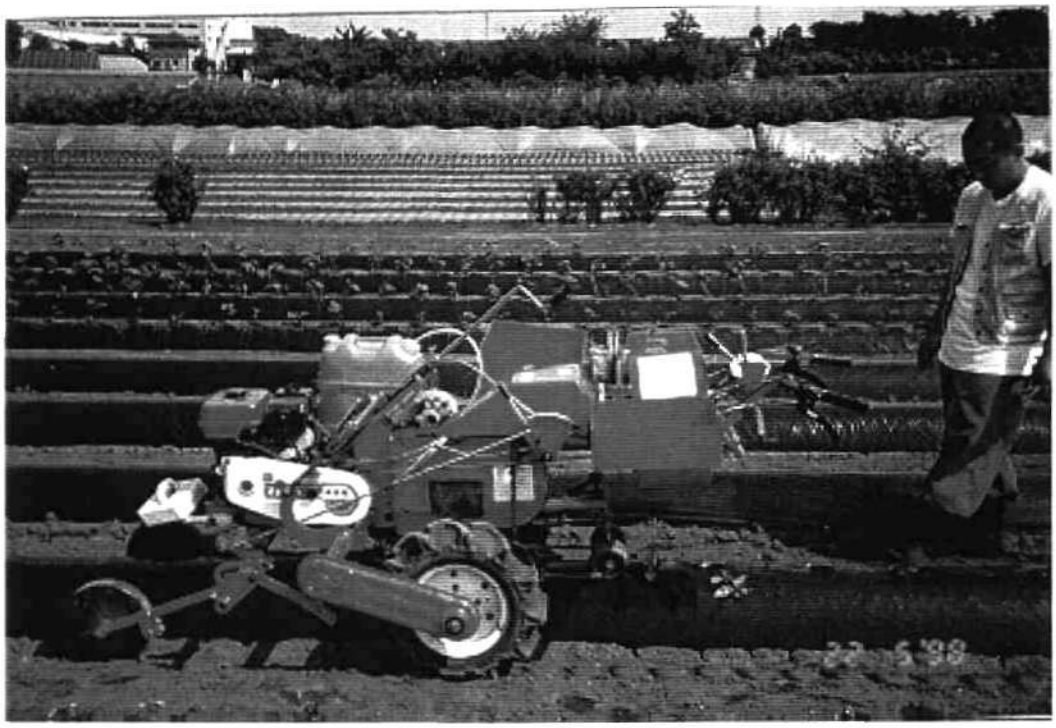


Plate 2.14 By concentrating on sweet potatoes Mr Abe has been able to mechanise his enterprise. Here a transplanter allows accurate plant spacing of transplants into plastic mulch.

Plate 2.15 Mr Abe demonstrates a sweet potato harvester that gently lifts the storage roots from the sandy soils after the tops have been removed.

Mr Abe estimated that it cost approximately $8 235/ha to produce the crop and that his profit was approximately $47 000.00/ha. A 30t/ha saleable crop at $40.00 (high price) in Queensland would return a gross of $60 000/ha.

2.3.3 Iruma Agricultural Co-operative – Mr Kawano and Nigel Traill

Mr Kawano met us for a brief visit at the Iruma Agricultural Cooperative which was en route from the sweet potato farm to the railway station where we departed from Saitama to return to Tokyo. The area in which the Cooperative was located was famous for rice and vegetables which were both handled at the Co-op. The Co-op provided vacuum cooling facilities which were available to farmers who brought their packaged product to the centre. The Co-op then distributed the product to various markets. Spinach, turnips Chinese mustard and taros were the main vegetables handled. The Co-op also provided a quality assurance check to insure correct labelling of grade and counts. Most of the farmers in the Co-op had family-run businesses but some of the larger farms in the district employed part-time workers as well.

Plate 2.16 Mr Kawano inspects quality of Chinese radish at a Farmers' Co-operative in a rural region of the Saitama Prefecture.

2.4 Seiyu Food Co Ltd – Yasuo Yabuki, Terumi Oguchi and Nigel Traill

On our return from Saitama we visited Mr Yasio Yabuki, Produce Manager of the Seiyu supermarket chain and Mr Terry Oguchi, who held a similar position with the Smile Corporation, another food retail chain.

Discussion first centred on Kabocha pumpkin. Pumpkin is usually imported in 500kg crates. This is the preferred method as the fruit can be easily checked for quality before brushing and polishing and packaging into 10kg cartons.

The pumpkins are either cut into halves, quarters or 100g packs for retailing. When asked how important the ground mark on the fruit is, the reply was that it was not so important now because it is realised how costly it is to prevent. To overcome the problem, the fruit have to be individually placed on some form of matting such as straw at fruit set. It was obvious in the Ohta market that Japanese production eliminates the ground mark which discolours as the fruit matures giving it a less attractive appearance. In the market the domestically produced product had a distinct appearance advantage to the imported product from Mexico and New Zealand and no doubt attracted a higher price. The preferred Kabocha was one harvested 55 days after pollination, with bright yellow flesh, a small seed cavity and a high dry matter (19-20%).

The retailers were very interested in knowing about sweet onion production and were keen to get some samples. These arrangements are being attended to Mr Kerry Qualischefski. The preferred grade was 75-85mm diameter.

Discussion also included their perception of organic produce and its future. They admitted that they were confused as to what constituted an organic label as they found it difficult to compare the organic standards set down in various exporting countries. Copies of Australian standards (BFA-Biological Farmers of Australia and NASSA-National Association for Sustainable Agriculture Australia) have been passed on to Mr Nigel Traill, marketing manager for the Queensland government office in Tokyo to pass on to the two produce managers.

The two supermarket chains import Queensland broccoli and are keen to expand this trade for our winter production as our product at this time of year is superior to the Californian product.

They are also interested in carrots from Australia and receive product from Woolworths as they have been unable to get reliability of quality and supply from individual growers. Mushrooms have been imported from Australia in the past but problems including high water content, high proportion of stem and the range of sizes presented in the consignment led the companies to seek other sources.

2.5 Takada Seed Co Ltd in Osaka – Akira Takada, Futoshi Kanamoto, Yoshihiro Fujiwara and Kenzo Fujiwara

A visit to the Takada seed company was organised to observe breeding of the Japanese yellow overwintering onion which is equivalent to the light brown skinned, short day sweet onions grown in Queensland.

Plate 2.17 Similar hybrid varieties to this one bred by Kenzo Fujiwara are currently being tested at Gatton Research Station.

At Osaka we were met by Messrs Kimito Shirakama, Ahira Takada and Futoshi Kanamoto who market sweet onions developed by Mr Kenzo Fujiwara and his son Mr Yoshihiro Fujiwara who have their own onion seed breeding company. We had particular interest in visiting this breeding company as we have receive the F1 hybrids Spring Moon and Spring Sun for evaluation in trials at Gatton Research Station.

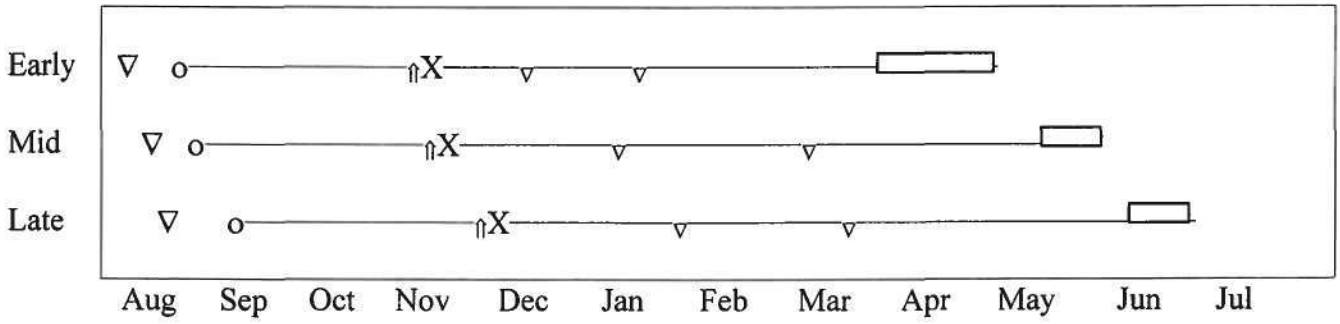
Plate 2.18 Mr Futoshi Kanamoto of Takada Seed Co Ltd (left) accompanied us on the visit with Yoshi (with cap) and Kenzo Fujiwara (right) to their sweet onion breeding block in suburban Osaka.

Mr Kenzo Fujiwara is a well respected breeder of sweet onions having grown up in the Senshu district 30km south of Oska city (N34° 30' : E135° 20') where the original Senshu yellow (we term Golden Brown) was introduced from the USA in 1884. The entire history of the Japanese overwintering onion breeding program has been based on the "Senshu" type developed in the Senshu district. In recent years many international seed companies have tried to develop hybrid varieties based on the "Senshu" type. Few companies have perfected such a hybrid but Mr Kenzo Fujiwara has had several successes in developing hybrids since 1962.

Plate 2.19 Mr Kenzo Fujiwara demonstrates the shape and size of the desired sweet onion hybrids he is developing.

We were impressed with the quality of bulb that Kenzo had developed and the sweetness of some of his new hybrids he had on trial. The overwintering onions are grouped into early, mid and late. They are seeded from late August to late September and harvested from April to June.

Plate 2.20 Kerry Qualischefski is impressed with the sweetness of the early sweet onion varieties being developed by Kenzo Fujiwara.



∇	**Add basal fertiliser**	⇑	**Add basal fertiliser**	▿	**Add fertiliser**
o	**Seeding**	**X**	**Transplant**	▭	**Harvest**

Figure 2.7 Growth cycle for early, mid, and late overwintering onions.

Plate 2.21 Sweet onion production near Osaka is often undertaken by part-time farmers in areas less than 0.5ha in suburban areas.

All onion production is established from transplants (all commercial production is from hybrids with open pollinated varieties restricted to home garden use). Transplants are grown in $2cm^2$ cells and are transplanted when the plants are 55 – 60 days old (three leaf stage and approximately 22cm long). Many of the overwintering onions are grown on town farms approximately 0.5ha in size. The onions are pulled and left on the ground with tops and roots intact for 1-2 days before they are hung in drying sheds and marketed as required.

Plate 2.22 Bulbs are left to dry in field with tops attached for 1-2 days before shed storage.

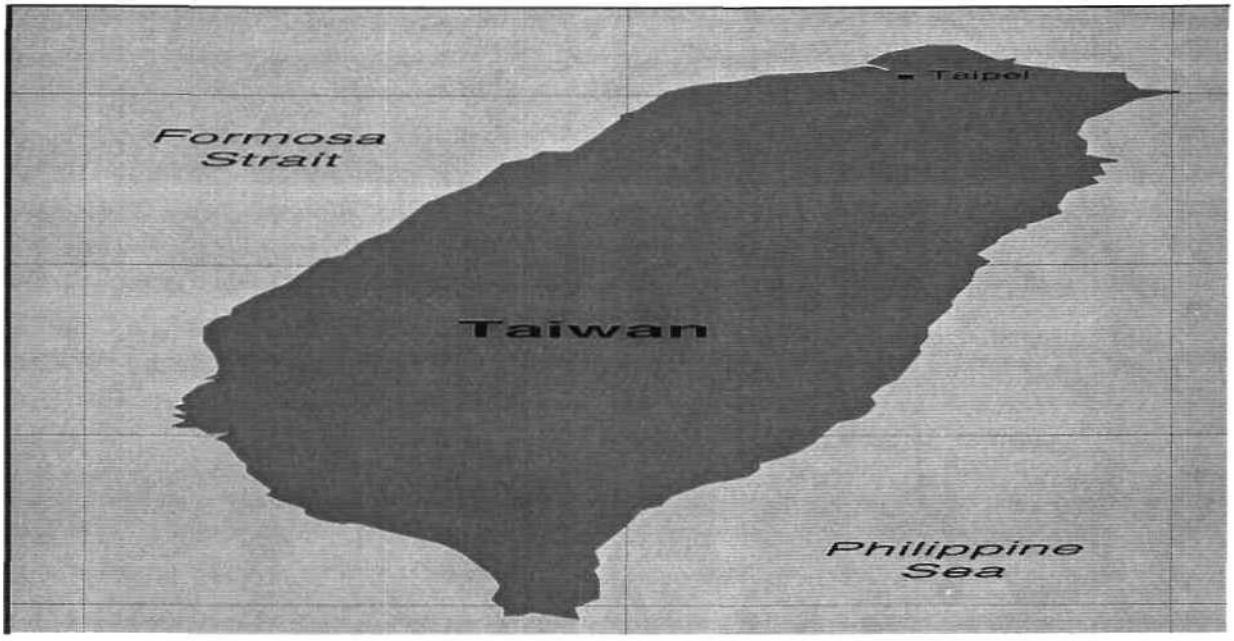
Plate 2.23 Selected bulbs for breeding purposes stored with tops attached in a simple shed similar to the method used by small commercial producers.

