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## Singapore Garden Festival 2008

The Singapore Garden Festival (SGF) 2008, organized by the National Parks Board, will be held at the Suntec Convention and Exhibition Centre from 25<sup>th</sup> July to 1<sup>st</sup> August 2008. As a partner, AVA will contribute to the festival by staging a vegetable garden display, a plant clinic and a service stop for phytosanitary certification.

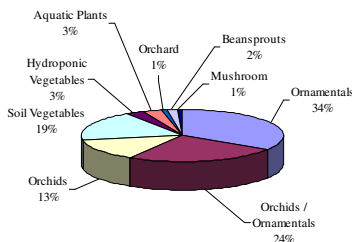
For more information, please refer to the website <http://www.singaporegardenfestival.com>



## Horticulture Production 2007

Singapore has 145 farms, licensed for horticulture activities and occupying an area of 425 ha. Of these, 106 ha are for vegetable and foodcrop production, and 319 ha are for the production of orchids and ornamentals. The percentage land area used for each type of horticultural production is shown in Fig. 1.

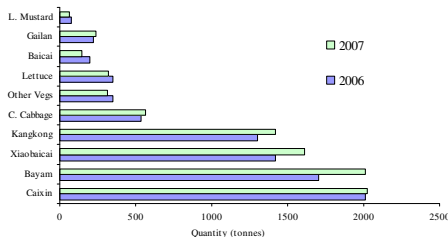
FIG 1 : LAND AREA FOR HORTICULTURAL PRODUCTION (%) IN 2007



A total of 19,027 tonnes of vegetables and foodcrops, with a value of \$ 20.05 million, were produced in 2007. These were mainly 9,909 tonnes of bean sprouts (52%) and 8,707 tonnes of vegetables (46%).

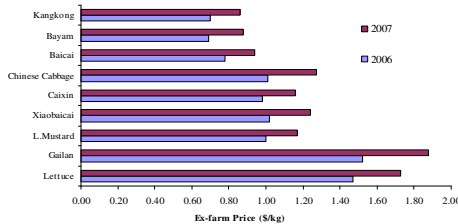
Similar to 2006's production, caixin, bayam, xiaobaicai, and kangkong had accounted for 81 % of the total quantity of leafy vegetables produced in the year 2007 (Fig.2).

FIG 2: TYPES AND QUANTITIES OF LEAFY VEGETABLES PRODUCED



The ex-farm prices of leafy vegetables were higher in 2007 than in 2006, particularly for caixin and xiaobaicai, which had increased by about 19 % and 24 %, respectively. This was probably due to reduced supply from neighbouring countries during the rainy season (Fig.3).

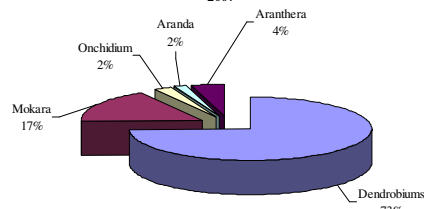
FIG 3: EX-FARM PRICES OF LEAFY VEGETABLES



Local farms also produced some 10.41 million stalks of orchid cut-flowers, with an ex-farm value of \$ 4.25 million. About 1.95 million ornamental plants, worth \$ 14.78 million, and 26.52 million aquatic plants, valued at \$ 3.54 million, were also produced.

*Dendrobium* orchids were the main cut-flowers produced, contributing to 73% of total orchid production (Fig.4).

FIG 4: TYPES OF ORCHID CUT-FLOWERS PRODUCED IN 2007



## Floriculture Trade 2007

A healthy economy saw the floriculture trade exports increasing marginally from \$ 54.18 million in 2006 to \$ 54.49 million in 2007. Local demand also spurred flora imports, which rose from \$ 79.29 