Early overwintering varieties like our early varieties are the sweetest and have fewer skins than the later varieties. Kenzo believes that higher temperatures and lower levels of applied nitrogen improve skin development. Kenzo also believes that doubling was increased by high temperatures and high rates of fertiliser application while bolting was influenced by low temperatures. In early onions, the stage for these abnormalities to occur is a brief period of 3-4 days in late November, approximately 1 month after transplanting. In late onions the vulnerable stage is in early January, about 7 weeks after transplanting.

Kenzo was keen to provide seed of his most promising hybrids via the Takada Seed Company for evaluation at Gatton. His varieties (Spring Moon and Spring Star) were evaluated at Gatton Research Station in 1998. These mild varieties will be further evaluated in 1999.

Takada are also keen to provide seed of their Kabocha pumpkin lines for evaluation in Queensland.

3.0 TAIWAN



3.1 Asian Vegetable Research and Development Centre (AVRDC) – Dr Shanmugasundaram

Our visit to AVRDC was organised by Dr S Shanmugasundaram (Dr Sundar) who kindly stood in for Dr Chandra Pathak, allium breeder who had just resigned from the Centre to take up a position with the Indian Institute of Horticulture Research in Bangalore. Dr Pathak had visited Gatton Research Station as part of a pre conference tour of the Alliums Australia Conference held in Adelaide in November 1997.

Plate 3.1 Dr Sundar explains to us some of the more unusual Asian vegetables in the Shanhua wet markets.

We first visited the local vegetable market in Shanhua (population 80 000) which is adjacent to the Research Centre. This gave us an opportunity to observe the range and quality of fruit and vegetables in a typical wet market in Taiwan. Buyers buy the produce at a wholesale market and retail it in the village market. These village markets account for approximately 50% of sales and Dr Sundar expected this to remain relatively constant in the near future at least. Few potatoes and onions were seen on the stalls with leafy vegetables, gourds, sweet corn, mushrooms, yams, taro and bamboo shoots being much more prevalent. Quality of fruit and vegetables was high. A new building had just been completed in the village to house all the stalls in a weatherproof environment. Dr Sundar commented that there was some apprehension among stallholders and customers about changing the traditional style of the wet markets. A feature of these village markets is that the stallholders own more than one business often retailing fruit and vegetables as well as clothing.

Plate 3.2 A stall in the Shanhua wet market exhibiting a wide range of quality vegetables.

Plate 3.3 Root crops including sweet potato, potato, yam, ginger and taro at the Shanhua wet market.

Plate 3.4 Pickled vegetables were an interesting novelty to us in the Shanhua wet market.

The AVRDC is situated near the village of Shanhua in the south of Taiwan on 112ha of land of which 95ha is farmed. On campus there are 22 international staff from 12 countries and 300 local staff. Rice is grown in rotation with the vegetable research. The rice production phase is contracted out to private enterprise. The Centre was established to assist developing countries to improve methods to produce, market and distribute vegetables while trying to enhance the quality of the environment. In developing countries daily consumption of vegetables is 60-90gm compared to 240gm for developed countries.

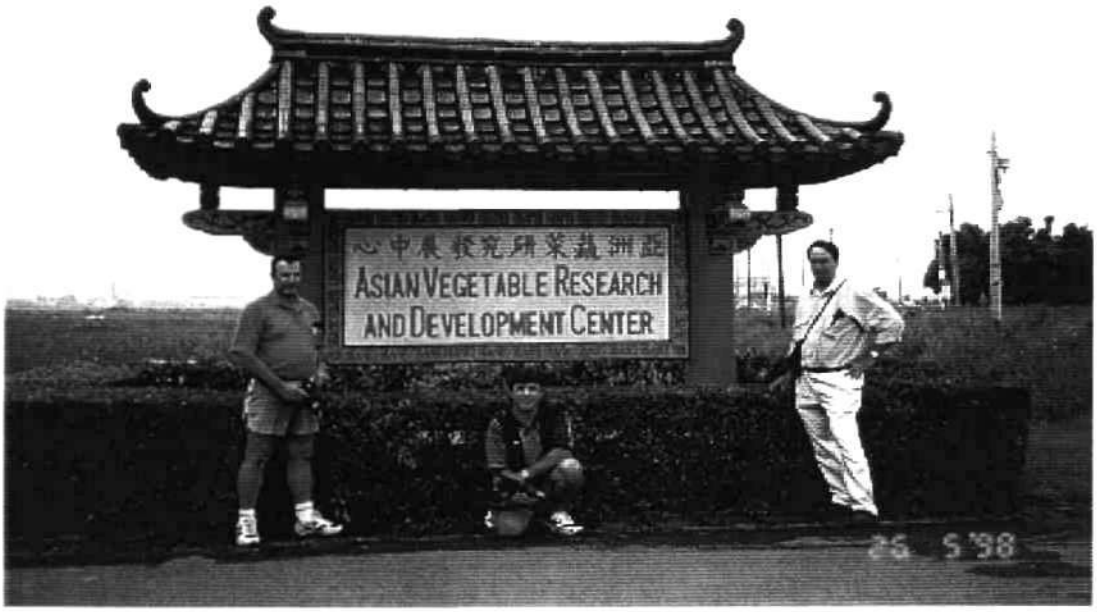


Plate 3.5 The entrance to the Asian Vegetable Research and Development Centre research farm near Shanhua in Southern Taiwan.

Plate 3.6 Straw mulch from the rice rotation crop is being used as a weed control measure in Brassicas.

Although AVRDC was initially established to address Asian needs, since 1991 it has accepted the challenge to extend its activities to include Africa and Latin America. The AVRDC believes that raising vegetables can alleviate poverty, hunger and malnutrition in the developing world. Vegetable production provides jobs, higher incomes, better nutrition and for some countries valuable foreign exchange. For the very poor in the rural and urban areas, small home garden plots can provide supplementary calories, proteins, vitamins, minerals and occasional cash.

The AVRDC has helped establish and continues to administer five international regional research networks including Southern Africa, Central America, South Asia and South East-Asia. The Centre is fully aware of the mutual benefits that can be gained if researchers in both developed and developing countries can share information and resources and to collaborate with one another. The Centre has therefore assumed the role of catalyst to bring research institutes into a global network for vegetable research and development. A feature of the Centre is the genetic resources and seed unit which has a major role in the conservation of tropical vegetable germplasm. Each year the Centre distributes over 20 000 seed samples mainly for plant breeding. The genetic resources and seed unit has major collections for soybean, tomato, capsicum, brassica, eggplant and allium crops. We had the opportunity to visit the unit and discuss the range of germplasm and its availability with Dr Engle. She was also able to provide us with copies of plant descriptors for tomato, pepper and allium.

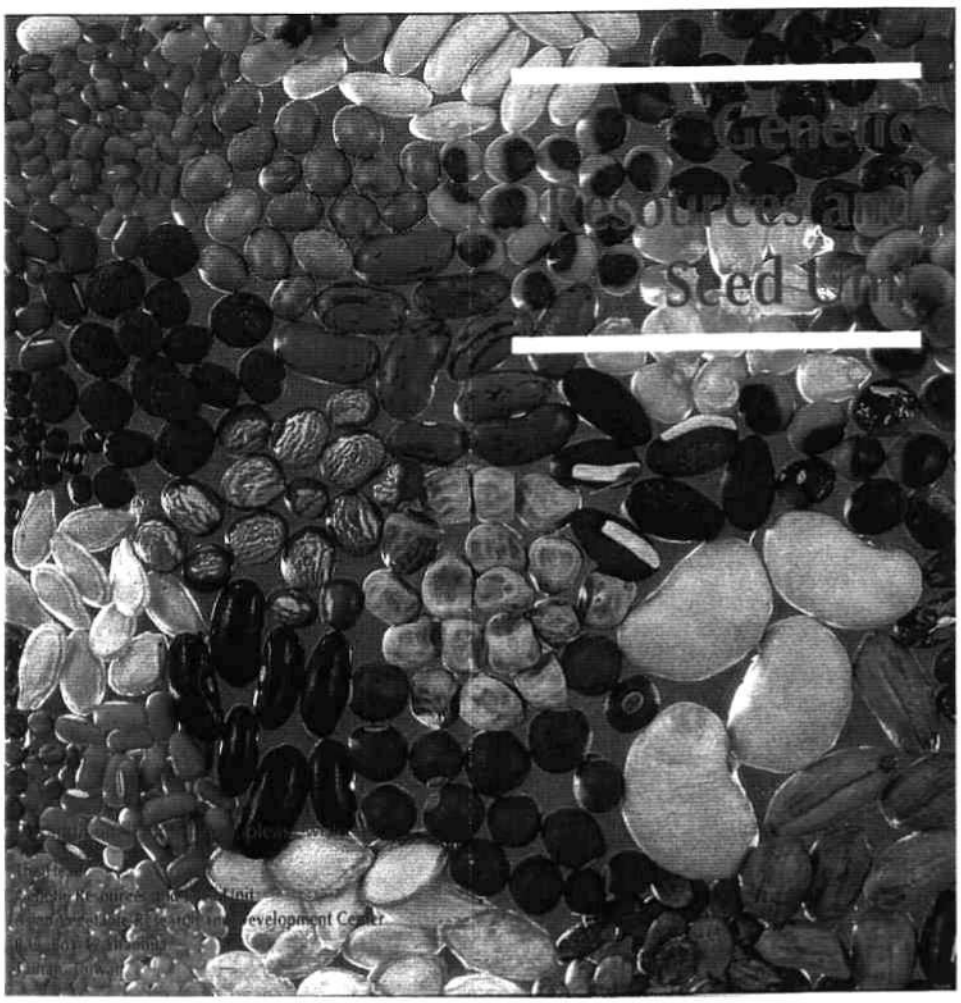


Plate 3.7 The Genetic Resource and Seed Unit plays a major role in the conservation of tropical vegetable germplasm in addition to the supply of seed samples for breeding purposes.

Ms Rachel Ko gave us an overview of the onion-breeding program. Rachel had been working with Dr Pathak before his resignation. Their work concentrated on improving the storage life of varieties to enable greater self reliance on domestic production. We had the opportunity to inspect Rachel's storage trials where she has been able to store bulbs up to five months, two months longer than non-improved lines. Storage was under ambient conditions of high humidity and temperatures not unlike our January/February climate. In addition to increasing storage life, the breeding program is concentrating on developing varieties with resistance to stemphylium leaf blight and anthracnose as well as thrips. Resistance to the two fungal diseases is being transferred from another species of onion and promising combinations have been developed.

Plate 3.8 Rachel Ko displays an onion sample from the storage trial under ambient temperatures she is conducting to identify superior storage lines of short day onions.

Selection of improved garlic lines is also undertaken. This is similar to work that we have done at Gatton Research Station where we have selected Glenlarge and Southern Glen. The AVRDC selections did not appear superior to the Gatton selections. However, the Centre does do virus elimination in garlic. It is recommended that we should obtain a quote to get virus free germplasm of Glenlarge and Southern Glen to determine how important virus is in the production of these two varieties. Dr S K Green is the virology contact at the Centre.

We spent a short period with Drs Peter Hanson and Jen-Tsu Chen to discuss the tomato improvement project and Dr Terry Berke to be briefed on the pepper improvement program. A major feature of the tomato project is the selection for heat tolerance (mean maximum/minimum temperatures of about 34/24°C). Several lines carrying excellent levels of heat tolerance have been identified. Work on resistance breeding to bacterial wilt (*Pseudomonas solanacearum*) tomato yellow leaf curl virus transmitted by the silverleaf whitefly (*Bemisia argentifolii* – a major concern in the Queensland tomato industry) and tomato fruitworm (*Helicoverpa armigera*) is currently in progress. Queensland Horticulture Institute tomato breeders at Bowen and Bundaberg are in contact with the tomato research being conducted at the Centre.

Plate 3.9 Dr Chen demonstrates a bunch of heat tolerant cherry tomatoes sold as fruit in Taiwan.

The chilli and sweet pepper (capsicum spp.) program is also wide ranging in its scope with a major emphasis on breeding. The objectives of the pepper breeding program at the AVRDC are breeding for disease and insect resistance, abiotic tolerance, quality traits, and male sterility. The following pathogens are of most concern: cucumber mosaic virus (cmv), chilli venial mottle virus (cvmv), potato virus y(pvy), tobacco mosaic virus (tmv), phytophthora root rot (caused by *Phytophthora capsici*), bacterial spot (caused by *Zanthomonas campestris pv. vesicatoria*), anthracnose (caused by *Colletotrichum capsici* and C. *gloesporioides*), and bacterial wilt (caused by B*urholderia solanacearum*), all of which are found on Taiwan as well as in other regions of the tropics. The most important insects are thrips (S*cirtothrips doralis, Thrips palmi*) and mites (*Polyphagotarsonemus latus*), but aphids (M*yzus persicae, Aphis gossypii*) can be serious pests as well. The major abiotic stresses affecting peppers are heat, flood, and drought stress. The major quality traits are fruit length, width, shape, colour and pungency. Male sterile lines (both genetic and cytoplasmic-genetic) are under development to facilitate hybrid seed production.

The sweet potato program at AVRDC ceased in 1993 and was replaced by the allium and eggfruit projects. The sweet potato project is now conducted by the International Centre for Potato research (CIP) based in Lima, Peru. The Queensland Horticulture Institute has released a sweet potato line (Kestrel – a white skinned, white fleshed variety) that was one of many lines received from the project when it was based at the AVRDC.

3.2 Taipei Agricultural Products Marketing Corporation – Taiwan – Linda Chen and Thomas Chen

Ms Linda Chen from the Queensland Trade and Investment Office in Taipei organised our visit to the Taipei fruit and vegetables market where we were the guests of Mr Thomas Chen, Manager of Business Department of the market.

Plate 3.10 Our guide Mr Thomas Chen (Business Manager at the Taipei Market) looks on as David inspects potato quality in the pre-packing section.

Mr Chen accompanied us to inspect the market floor and described the auction system that operates there. The system rewards quality products. As the quality of particular commodity decreased so did the bid. Produce at the Marketing Corporation is supplied by local growers either direct or from farmer cooperatives and from importers via trade companies. Local growers and importers also direct market small qualities to retailers and supermarkets. On the market floor dealers purchase by auction and then sell to retailers and supermarkets. Some dealers also had retail outlets in a separate part of the market floor. Individual farmers are paid on the day of the sale and cooperatives within three days.

Plate 3.11 Taipei Wholesale Markets in full swing with a significant number of women involved in the markets.

Produce is delivered to the markets by 5.30pm. It is unloaded in the auction area where an inventory of the produce is recorded. At this stage laboratory samples are taken and residue analyses are completed before selling commences at 3:30am. A pre-marketing meeting is held to establish the opening auction prices based on the previous day's sales and the weather outlook. Two thousand dealers (1 400 vegetables dealers) operate in the markets and all records are computerised. The daily transaction in metric tons is 1 900 of which vegetables constitutes 1 200t. Local supply is from 1 800 individual suppliers and 450 who supply via cooperative marketing. The market has control over 17 of the 70 supermarkets that operate in Taiwan. It is expected that supermarkets will gradually dominate the retail of vegetables and fruit in the future.

Plate 3.12 A Dutch auction system operates in the Taipei market at which sales are fully computerised

While there is no strict quality assurance program operating, the market sets high standards via its residue testing program. Growers soon conform if they have been found to violate acceptable residue levels. The average size of farms in Taiwan is from 0.5 to 1.5 hectares. Our general impression of vegetable production and marketing in Taiwan was that there is little opportunity at present for imports. There is a pronounced effort to remain self sufficient in vegetables with an emphasis in research to extend the production period and the shelf life of vegetables.

Table 3.1 illustrates the volume of heavy vegetables traded in the Taiwan wholesale markets in 1997 and price per kilogram while Table 3.2 illustrates Australian exports to Taiwan in 1997.

Table 3.1 Heavy vegetable trade in Taiwan wholesale markets 1997.

Commodity	Volume (tons)	Unit price (NT$/kg)
Onion	3 587 715	9.30
Potato	4 456 887	13.77
Garlic	5 190 991	31.88
Pumpkin	1 143 886	8.55
Sweet potato	5 150 404	8.23

Source: China External Trade Development Council

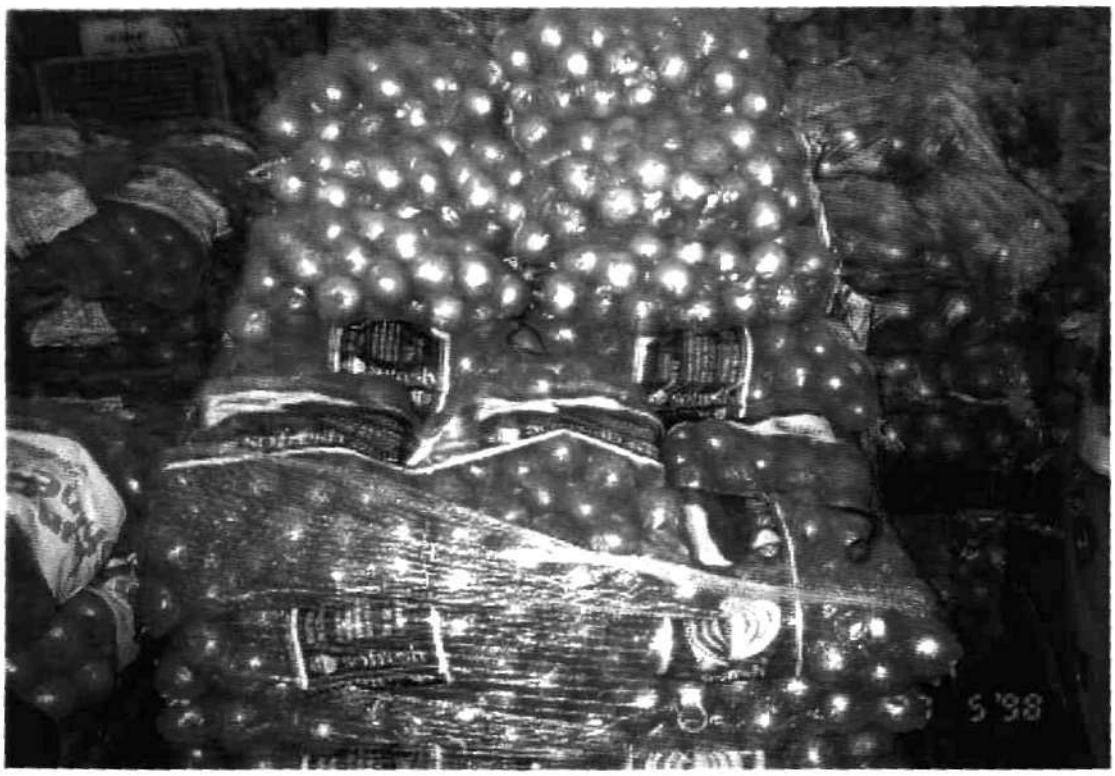


Plate 3.13 New Zealand and Tasmanian onions featured in the Taipei Wholesale Market.

Currently the following vegetables can be imported from Australia: onion, celery, sweet corn, Chinese cabbage, cauliflower, broccoli, spinach, pumpkins, beans, cucumbers, eggplants and red peppers. The regulations for the import of these vegetables are found in appendix 8.4

Table 3.2 Vegetable imports from Australia in 1997.

COMMODITY	VOLUME (TONNES)	VALUE – CIF (US$1,000)
Onion		
Total	26 148	6 005.4
Australia	618	151.0
Celery		
Total	5 782	2,683.6
Australia	547	235.7
Sweet Corn		
Total	41	33.3
Australia	0	0
Cabbage		
Total	2 241	691.9
Australia	983	378.8
Cauliflowers And Broccoli		
Total	4 160	3 580.9
Australia	697	675.9
Pumpkin		
Total	13	9.8
Australia	0	0
Beans		
Total	4	1.7
Australia	0	0
Eggplant		
Total	0.4	0.8
Australia	0	0
Capsicum		
Total	1 954	2 458.2
Australia	1	2.3
Tomato		
Total	14.5	9.8
Australia	0	0

Source: China External Trade Development Council

3.3 Queensland Trade and Investment Office and Importing Companies – Lily Liang, Linda Lu, Bob Hong and Tim Chow

Following our visit to the Taipei agricultural products marketing corporation, Ms Linda Chen organised a brief visit to a local we market in Taipei. These markets are still popular in Taipei, but as mentioned previously it is likely that they will diminish in their importance with the expansion of supermarkets which are likely to be more attractive to the younger generation of customers. Linda returned us to the Queensland Trade and Investment Office in Taipei where we met briefly with Mr Ronald Huang (Commissioner) before talking with Ms Lily Liang (Deputy Commissioner) to get an overall view of vegetable marketing in Taiwan.

Our discussions with Lily and subsequently with three importers left us with the impression that Taiwan at the moment does not provide any great opportunities for Queensland heavy vegetable exports and limited opportunities for vegetables including broccoli, celery and Chinese cabbage and perhaps lettuce, although this was debated. The three importers we met were, Mr Bob Hong (Green Village Incorporated), Ms Linda Lu (Three Shine Trading Co. Ltd) and Mr Tim Chow (Ericomi Trading Co Ltd).

Lily felt that in the longer term, increased opportunities would develop for Australian produce and that there is a growing interest in organic product. This is an area where there needs to be a clear definition of what is meant by this term in Asian markets as it appeared to have different expectation in each of the markets we visited. When discussing with the importers in Taiwan, some were very sceptical about the importance of this area in the markets and did not see that it would be a major development in vegetable marketing. This comment was commonly expressed in the market forum but at the trade department level it was often mentioned as a marketing opportunity. Australia is generally viewed in Taiwan as being able to produce quality product but not continuity of supply. One of the problems that became apparent when talking to Lily and the importers (these were visited on an individual basis) was that our varieties were not as advanced as those from the United States and that we suffered because of this.

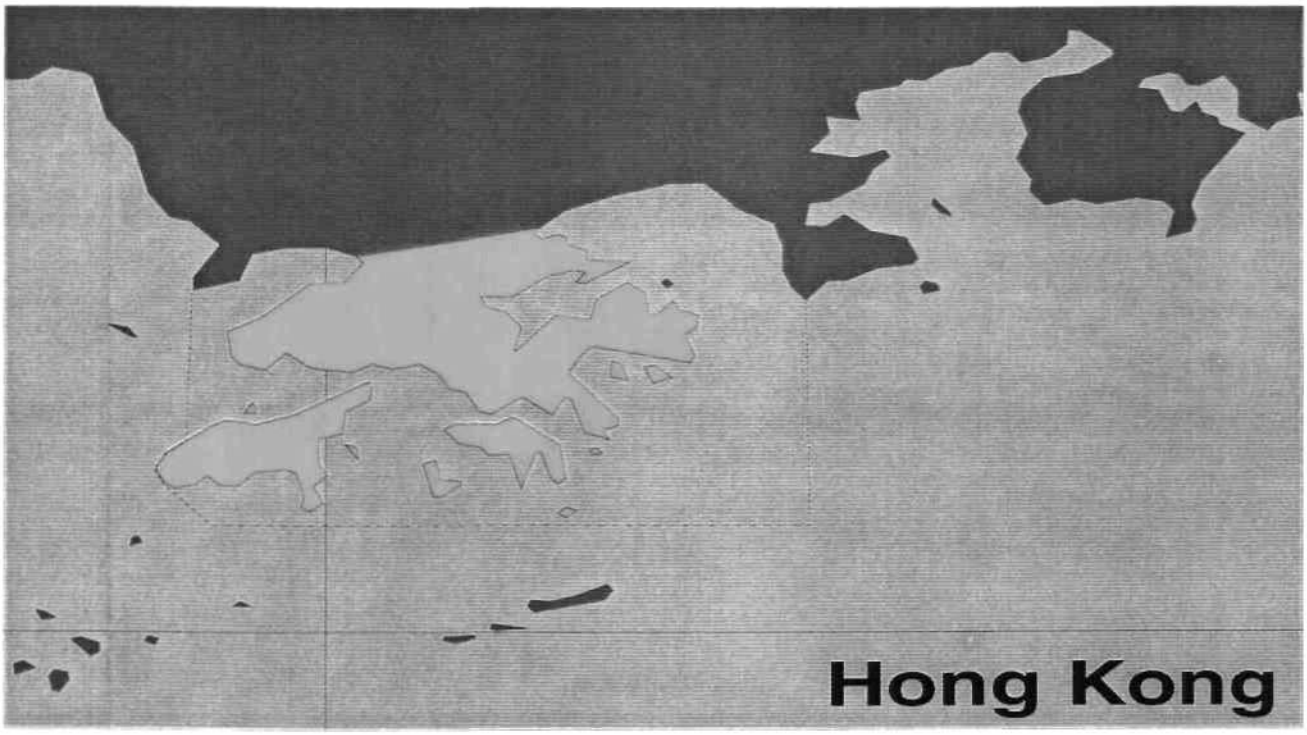
Our problem is that unless there is an agreement to purchase a particular variety other than one that is popular on the domestic market, it is unlikely our producers would take the risk of growing a product that is specific to the export market without a contract. Other points that came forward during our discussions with the importers is that products from our competitors have been well promoted in Taiwan to the extent there is an immediate association between the product and the country of origin. The seriousness of our country as an exporter was also questioned because of our inefficiencies and cost involved in our shipping system.

There appeared to be some consensus in that Queensland should not be looking to export leafy Asian vegetables but more on products that we are good at producing and that are established crops, including broccoli and celery. The importers felt that Taiwan will have the capacity to produce cheaper Asian vegetables than can be produced in Australia. The potential for sweet onion imports was an interesting case as there appeared to be no opportunity for import of this type of onion. Imports were restricted to the more pungent types yet the main type grown in Taiwan is the less pungent varieties. One of the importers (Ms Linda Lu) was interested in trying some trial shipments of our late season varieties from Queensland which have medium pungency and shelf life.

Plate 3.14 Ms Linda Lu (Importer) inspects quality of a new delivery of celery from California.

In conclusion, Taiwan importers generally see Australia as a spot market to supply short term market opportunities arising from climatic disasters affecting local production. Though there is a concerted effort in Taiwan to remain self sufficient, it is more likely in the longer term that the growth of tertiary industry will result in greater reliance on food imports and opportunities for Queensland. To take advantage of this, the profile of what we have to offer needs to be lifted via improved alliances between producers and importers – moving from spot sales to more formalised agreements worked out in advance and including product promotion.

4.0 HONG KONG



4.1 Introduction – Angela To and Ben Lee

On arrival in Hong Kong we met briefly with Ms Angela To, Director of Marketing and Mr Lareth Yiu, Trade and Development Officer with the Queensland Government Office in Hong Kong. We also met with Mr Ben Lee, Trade Commissioner with AusTrade. They provided background information about the vegetable trade in Hong Kong. Though Hong Kong returned to the sovereignty of China in 1997, it should be recognised as a different market to China.

Hong Kong has a population of 6.3 million and about 11.7 million tourists per year (1996 figures). In addition to being important in its own right as a customer for agricultural products, it is the gateway to China and has important links with supermarkets in Taiwan and Singapore. With the ever-increasing urbanisation of Hong Kong, local farmers move into the neighbouring province of Guangdong and supply to the Hong Kong market. However, most food and beverage items have to be imported.

The food retailing and catering market has altered significantly in recent years as a result of the changing lifestyle of the local population. This has seen the advent of supermarkets and fast food shops which were either non-existent or very uncommon in the seventies. Traditionally, the Chinese housewives shop daily for their food requirements at wet markets operated by hawkers with street stalls. Predominant in these stalls are the fresh vegetable hawkers as vegetables still remain the main component of the Chinese diet. Over the last twenty years the wet market trade has significantly been affected by the growth of supermarkets. The two major chains, Wellcome and Park 'N Shop together share over 70% of the supermarket and convenience store business with Wellcome having 40% of this share.

The growth in number of supermarket outlets is attributed to a number of factors. These include increasing income levels, changing consumer tastes, demand for greater convenience hygiene and health requirements, development of huge housing estates in the new towns, changing dietary habits of the younger generation, major property developments and an increasing female worker participation rate.

Due to the high density of housing and the high property costs the majority of supermarkets in Hong Kong are operated on a very small floor space with most having only 2-3 check-out counters. The area available for fresh vegetables is often limited as a result of the small floor space and there is often little attention paid to the presentation of fresh produce in supermarkets by staff. As the Chinese still have a preference for fresh vegetables, the wet markets are still the preferred outlet for vegetables for many customers because of the service and quality provided at these outlets.

Like Singapore, Hong Kong has an extensive hotel and restaurant industry as well as aircraft and ship catering industries. There are over 8 000 restaurants in Hong Kong, 23 million air passengers going in and out each year and 41 000 ocean going vessels and 177 000 river going vessels using the port facilities in 1996. These all source food supplies to differing extents from the Hong Kong markets.

Table 4.1 illustrates the quantity and value of selected Australian vegetable exported to Hong Kong in 1997 compared to the USA and China. Australian Bureau of Statistics indicate that the value of Queensland exports of fruit and vegetables to Hong Kong in 1996 – 1997 was A$22.2 Million.

Table 4.1 Vegetable imports (tons) of selected vegetables from Australia, USA and China into Hong Kong in 1997. Value of Australian import in HK$.

Commodity	Australian	USA	China	Value (HK$)
Onions and shallots	2 253	-	1 491	5 424
Garlic and leeks	42	24	19 012	688
Brassicas	3 149	9848	190	27 744
Lettuce and chicory	1 175	21 230	1 497	6 076
Carrots, turnips beetroots and other edible roots	6 849	224	4 211	37 563
Cucumbers and gherkins	109	6.5	8 619	1 927
Legumious vegetables	5.7	23	7 669	755
Mushrooms (fresh)	12.6	4.8	1 954	7 354
Mushrooms (dried)	1.2	17	7 723	64
Prepared vegetables	2 734	20 722	52 161	46 120
Sweet corn	25.7	7 730	256	1 076
Vegetable (frozen)	74	19 841	2 816	1 145
Arrowroot and sweet potatoes	1.8	110	9 332	26
Dried vegetables excluding onions	62	-	9 439	456
Potatoes (frozen)	-	14 085	-	-

SOURCE: Selected from table provided by AusTrade office Hong Kong.

4.2 Hong Kong Vegetable Marketing Organisation – Lareth Yiu and Ivan Yan

Mr Lareth Yiu accompanied us on our visit to the Hong Kong wholesale vegetable market where we were met by Mr Ivan Yan who was the Customer Accounts Manager at the market. Ivan outlined that much of the produce at the market came from either Hong Kong or was grown by ex Hong Kong farmers in the neighbouring province of Guangdong. The market we visited was one of three operating in Hong Kong and handled 60% of the vegetable supply which was equivalent to 700 tons per day. This market which has been operating for 50 years is supervised by the Agricultural Fisheries Department. The marketing organisation is a non-profit one and its major objective is to provide high quality, safe vegetables to Hong Kong. Residue testing is carried out on site with random samples taken from 30% of the produce entering the market. Samples are also taken from another 30% of the produce where risk of residues is high, such as leafy vegetables and testing is routinely done on producers who have previously violated the acceptable levels. Organo-phosphates are the chemicals primarily being targeted.

The market has introduced a program called credit farmers. Market staff visit the farmers to encourage reduced chemical usage and application in line with the chemical label. If the grower conforms to reduced and safe chemical usage, they are registered as a credit farmer. This is being introduced initially within the Hong Kong Territory with the intention to introduce it to Mainland China. This scheme of registering farmers who undertake to minimise chemical usage will enable greater recognition of the Premium Vegetable Section (PVS) that was established in 1991 to supply a better quality product to the end user. This need has become more pronounced with the advent of the supermarket trade in fresh produce and the direct sales from the market to these outlets.

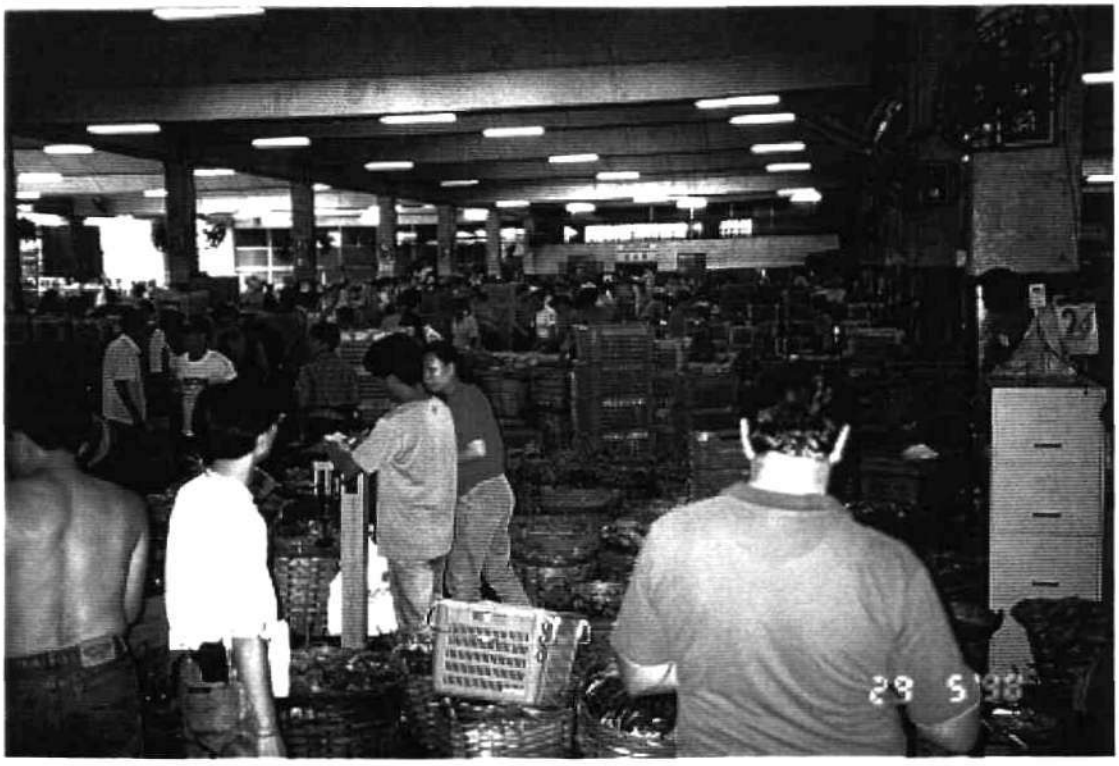


Plate 4.1 Action in the wholesale market in Hong Kong where most produce was sourced from Mainland China.

We were given a brief tour of the market. Our impression of the quality of the produce here and the organisation within the market was that neither were up to the standard we had seen at our previous destinations. Mr Yan also raised the point of how it was often difficult to get supply from Australian markets when there were opportunities to supply. Kerry and David felt that the most likely reason was that the price was insufficient to provide a profit margin.

Plate 4.2 Chinese vegetables delivered in baskets to Hong Kong wholesale market.

Plate 4.3 Chinese pumpkins were plentiful in the Hong Kong wholesale market.

4.3 Wing Kee Produce Ltd – Mark Lee

At Wing Kee we were met by Mark Lee. His importing company specialises in supplying five star hotels, upper class restaurants, clubs, airline catering, passenger vessels and some supermarkets in Hong Kong. The company imports small amounts of 200-250 products throughout the year. Very little of the product comes from China, most comes by airfreight from all over the world. Melons are sourced from Katherine and tomatoes from Bowen and Bundaberg. Australia also supplies zucchinis, a range of exotic lettuce varieties, baby squash, turnip and carrots. Because the company is dealing with the upper-end of the market, it only purchases prime quality product and Australia has been able to provide the quality required.

Mark Lee commented that it is difficult to get growers to commit to long term supply. Many grower delegations visit Hong Kong and want to export to Hong Kong or into Asia. They take up a lot of time getting the specifications and market requirements and nothing much results. Mark says that has been very frustrating for his company. The company is willing to continue trying to develop long term agreements as it is in business for the long term but have found in the past despite his willingness to help growers understand the market and what his company requires there has been little commitment.

4.4 Wellcome Produce Packing Centre – Sharon Young

At the Wellcome produce packing centre we were able to look over the centre with Ms Sharon Young, a trainee category buyer. The centre receives product from the local wholesale markets for Asian vegetables and internationally, particularly Australia, Holland and the United States for a wide range of fruit and vegetables. Before the fruit and vegetables are packed for the supermarkets they go through a thorough inspection of at least 10-15% of all products brought through the centre Tomatoes and melons including rockmelons, honey dew and watermelons are large volume items imported from Australia. As we walked through the centre we observed sweet corn and Chinese cabbage from the Lockyer Valley. The company deals mainly through agencies in foreign markets with Antico in the Flemington Market and Carter and Spencer International being major suppliers of Australian produce. The centre supplies product to the Wellcome supermarket chain in Hong Kong. Our observations were that the quality of the produce was high. An exception was the potato line that was being repacked from cartons into 1 and 2kg bags.

It was interesting to hear Sharon's philosophy on the future of supermarkets in Hong Kong. She feels the convenience and the one stop shopping that is being promoted will appeal to the younger generations and eventually the traditional wet markets will disappear with the older generations. To assist in the transition from the wet markets to the supermarkets as outlets for vegetables, the supermarkets are introducing some of the ways of the wet markets. An example is not to prepack Asian vegetables but to set them up into bulk displays.

4.5 Hong Kong Gateway to China – Simon Lee

The Territory of Hong Kong is adjacent to the mainland province of Guangdong, the place most Hong Kongers originate from and still have strong family ties. This province has a population of 68 million, is the fifth largest province in terms of population, has an average growth rate exceeding 20% since 1990 and handles one third of China's total trade. Over 80% of Guangdong's foreign investment is of Hong Kong origin. Over 5 million people are working in Guangdong province for Hong Kong companies in 155 000 joint ventures or wholly owned subsidiaries. Fifty percent of Chinese tourists travelling overseas are from Guangdong province. Currently $40M of Australian exports to China are via this province.

There are underlying forces driving demand in the mainland provinces especially Guangdong. Increasing expendable income associated with an increasing standard of living, exposure to television and greater contact with people in the west through travel and business is leading to greater consumerism. There is a desire for a greater variety of produce and better quality produce. While there have been attempts to locally produce western type vegetables including various varieties of melons lettuce and broccoli, the quality is poor and the infrastructure to transport, handle and share the products is poorly developed. The variety and quality of the local product though, large in quantity cannot compete with imported product which is now in demand for the reasons given above. Therefore producers in Australia should be recognising a large market beyond Hong Kong that Hong Kong imports can service. The question remains how long this market will remain – how long before Chinese horticulture can compete with imported products. Given China's population growth, one of our contacts was willing to suggest at least a couple of decades. In the short term at least our exporters should be investigating the opportunities for vegetable exports to Mainland China especially Guangdong province via Hong Kong.

5.0 DETAILED ITINERARY

Sunday, 17 May 1998

10:00 Travelled from Gatton to Brisbane.
14:00 Travelled from Brisbane to Singapore.
20:00 Arrived Singapore.

Monday, 18 May 1998

06:00 Visited Pasir Panjang Fruit and Vegetable markets.
09:30 Visited Aus Trade Office and held discussions with Julie Bayliss and Toh Guek Hong to provide background information about Singapore fruit and vegetable trade and export opportunities.
13:30 Meeting with John Lim, General Secretary of Singapore Fruit and Vegetable Importers Association at Pasir Panjang Markets.
15:00 Meeting with Tng Ah Yiam, Department Manager NTUC FairPrice Co-op Ltd to discuss role of supermarkets in retailing fruit and vegetable in Singapore.

Tuesday, 19 May 1998

06:00 Visited Pasir Panjang Fruit and Vegetable Markets to inspect vegetables supplied from the Malayasian highlands and lowlands.
08:30 Meeting with Steven Leong representing Kian Hin Hup Kee Pte Ltd., Potato and Onion wholesalers in Pasir Panjang Markets.
11:00 Meeting with Cham Quan Beng, Business Manager, Benelux, wholesaler dealing with potatoes and onions in Pasir Panjang Markets.
13:00 Meeting with Dennis Ong and Roger Tan of Singapore Air Terminal Services accompanied by Toh Guek Hong of AusTrade to discuss opportunities to supply fruit and vegetables to this catering service.
15:00 Visited supermarkets in suburban Singapore to inspect fruit and vegetable displays.

Wednesday, 20 May 1998

09:50 Departed Singapore for Tokyo.
18:00 Arrived Narita airport Tokyo and travel to Shiba Park Hotel.

Thursday, 21 May 1998

06:30 Met Nigel Traill, Marketing Manager Queensland Trade Officer tour guide and interpreter for us during out Thursday and Friday appointments in Tokyo.
07:00 Met Mr Sujama for guided tour of Ohta Fruit and Vegetable Markets.
08:00 Met Tetsuo Kudo of Tokyo Seika Co Ltd wholesaler in Ohta Markets. Discussed domestic and imported supplies to the Ohta Market.
10:00 Visited Tsukiji Markets. Discussions with Makoto Kanazawa, Assistant General Manager at Tsukiji Markets about opportunities for Queensland vegetables.
14:00 Visited supermarkets in Tokyo to inspect fruit and vegetable displays to assess quality and prices.
16:00 Met Shin-Ichi Taneya of the Japan Frozen Food Association to discuss opportunities for frozen vegetables from Queensland.

Friday, 22 May 1998

08:00 Departed Tokyo to travel to neighbouring prefecture of Saitama to visit vegetable research station, sweet potato farm, and grower cooperative.
10:00 Met at Tsurugashima Station in Saitama by Kazuo Ohtsuka, Associate Director, Agriculture Administration Division Saitama Prefecture.
15:50 Departed Saitama to return to Tokyo.
16:20 Arrived at Ikebukuro Station and met with Yasuo Yabiki, Produce Manager, Seiyu Foods Co, Ltd. Discussed vegetable importing by Seiyu Supermarket chain.

Saturday, 23 May 1998

07:30 Departed Tokyo for Shin-Osaka Station.
10:00 Arrived at Shin-Osaka Station and met by Akira Takada, of Takada Seed Co. Ltd. Spent rest of day travelling to onion breeding farm and holding discussions with onion plant breeders Kenzo and Yoshihiro Fujiwara of the Fujiwara Seed Co.
17:00 Departed Shin-Osaka Station for Kyoto Station.

Sunday, 24 May 1998

10:00 Met with John Bostok Managing Director of JM Bostock Ltd, New Zealand exporter of Kabocha pumpkin and onions.
14:00 Departed Kyoto for Tokyo.
16:30 Arrived back in Tokyo.

Monday, 25 May 1998

09:30 Departed Tokyo for Taipei, Taiwan.
12:30 Arrived Taipei and transferred to flight for Kaohsiung.
14:50 Arrived Kaohsiung and picked up by staff member of Asian Vegetable Research and Development Centre.
16:30 Arrived at AVRDC, Tainan.

Tuesday, 26 May 1998

08:00 Visited wet market in village nearby AVRDC.
09:30 introductory overview of work conducted at AVRDC provided by Dr Sundar.
10:30 Overview of tomato breeding program and field visit provided by Jen-Tzu Chen, plant breeder.
12:00 Overview of onion and garlic improvement program and storage studies provided by Swee-Suak Ko, Plant Breeding Research Assistant.
13:00 Visited Genetic Research Centre and held discussions with Dr Liwayway Engle, Genticist.
14:00 Met with Drs Peter Hanson and Terry Berke to discuss recent development in tomato and capsicum disease resistance breeding.
15:00 Departed AVRDC for Kaohsiung airport.
19:00 Arrived hotel in Taipei.

Wednesday, 27 May 1998

04:00 Met Linda Chen, Marketing Officer Queensland Trade and Development Office and travelled to Taipei Fruit and Vegetable Market. Met Thomas Chen, Manager Taipei Agricultural Products Marketing Corporation for tour of market and subsequent briefing on operation of market.
10:00 Visited wet market in suburban Taipei to view quality and range of vegetable products.
11:00 Met with Lily Liang Deputy Commissioner, Queensland Trade and Investment Office in Taipei for briefing on fruit and vegetable imports to Taiwan.
13:00 Met with Linda Lu, Importer, Three Shine Trading Co Ltd to discuss opportunities for Queensland vegetable importations.
14:00 Met with Tim Chou, Importer, Sun Rise Frozen Food and Manufacturing Co Ltd for further discussions of vegetable import opportunities from Queensland.
16:00 Return to hotel.

Thursday, 28 May 1998

08:15 Departed Taipei for Hong Kong.
10:00 Arrived Hong Kong.
14:00 Met with Angela To, Director of Marketing, Queensland Government Office to discuss background information on vegetable trading in Hong Kong.
15:00 Discussions with Ben Lee, Trade Commissioner Aus Trade again on marketing of fruit and vegetables in Hong Kong.

Friday 29, May 1998

09:30 Visited vegetable wholesale market with Ivan Yan, Customer Accounts Manager. Following visit to market floor, held discussions about opportunities for Queensland vegetable exports.
11:00 Visited Mark Lee, General Manager Wing Kee Produce Ltd that services airlines and high class hotels to provide high quality fruit and vegetables. Discussed opportunities for Queensland vegetables in this trade.
14:00 Visited Wellcome Supermarket Distribution Centre. Discussed with Sharon Young, Category Buyer for Fruit and Vegetables opportunities for Queensland vegetable exports as well as view the quality of imported vegetables from Europe, Asia, USA, Australia and New Zealand.
16:00 Returned to hotel.

Saturday, 30 May 1998

19:45 Departed Hong Kong for Brisbane.

Sunday, 31 May 1998

07:30 Arrived in Sydney.
10:15 Arrived in Brisbane.
12:00 Arrived back at Gatton.

6.0 CONTACTS

6.1 Singapore

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7.0 KEY REFERENCES

7.1 **Description and illustration in colour of vegetables in Taiwan** Han Huang and Lih Hung (Chief Editors) Department of Horticulture National Taiwan University. Council of Agriculture Executive Yuan. Department of Horticulture National Taiwan University (1998).
This is an excellently illustrated book depicting vegetables grown in Taiwan. While the majority of the text is in Chinese the English equivalent and the latin scientific name are included in the 210 pages.

7.2 **The Vegetable Groups and Cultivars of Guangzhou** Guan Peicong (Chief Editor), Lee Bixiang and Chan Junquan (Assistant Editors). Guangdong Science and Technology Press 1992. An excellent pictorial reference on Asian Vegetables (280 pages).
Written mainly in Chinese but with sufficient English to understand the different varieties.

7.3 **Queensland's Horticulture Portfolio**. Queensland Department of Primary Industries publication (1999) Q 199012 (Agdex 200).
This portfolio provides a pictorial representation of Queensland's major horticultural products. (20 pages plus chart illustrates seasonal production).

8.0 APPENDICES

8.1 Report on vegetable markets in South East and Eastern Asia for the QFVG and HRDC and Heavy Produce Committee – D G Nix

Asian people traditionally have a great dependence on wet markets and shop on a daily basis with little or no need for refrigeration. The housewife will touch and handle produce to make a selection for their daily needs. This tradition is changing, but is slowing the rate of dominance by supermarkets presently estimated to be 50/50 and not changing rapidly as in Australia.

Traditional supplies of heavy produce come from Holland, America, Australia, Asia and increasing supplies from Africa. Mainland China is a large supplier with Thailand and Vietnam becoming significant. Indonesia is in most markets at the lower end of quality and packaging. Australian supplies are drawn from the Western Australian Potato Board and some of the more established packing companies on the east coast, with processors drawing from Australian wholesalers with an emphasis on price and crisping quality.

There is a large market for quality, well packed and presented heavy produce. Singapore is the least demanding for packing and quality, with every increasing standards as one progresses north to Tokyo.

Singapore and Hong Kong have a large catering industry with demand for quality, and priced accordingly. These markets are traditionally served by Europe and America, but with the Asian Economic meltdown, these suppliers have become more expensive, and Australia is being looked at as a cheaper, good quality supplier of the future.

Wet markets in all Asian countries visited are well organised and government controlled. Singapore and Hong Kong have no restrictions or tariffs on imported produced and have fast efficient sea and air ports, with services from all over Australia. Any Australian packing shed with a quality assurance program and the capacity to pack in cardboard cartons or small prepacks, should look closely at these markets as prices are above those paid in Australia for comparable product. Loose sell potatoes in hessian sacks are sold in both markets, but have strong competition from China, Vietnam and Indonesia and are subject to the variations of supply and demand. Singapore will generally pay $400 to $500 per ton Australian landed in Singapore in good condition. Hong Kong is similar, but both markets will pay considerably more in the March to July period, as only old season stored potatoes are available from Northern Hemisphere suppliers. Prices in the wet market of Shain Sho Po, Hong Kong, at the end of May were $2.20/kg Aus., this reflected a shortage of potatoes as the Asian season was a bad one.

Supermarkets are very similar to Australian in produce presentation and pricing. They will buy direct if quality and supplies are available. One of the biggest supermarket chains in Asia, Welcome, also owns Franklins in Australia and Woolworths in New Zealand giving them in direct link to Australian producer.

Garlic from Australia didn't rate any interest as Chinese garlic was so cheap and of good quality we could not compete.

Pumpkin is not a volume import commodity in most Asian countries except in Japan where Kaboocha pumpkin was imported from New Zealand and Tasmania, the big margins and strong demand are a thing of the past with the markets being satisfied from these sources. Singapore and Hong Kong markets showed little interest in importing this commodity.

Onions are imported into all markets in Asia, with Singapore and Hong Kong looking for hard onions. Japan and Taiwan favour the sweet onion of Australia's short day variety. Sweet onions were in great demand in Japan as they had a shortfall in their home production and usage is one millions tons per year in Japan. I will leave this commodity to Kerry Qualischefski to report.

Potatoes in Japan are very similar to Australian grown potatoes, but considerable restrictions are imposed on imports both for disease and trade protection barriers on fresh potatoes. However, processed or semi-processed have much greater opportunity as most imports now come from America and the change in the exchange rate between the US dollar and the Yen has made Australia a very attractive alternative.

AusTrade has many Japanese companies looking to import processed and semi-processed potatoes from Australia at the present moment.

Taiwan is in a similar position to Japan with heavy trade barriers to the importation of potatoes; however many importers feel that these barriers are only artificial, and if industries were to lobby our government to approach the Taiwanese Government, these restrictions could be removed. Taiwan and Japan both have a shortage of potatoes due to the very wet growing season, resulting in poor quality and harvest.

Queensland government officials in all Asian countries were of exceptional assistance to us, and anyone contemplating exporting to any of these Asian markets would be well advised to use their services as they are very professional and find Australia has a much broader brief and are not so specific to each commodity, and they also charge for their services, however, in Japan and Taiwan, English is not freely spoken and Australian services are more than worth the cost when dealing with importing companies. They can save on money and embarrassment, as they know the customs and language of the country.

Since the down turn in the Asian economy, Australia is now better placed than ever before to serve Asia with vegetables at a price and quality acceptable to them and their market requirements, whilst giving the Australian produce a return on produce equal to or better than the domestic market, however I do not see this being supplied from the present wholesalers on the Australian market, as they have little or no impact into the quality or packaging of produce. I do see growers, grower packers, or specialists packing sheds are in the right position to service these markets.

If this is to be progressed, then a link between D.P.I. Horticulture, AusTrade, Queensland Government, offices in Asia and industry bodies in Australia must be enacted so information can flow quickly to potential suppliers before the opportunities are taken up by other countries such as Africa and South America, as they are active in the region.

8.2 Queensland onions – Export to Asia -Kerry Qualischefski

The opportunities of exporting sweet onions into Singapore, Hong Kong and Japan are very good. At this point in time the sweet onions into Taiwan would not be seen as a viable option because of their reluctance to use refrigeration to store this type of produce.

After meeting with agents in the produce markets and managers of large supermarket chains in Singapore and Hong Kong, the response was very encouraging towards doing trial consignments of sweet onions from Queensland. Supermarkets are always looking out for new product lines. Sweet onions from Queensland are of a mild flavour and therefore are ideal for the way the Asian people prepare their food such as stir-fry vegetables. On the down side, because of expensive refrigeration costs and storage facilities, exports of sweet onions into this country would most likely have to be air freighted to keep up the standard of fresh product on a regular basis.

As a result of high costs of renting land and buildings, packaging of sweet onions would be preferred in a prepacked range. They also prefer a large size of onion [70-80mm and 80-90mm]. This would suit Queensland producers of sweet onions because our domestic trade prefers a smaller size onion [60-70 mm]. An increasing population and also high tourism trade, would ensure that exports to Singapore would increase as long as the standards were maintained.

In Japan, it is already recognised that sweet onions are of a superior taste compared to the more pungent variety of onions available. Substantial amounts of sweet onions are already grown in Japan. A niche market exists for Queensland sweet onions between October and January. Sizes which are preferred are the same as for Singapore and Hong Kong.

Overall market requirements for sweet onions in Japan are in the thousands of tonnes during these months. As a result, sea freight in used to supply the high tonnage. The high cost of freight services demands at least 95% pack out rate, to ensure promote Queensland sweet onions if they are assured of quality and quantity of product.

Taiwan has very little interest in sweet onions because the produce does not store well without refrigeration in their climate. However, the opportunity to export our more pungent and better storing varieties such as Gladiator, does exist. Buyers are willing to accept trial quantities of these onions during coming season.

The overall view of exporting onions into Asia is very positive. To be a viable market for Queensland growers, they need to be able to supply large quantities of quality produce. The only way this can be achieved is if growers and packers can work together in a network system. Onion growers need to realise that the more produce that is available for export, the better chance there is for stability on the domestic market. Exporting is not a get rich scheme, as seen by some growers. Australian produce into Asia is regarded as clean and safe food, of which we should be taking advantage of.

8.3 Demand forecast for the supply and delivery of fresh fruit, vegetables and potatoes for the period October 1998 to September 1999 for Singapore Airline Terminal Services

S/N	Current Specification Fresh Fruits	KG	Total Usage per Month	Total Usage per Year	Estimated Annual Requirement Current Range	Estimated Annual Requirement New Range
1	**APPLE GREEN** Fruit must be firm. No bruises and blemishes. 113 and 150 counts per case. Labels to be removed. AUST/CHILE/NZ/USA/AFRICA	Kg	909	10 909	6 000 – 8 000	7 636 – 15 273
2	**APPLE RED** Delicious, crunchy and fancy grade. Free from bruises and blemishes. About 80% red. Diameter: 7 and 7.5 cm. Labels to be removed. AUST/CHILE/NZ/USA/AFRICA	Kg	1 902	22 829	40 000 – 80 000	15 980 – 31 960
3	**BANANA** Firm, free from bruises and blemishes. Green not acceptable. When ripe, must be of bright yellow. Quality similar to best grade 'Del Monte'. PHILIPPINES	Kg	7 119	85 428	100 000 – 200 000	59 800 – 119 600
4	**CANTALOUPE/ROCK MELON** Sweet, orange yellow flesh. Free from bruises. Size: between 1.5 and 2.5kg each. AUST/EUROPEAN COUNTRIES	Kg	20 431	245 171	170 000 – 340 000	171 000 – 343 239
5	**GRAPEFRUIT** Fruit must be fresh and firm with bright appearance and free from bruises and blemishes. 10pcs to weigh between 2.8 and 3.5 kg. ISRAEL/AFRICA/USA/SPAIN/ AUST/EGYPT	Kg	1 698	20 380	15 000 – 30 000	14 266 – 28 533
6	**GRAPES** Dark, red or green, sweet and firm. Stalk must be fresh and green. Crown of fruit must not be brown or whitish and no loose fruit.. Free from bruises and blemishes. To be delivered in refrigerated truck. AUST/USA/AFRICA/CHILE	Kg	13 407	160 878	140 000 – 280 000	112 615 – 225 229

7	**GRAPES (SEEDLESS)** Dark or red or green, sweet and firm. Stalk must be fresh and green. Crown of fruit must not be brown or whitish and no loose fruit. Free from bruises and blemishes. To be delivered in refrigerated truck. AUST/USA/AFRICA/CHILE/NZ	Kg	168	2 2021	15 000 – 30 000	1 414-2 – 2 829
8	**KIWIFRUIT** Fruit must be fresh and free from bruises and frostbite. Over-ripe and unripe not acceptable. Size: 10-14 numbers per kg. To be delivered in refrigerated truck. AUST/USA/AFRICA/CHILE	Kg	2 955	35 455	60 000 – 120 000	24 818 – 49 637
9	**LEMON** Yellow or greenish yellow. Firm and juicy. Free from bruises and blemishes. Core should not be rotten or brown. Diameter: 5.5 and 6.0 cm. Labels to be removed. ISRAEL/USA/AUST/SPAIN/ AFRICA/EGYPT	Kg	11 123	133 472	10 000 – 20 000	93 430 – 186 860
10	**MANGO** Fruit must be sweet, fresh firm with bright appearance. Free from bruises and blemishes. Over-ripe and unripe not acceptable. Sizes must be consistent. Less fibrous. 3 to 5 number per kg. Please state month available and country. PHILIPPINES/AUST/THAI/ PAKISTAN/INDONESIA	Kg	2 610	31 318	30 000 – 60 000	21 923 – 43 845
11	**MELON HONEY DEW** Ripe, sweet, free from bruises. Size: between 1.5 and 3.0 kg each. MALAYSIA	Kg	23 247	296 128	190 000 – 380 000	1975 273 – 390 545
12	**MELON (WATER)** Seedless. Juicy. Flesh must be red. Each to weigh between 3.5 to 5kg each. MALAYSIA	Kg	24 677	296 128	100 000 – 200 000	207 290 – 414 579

13	**ORANGE LARGE (NAVEL/VALENCIA)** Sweet, free from bruises and blemishes. Round shape, fully ripened and juicy. Diameter: Between 8 and 9 cm. Labels to be removed. AUST/ISRAEL/USA/MED/NZ	Kg	5 454	65 453	50 000 – 100 000	45 817 – 91 634
14	**ORANGE (VALENCIA)** Sweet, free from bruises and blemishes. Round shape, fully ripened and juicy. Diameter: Between 6.5 and 7.0 cm. Labels to be removed. AUST/ISRAEL/USA/MED/NZ	Kg	19 262	231 147	160 000 – 320 000	161 803 – 323 606
15	**PAPAYA** Free from bruises and blemishes and internal rot. Over-ripe and unripe papaya not acceptable. 1.8 and 3.5 kg per fruit. Long shape. MALAYSIA	Kg	39 160	469 920	300 000 – 600 000	2 509 – 5 017
16	**PAPAYA HAWAIIAN** Free from bruises and blemishes . Over-ripe and unripe papaya not acceptable. Length: 13 to 16cm. Diameter: Between 8 and 10 cm. MALAYSIA	Kg	299	3 584	5 000 – 10 000	2 509 – 5 017
17	**PEAR** Free from bruises and blemishes. 90 – 100 counts per case. Labels to be removed. AUST/USA/AFRICA	Kg	1 351	16 210	15 000 – 30 000	11 347 – 22 693
18	**PINEAPPLE (MAURITIUS)** Ripe. Stalk and crown removed. Over-ripe and unripe not acceptable. 1.4 to 2.0 kg per fruit. Length: Not more than 21.5cm. Diameter: Between 13.5 and 14.0cm. MALAYSIA	Kg	66 988	803 857	500 000-1000 000	562 700-1 25 400

19	**STRAWBERRY** Fruit must be fresh, firm and free from bruises. No extreme sizes. Over-ripe and unripe not acceptable. To be delivered in refrigerated truck. AFRICA/AUST/USA/NZ/SRI LANKA/SEA/EC/ MEDITERRANEAN	Kg	3 786	45 433	30 000 – 60 000	31 803 – 63 606
20	**ASPARAGUS YOUNG** Fresh and must be green. Root trimmed to 10 pcs to weigh between 40 and 60gm. Maximum 14cm in length from tip of asparagus. To be packed in ½ kg bundle with thick rubber band. THAILAND	Kg	2 280	27 357	25 000 – 50 000	19 150 – 38 299
21	**BRINJAL** Free from blemishes and spots. Only long ones are acceptable. 10 pcs to weigh between 0.8 and 1.2 kg. Round ones acceptable only upon request. SOUTH EAST ASIA	Kg	1 807	21 683	20 000 – 40 000	15 178 – 30 356
22	**CABBAGE LONG** Leaves without blemishes. Each cabbage to weigh between 1.0 and 3.0kg. SOUTH EAST ASIA/TAIWAN	Kg	1 565	18 781	16 000 – 32 000	13 147 – 26 294
23	**CABBAGE WHITE** Leaves without blemishes. Each cabbage to weigh 1kg and above. SOUTH EAST ASIA	Kg	14 335	172 020	20 000 – 40 000	120 414 – 240 828
24	**CABBAGE WHITE SMALL** Fresh and green. Length should be between 15 and 20cm. SOUTH EAST ASIA	Kg	3 071	36 847	25 000 – 40 000	25 793 – 240 828
25	**CAPSICUM GREEN** Must be firm. Approx. 6pcs per kg. Extreme sizes not acceptable. SOUTH EAST ASIA	Kg	4 996	59 957	40 000 – 80 000	41 970 – 83 940
26	**CAPSICUM RED** Must be firm. Approx. 6pcs per kg. Extreme sizes not acceptable. SEA/USA/AUST	Kg	7 188	86 259	40 000 – 80 000	60 381 – 120 763

27	**CAPSICUM YELLOW** Must be firm. Approx 6pcs per kg. Extreme Sizes not acceptable SOUTH EAST ASIA	Kg	268	3 220	6 000 – 12 000	2 254 – 4 508
28	**CARROT** Straight, tender and without stalk. Should not be over-matured. 10pcs to weigh between 2.5 and 3.5kg. AUSTRALIA	Kg	13 351	160 216	100 000 – 200 000	112 151 – 224 302
29	**CARROT – TURNED** Fresh. Non-fibrous. Pre-cut. Each piece to weigh between 20-25gm. To be packed in plastic bag x 100pcs. AUSTRALIA	ea	48 325	579 900	400 000 –800 000	405 930 –811 860
30	**CARROT WITH STEM – BABY** (Trim) The carrot must not be more than 13cm in length. The stem is between 2 and 4cm in length.	Kg	235	2 825	2 000 – 4 000	1 978 – 3 956
31	**CAULIFLOWER** Free from blemishes and spots. Free from worms. No shaving. Stem must be fresh. AUSTRALIA/USA	Kg	4 913	58 951	40 000 – 80 000	405 930 – 811 860
32	**CELERY** Free from bruises. Light green stem. Heart of celery to be fresh and not brown. Weight per piece must not be less than 1kg. AUSTRALIA/USA	Kg	3 691	44 295	30 000 – 60 000	31 006 – 62 012
33	**CHICORY RED** Must be fresh and bright red. No blemishes. No excessive peeling. USA/ITALY/HOLLAND/AUST/NZ	Kg	1 360	16 323	10 000 – 20 000	11 426 – 22 852
34	**CHILLI GREEN** Fresh and free from blemishes. 50pcs to weigh 500gm. Chilli padi is not acceptable. To be delivered in dry condition. SOUTH EAST ASIA	Kg	252	3 029	2 000 –4 000	2 120 –4 241

35	**CHILLI RED** Fresh and free from blemishes. 50pcs to weigh 500gm. Chilli padi is not acceptable. To be delivered in dry condition. SOUTH EAST ASIA	Kg	406	4 874	3 000 –6 000	3 412 –6 824
36	**CHYE SIM** Fresh and young. Short green stem. Dark green leaves. SOUTH EAST ASIA.	Kg	4 299	51 587	30 000 – 60 000	36 111 – 72 221
37	**CUCUMBER** Fresh, green and firm. Must be straight and not over-matured. Diameter: Approx. 4cm SOUTH EAST ASIA	Kg	13 265	159 185	100 000-200 000	111 429 – 222 858
38	**GARLIC (DRY PEELED)** Fresh and cream in colour, free from blemishes. Should be delivered in sealed perforated plastic bag of 1kg each. Tip of the stem to be removed. CHINA	Kg	1 305	15 666	8 000 – 16 000	10 966 – 21 932
39	**KAILAN SMALL** Fresh and green. The stem (approx. 10cm) should not be pruned. SOUTH EAST ASIA	Kg	1 378	16 539	15 000 – 30 000	11 577 – 23 154
40	**LADIES FINGER** Young and non-fibrous. No blemishes. Length not longer than 10cm. SOUTH EAST ASIA	Kg	650	7 802	7 000 – 14 000	5 461 – 10 923
41	**LEEK** Clean stalk and trimmed roots. Diameter: Between 2 and 3 cm. Total length of stem and leaves, must be at least 25 cm and length of stem should be at least 85% of total length SOUTH EAST ASIA	Kg	290	3 476	2 000 – 4 000	2 433 – 4 867

42	**LETTUCE** Clean stalk and trimmed roots. Western Australia Iceberg lettuce. Must be leafy, fresh, clean, without blemish, no hard core and brownish leaves. Closely trimmed and free from worm infestation. No excessive peeling. Each head to be individually wrapped. To be delivered in refrigerated truck. USA	Kg	17 311	207 735	150 000 – 300 000	145 414 – 290 828
43	**LETTUCE FRISEE** Must be fresh, clean and green and slightly yellowish without blemishes. AUST/USA/FRANCE/ITALY	Kg	1 513	18 160	10 000 – 20 000	12 712 – 25 425
44	**OAKLEAF LETTUCE** Must be fresh and green. HOLLAND/AUST	Kg	432	5 186	4 000 – 8 000	3 630 – 7 260
45	**MUSHROOM SHITAKE** Must be fresh. Head Diameter: Between 3.5 - 4.5cm Stem to be removed. SINGAPORE/CHINA	Kg	1 835	22 014	15 000 – 30 000	15 410 – 30 820
46	**MUSTARD GREEN CHINESE** Fresh and green. No excessive leaves SOUTH EAST ASIA	Kg	993	11 911	6 000 – 12 000	8 338 – 16 675
47	**ONION SPRING** Medium size leaf. Trimmed roots. Free from mud. 10pcs to weigh between 150 and 250gm. SOUTH EAST ASIA	Kg	1 569	18 829	14 000 – 28 000	13 180 – 26 361
48	**ONION, LARGE** Trimmed roots. 10pcs to weigh between 1.5 and 2.0kg. AUST/HOLLAND/USA	Kg	4 592	55 104	20 000 – 40 000	38 573 – 77 146
49	**PARSLEY** Green and fresh. SOUTH EAST ASIA	Kg	279	3 354	3 500 – 7 000	2 348 – 4 695

50	**POTATO CHATEAU LARGE** Fresh. Pre-cut. Yellow flesh potato. Each piece to weigh between 50 and 55gm.To be packed in plastic bag x 100pcs.The quality of the potato must be able to hold well upon boiling. There must also not be browning after cooking. INDONESIA	Pcs	69 068	828 810	70 000-14000 000	580 167-1 160 334
51	**POTATO CHATEAU SMALL** Fresh. Pre-cut. Yellow flesh potato. Each piece to weigh between 25 and 30 gm. To be packed in plastic bag x 100 pcs. The quality of the potato must be able to hold well upon boiling. There must also not be browning after cooking. INDONESIA.	Ea	65 683	788 200	450 000 – 900 000	551 740-1 103 480
52	**POTATO NEW** Approx. 40 – 60gm each. SOUTH EAST ASIA	Kg	2 298	27 575	10 000 – 20 000	19 303 – 38 605
53	**POTATO (SKIN ON)** Yellow flesh. No shoots on potato. 25kg per bag. 10pcs to weigh between 1.6 and 3.3kg. No flake after cooking. HOLLAND/NZ/INDONESIA	Kg	27 467	329 600	200 000 – 400 000	230 720 – 461 440
54	**RADISH RED** Round, root and stem removed. Not dry and core must be firm. No blemishes. 10 pcs to weigh between 200 and 300 gm. AUSTRALIA	Kg	177	2 127	2 000 - 4,000	1 489 – 2 977
55	**SHALLOTS (DRY PEELED)** No burnt mark. Should be delivered in sealed perforated plastic bag of 1kg each.	Kg	2 585	31 017	25 000 – 50 000	21 712 – 43 424
56	**TOMATO CHERRY** Firm, red and free from blemishes. 60 - 80 numbers per kg SOUTH EAST ASIA	Kg	2 218	26 614	25 000 – 50 000	18 630 – 37 260

57	**TOMATO LARGE** Red or pinkish yellow, firm, round, free from blemishes and should not be hollow inside. 10 pcs to weigh between 700 and 1,000 gm. SOUTH EAST ASIA	Kg	13 265	159 177	100 000 – 200 000	111 424 – 222 848
58	**TOMATO LARGE (RED)** Red and firm, round, free from blemishes and should not be hollow inside. 10pcs to weigh between 700 and 1,000 gm. AUSTRALIA	Kg	13 458	161 496	100 000 – 200 000	113 047 – 226 094
59	**TOMATO MEDIUM** Red or pinkish yellow, firm, round, free from blemishes and should not be hollow inside. 10pcs to weigh between 400 and 600gm. SOUTH EAST ASIA	Kg	7 554	90 653	60 000 – 120 000	63 457 – 126 915
60	**ZUCCHINI** Green, firm, and free from blemishes. Diameter: 3 and 4 cm. SOUTH EAST ASIA	Kg	2 244	26 929	25 000 – 50 000	18 851 – 37 701

8.4 Regulations for Importation - Taiwan

Vegetables

The council of agriculture feels there is no trade barrier for importation of vegetables except from potatoes, adzuki bean, dried day lily, garlic and its processed products where approvals from the council of agriculture is required. Asparagus are not allowed for importing from Queensland & NSW due to burrowing nematode (*Radopholus similis* (cobb) Thorne). But, quarantine regulations/requirements for other vegetables from Australia are as follows:

1. Sweet corn

A Phytosanitary certificate issued by the government of exporting countries, in the case of Australia, the Australian Quarantine Inspection Service, to be attached.

Imported corns are not to go through Hong Kong or Singapore for transhipment as both these regions are prohibited due to Gumming disease (*Xanthomonas campestris pv.vasculorum* (cobb) Dye). Unless the containers are fully sealed and stamped with the seal of Australia Quarantine Inspection Service (AQIS).

Imported corns are not to contain any soil.

2. Onions and Shallots with underground part & adventitious roots

A Phytosanitary certificate issued by the government of exporting countries, in the case of Australia, the Australia Quarantine Inspection Service, stating that the underground portion has been thoroughly inspected and found free from Stem nematode (*Ditylenchus dipsaci*), or has been treated with an appropriate treatment prior to shipment.

Transhipment of containers are not to occur in Hong Kong, Singapore, Japan, Indonesia or any other countries/region known to be prohibited due to stem nematode or Potato rot *nematode (Ditylenchus destructor*), unless the container are fully sealed and stamped with the seal of Australia Quarantine Inspection Service.

Imported onion or shallots are not to contain any soil.

3. Chinese Cabbage, Cauliflower, Broccoli, Spinach

A Phytosanitary certificate issued by the government of exporting countries, in the case of Australia, the Australian Quarantine Inspection service. (Pls. See the attachment.)

As *Radopholus similis* (cobb) Thorne is known to exist in Australia, all underground portion or portion containing soil of the above vegetables are prohibited for importation.

4. Pumpkin, Bean and Cucumber

All pre-cooling plant and cold storage warehouses should be approved by the Director of the Bureau of Commodity Inspection & Quarantine before any phase of cold treatment is begun. In the application, it should state the name of the exporter, address and place and facilities of these pre-cooling plant and cold storage warehouses.

A Phytosanitary certificate issued by the government of exporting counties, in the case of Australia. Any Queensland exporters interested in exporting fruits & vegetables to Taiwan or require further information on that should contact AQIS for details. The Australian Quarantine Inspection Service, stating the produce has been thoroughly in specked and found free from Mediterranean fruit fly (*Ceratitis capitata* Wied), as well as treated by using one of the attached schedule as designated.

5. Tomatoes, Eggplant, Red Pepper

Phytosanitary certificate, issued by the government of exporting countries, stating that the plant or part of plant has been thoroughly inspected and found free from Potato tuber moth or has been treated with an appropriate treatment prior to shipment.

The consignment is not permitted to be transported through *P. operculella* infestations area.

Industry News

Asian tourism trade creates opportunities for our heavy produce

A recent study tour to Singapore, Japan, Taiwan and Hong Kong identified niche vegetable markets in the hotel and restaurant service trades which could be filled by Queensland produce.

A visit to the Asian Vegetable Research and Development Centre in Taiwan to check out onion varietal evaluation and storage work was part of the study tour undertaken by David Nix, Kerry Qualischefski and Ken Jackson.

Searching out export opportunities on behalf of the *QFVG Heavy Produce* Committee were **David Nix**, Atherton potato grower, **Kerry Qualischefski**, Qualipac Onions, Gatton and **Dr Ken Jackson**, Researcher and Program Leader, Queensland Horticulture Institute, Gatton.

With large numbers of tourists visiting Singapore, Hong Kong and Tokyo, the demand for quality vegetables to supply the catering industry is significant.

These markets are traditionally supplied by Europe and America but with the Asian economic woes, these suppliers have become more expensive and Australia is being looked upon as a cheaper, good quality supplier of the future.

DAVID NIX

"I believe a large market exists for quality, well packed and presented heavy produce.

"Singapore and Hong Kong have no restrictions or tariffs on imported produce and have fast, efficient sea and air ports, with services from all over Australia.

"Any Australian packing shed with a quality assurance program and the capacity to pack in cardboard cartons or small pre-packs should look closely at these markets, as prices are above those paid in Australia for a comparable product.

"Loose potatoes in hessian sacks are sold in both markets but have strong competition from China, Vietnam and Indonesia and are subject to the variations of supply and demand.

"Singapore will generally pay $400-$500 Australian per ton landed in good condition.

"Hong Kong is similar but both markets will pay considerably more in the March to July period when only old-season, stored potatoes are available from northern hemisphere suppliers.

"Prices in the wet market of Shain Sho Po, Hong Kong at the end of May were $2.20/kg Aus. This reflected a shortage of potatoes as the Asian season had been a bad one.

"Potatoes in Japan are very similar to Australian-grown potatoes but considerable restrictions are imposed on fresh potato imports both for disease and trade protection barriers.

"However, processed or semi-processed have much greater opportunity. Most imports now come from America and the exchange rate between the US dollar and the yen has made Australia a very attractive alternative.

"Austrade currently has many Japanese companies looking to import processed and semi-processed potatoes from Australia.

"Australian supplies now are drawn from the Western Australian Potato Board and some of the more established packing companies on the east coast. Processors are also sourcing product with crisping quality and price parameters from Australian wholesalers.

"Taiwan is in a similar position to Japan with heavy trade barriers to the importation of potatoes. However, many importers feel that these barriers are only artificial, and if industries were to lobby our government to approach the Taiwanese government, it is felt these restrictions could be removed.

"Taiwan and Japan both have a shortage of potatoes due to a very wet growing season resulting in poor quality and harvest.

"Garlic from Australia didn't create any interest as Chinese garlic was so cheap and of such

good quality we could not compete.

"Pumpkin is not a volume import commodity in most Asian countries, except Japan which imported Kubocha pumpkin from New Zealand and Tasmania.

"The big margins and strong demand are a thing of the past and the Japanese are satisfied with these sources.

"Singapore and Hong Kong markets showed little interest in importing this commodity.

"Onions are imported into all markets in Asia, with Singapore and Hong Kong looking for hard onions.

"Japan and Taiwan favour the sweet onion of Australia's short day variety. Sweet onions were in great demand in Japan as they were experiencing a shortfall in their home production and usage is one million tons per year."

KERRY QUALISCHEFSKI

"The opportunities of exporting sweet onions into Singapore, Hong Kong and Japan are very good.

"At this point in time the sweet onions into Taiwan would not appear to be a viable option because of the country's reluctance to use refrigeration to store this type of produce.

"After meeting with agents in the produce markets and managers of large supermarket chains in Singapore and Hong Kong, the response was very encouraging towards doing trial consignments of sweet onions from Queensland.

"Supermarkets are always looking out for new product lines. Our sweet onions are of a mild flavour and therefore ideal for the way Asians prepare their foods, such as stir frying their vegetables.

"On the downside, refrigeration and storage facilities cost a considerable amount, thus sweet onion exports to this country would most likely have to be air freighted to keep up the standard of fresh product on a regular basis.

"Also as a result of the high costs involved with renting land and buildings, a pre-packed range of sweet onions is desirable. The market demonstrates a preference for a large sized onion – 70-80mm and 80-90mm.

"This would suit Queensland producers of sweet onions, with our domestic trade opting for the smaller size onion of 60-70mm.

"Singapore's huge population, coupled with a large tourism trade give confidence exports would increase as long as strict standards were maintained.

"In Japan it is already recognised that sweet onions are of a superior taste compared to the more pungent onion varieties available.

"Substantial amounts of sweet onions are already grown in Japan but I believe a niche market exists for Queensland sweet onions between October and January.

"Overall market requirements for sweet onions in Japan are in the thousands of tonnes during these months.

"Sea freight is used to supply the high tonnage. To counter the high cost of freight services, we need at least a 95% pack out rate to provide consistent quality and quantity of our Queensland onions.

"Preferred sizes are the same as those mentioned for Singapore and Hong Kong.

"Taiwan has very little interest in sweet onions because the product does not store well without refrigeration in their climate.

"However, the opportunity to export our more pungent and better storing varieties such as Gladiator does exist.

"Buyers are willing to accept trial quantities of these onions during the coming season.

"I believe the overall view of exporting onions into Asia is very positive.

"To be seriously considered, however, we need to be able to supply large quantities of quality produce.

"The only way we can do this is to unite growers and packers in a network system.

"Australian produce in Asia is regarded as clean and safe food, but it's volume that counts.

"It is very apparent if we supply and then, all of a sudden, drop out, someone else will take our spot and it will be very difficult to get back in."

KEN JACKSON

"My overall feeling is that there are export opportunities but we have to do the running. Asian nations are not going to come to us – the competition is far too intense.

"I think the restaurant and tourist trade in Singapore and Hong Kong is worth considering, as I feel we could supply those niches with the class and quality of produce they will pay a bit higher price for.

"Of the heavy vegetables, I thought sweet onions had the most opportunity for export.

"We went to Takada Seed in Japan and looked at the sweet onion industry around Osaka where they breed varieties.

Below - Kerry Qualischefski inspects local Japanese sweet onions at Ota Market, Tokyo.

"Their onion is similar to the globe-type we produce here. The Japanese onions are very sweet – you really can eat them without any burn at all.

"Certainly sweet onions to Japan has a capacity to grow. Singapore, too, is willing to try some in the supermarkets.

"Taiwan is trying to be self sufficient but down the track there may be some opportunities.

"One of the places we visited there was the Asian Vegetable Research Centre where the emphasis for that whole Asian region is to remain as viable as they can.

"They are developing storage methods to extend their supply periods but the general consensus is that even Taiwan eventually won't be able to supply all its produce needs – but at the moment they are making a good fist of it.

"Going to the research centre was great for me as it is a major international vegetable research cenrtre.

"They no longer work on the sweet potato research they used to do for developing countries. That research has now gone back to the International Potato Centre in Peru.

"The sweet potatoes in Asia are very sweet. They make confectionary from them – chips, lollies etc.

"Although we do have a white commercial sweet potato variety that came from the Centre, most of their material wouldn't sell on our market because of uneven shape and uneven flesh colour.

"The Asian Vegetable Centre is also doing a lot of work on heat-tolerant tomatoes.

"They are looking into lengthening storage times for onions, too but nothing that was new to us in Australia.

"In Japan we went out to a prefecture where they grew sweet potatoes.

David Nix (with camera) and Kerry Qualischefski (kneeling) look at the sweet onion breeding program at Osaka's Fujiwarra Seed Company.

"It was interesting to see their methods and hopefully we'll introduce one of their varieties to see how it grows in our climate.

"Now that we've established that contact we might be able to bring some sweet potato germplasm in from Japan.

"Taro was everywhere we went although I'm not sure there's a big future for taro here, even with the islander interest.

"We also looked into identifying opportunities for Kubocha (Delica) pumpkins.

"In Osaka we spoke to a New Zealander who was sending 20,000 tonnes of Kubocha pumpkin into Japan.

"The Japanese like about 5 fruit per 10kg box and are very particular about the dry matter content.

"It has to be very dry, about 18% dry matter and the flesh has to be a bright orange colour, not pale yellow.

"After discussions it was apparent that profit could only be made out of volumes and because we have to do lengthy disinfestation work the margins are not likely to be there in the end.

"The Japanese require testing for mediteranean fruit fly which we don't have in Queensland so we would have to send our material over to Western Australia for testing.

"Because it's a low priority for WA, we'd have to send our own people over to do the testing. Then the Japanese have to come out to see it for themselves – so it's a very long, expensive haul.

"I have no doubt we could meet the quality criteria but how much work would we have to do to get there?

"The other alternative is to send Kubocha pumpkin in as a frozen or pre-prepared, peeled product. A small enterprise is currently sending some of this product from Queensland.

"Of the other vegetables I thought broccoli, sweet corn, celery and mushrooms were crops where export growth is likely to occur in the immediate future.

"Broccoli, in particular, has big potential as we can supply excellent winter broccoli."

Presentation is paramount

The quality of produce and the way it is presented to consumers in Japan is head and shoulders above anything seen in Australia, commented the three Queenslanders.

Their overall impression of fruit and vegetable displays in Asia was that quality was good and the range was more diverse than in Australia.

"Asian people traditionally

(Continued on P.20)

Lift your game, growers told

Onion growers have no option but to lift their game if they want their industry to survive for the next generation of family.

According to Kerry Qualischefski, there's no way round the harsh reality.

The Qualischefski family of Qualipac, Gatton packs a quarter of the onions produced in this State.

Onions are sourced through the family farms at Gatton, share farms at Murgon, Cambooya, Pilton and Inglewood, and grown to contract by local farmers.

The operation also packs for numerous growers, handling continuous work from growers who produce between two hundred and two thousand bins per season.

"As an industry it's the lack of quality that's holding us back," Kerry said.

"Short term thinking and under-selling is rife in the Lockyer Valley. I hold great fears that the Queensland onion industry is going the way of black soil potatoes from the Lockyer and Fassifern – no-one wants them anymore because the growers didn't do the job, and yet black soil potatoes are some of the best you can eat.

"Onion growers simply have to lift their game and move on from "what Dad did". Almost every year there's a big uproar in the Lockyer because the supermarkets choose interstate or imported onions for their stores instead of the local product.

"The fact is the local product is often dirty, not cut properly, cut too fresh or starting to bud. If you were a buyer would you choose this rubbish or go elsewhere for your supply?

"The only way you'll stop imports is to lift your quality, lift your game."

Kerry is a firm believer grade two onions should be disposed of or, at the most, go to a processor. They should never be sold to a fruit shop or at the markets as a cheap line of onions.

"They might get 2, 3 or $4 a bag for them but all this does in effect is devalue the price of onions when they register on the market report.

"It's one more nail in the coffin for our onion industry."

The bigger picture for the industry, according to Kerry, is to export if for no other reason than to get a certain percentage of crop out of the country, relieving over-supply and lifting domestic prices.

"Exporting is no get-rich-quick scheme and unless some growers can make 12 to $15 a bag they're not interested. They'd rather play the market," said Kerry.

"Even if the bottom line of exporting is a dollar or two dollars a bag, the grower's better off because he's getting more for his domestic product.

"If the domestic market is good, you still have to export because next year the domestic market might be down but you've got your foot in the door overseas.

"One thing that is apparent here and apparent in Asia is that volume is what is wanted. No-one wants to deal with small growers and unless they align themselves with a group they run the very real risk of being squeezed out.

"As an industry it's the lack of quality that's holding us back," maintains Kerry Qualischefski, Qualipac onions, Gatton.

"My advice to growers who want to get serious is to go down to the Markets at least once a fortnight in the season and see the quality. Go and look at the southern onions. See how they're graded and presented.

"Start thinking quality because good quality produce will sell a thousand times over, and all it takes is a little bit more effort."

have a great dependence on wet markets and shop on a daily basis with little or no need for refrigeration," David Nix said.

"This tradition is changing as supermarkets increase their dominance but the change is slow and certainly not as rapid as in Australia."

According to Mr Nix, supermarkets in Asia are very similar in produce presentation and pricing. Welcome, one of the biggest chains in Asia, also owns Franklins in Australia and Woolworths in New Zealand, giving them an indirect link to the Australian producer.

"The presentation catches your eye as soon as you walk into the store," said Kerry Qualischefski.

"The onions are polished! They don't just get tipped in a bin, they are placed carefully just like apples. If there's a bit of loose shell on them it's taken off – not like here where it's the norm to have all the shells falling off.

"Everything's checked all the time. They have someone in the vegetable section constantly tidying up the produce so it always looks tempting.

"Every bit of produce we saw was not perfect but very close to it. Rockmelons, for instance, wrapped in stryo, with a leaf attached to the stalk and packed in individual easter egg boxes for gift buying at $30 or $40 each.

"The way the produce is displayed certainly does maximise sales."

According to Ken Jackson the differences in growing methods produces interesting results.

"In Australia we use large tracts of land with minimalist labour and in Asia it's the exact opposite – lots of labour and not much land. So when they are growing fruit they lift them up and turn them to make sure they're even coloured with no soil mark on them.

"For example, the rockmelons Kerry mentioned are usually grown in glasshouses in Japan. They turn each one every day so they get an even colouring, then leave the little stems on them. We'd never see rockmelons presented like that in our markets."

A Japanese produce importer at Ota Markets explains the preferred size of a Kubocha pumpkin to Nigel Traill, Interpreter and Marketing Manager, Queensland Government Office, Tokyo.

A final word of advice

Anyone contemplating exporting to Asian markets, said David Nix, is well advised to use the services of the Queensland Trade Commission.

"They were of exceptional assistance to us and are very professional in their relationships with Asian importers.

"As English is not freely spoken in Japan and Taiwan, the government trade officials are well worth their cost, as they will save you money and embarrassment with the customs and language of the country you are dealing with."

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Service industries in Asia offer opportunities for Queensland vegetable growers

A recent study tour highlighted opportunities for Queensland growers to supply a range of fresh vegetables to the significant service trade of hotels and restaurants in Asian markets, particularly Japan.

The tour, taken by two vegetable growers and a Queensland Horticulture Institute researcher from Gatton, investigated markets and service industries in Singapore, Japan, Taiwan and Hong Kong.

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Perception of safe, high-quality produce

The tour reinforced that Queensland and Australia offer distinct advantages for the Asian service industries. Our production season contrasts with many of our competitors and there is a perception that Australian produce is safe. There is a need to further promote such initiatives as Australia's Integrated Pest Management and Quality Assurance programs to reinforce this perception. The need for continuity of reliable supply was often mentioned, which signals a requirement for coordinated state and national production of export commodities. There is also an important need to produce the variety or type of vegetable known to the target market. Our growers often falsely perceive that excess from our domestic market can be traded on the export market. If we are to be serious players in the Asian service markets, we need to understand their requirements, be committed for the long term and communicate regularly.

Niche marketing essential

The study tour dispelled the myth that there is a huge opportunity for vegetable exports in the local rather than service markets. Markets, particularly in Hong Kong, Taiwan and Singapore, are very price-sensitive. While Hong Kong and Singapore are dependant on imports, it will often be difficult for Queensland or any Australian state to compete and stay viable because of intense competition from other countries that are closer (Malaysia, China and Indonesia) or with more efficient transport systems (the US and New Zealand).

Developing new exports with Australian-grown Asian vegetables

Opportunities exist for growing burdock, daikon and globe artichokes in Western Australia for the off-season Asian markets, especially Hong Kong, Taiwan and Japan. There is also export potential for Australian-grown globe artichokes for the US and European markets from October to December.

This study aims to:

- evaluate and identify burdock and daikon varieties/cultivars to be grown commercially in Western Australia
- evaluate the requirements and feasibility of growing globe artichokes for the US and European off-season
- improve/develop postharvest handling, packaging and storage methods for export markets
- conduct a trial shipment
- develop grower best management practices to improve product efficiency to access new overseas markets

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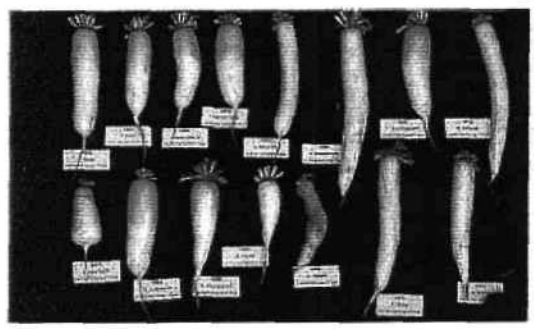

Promising progress

A project officer visited globe artichoke production areas in Europe and the US recently to study production techniques and potential markets for globe artichoke, and assess the availability of suitable cultivars for Western Australian conditions. The study tour confirmed the market window of October to December.

To date, nine burdock and 20 daikon varieties have been collected. Five planting trials on daikon have been started at Medina Research Station, near Perth, and at the Horticultural Research Centre in Manjimup. The postharvest quality and characteristics of daikon from the first two plantings have been assessed with Radish F1 No.16 from Sakata Seed Co. and Shinjin Sobutori from Kaneko Seed Co., showing excellent yield, quality and postharvest storage properties.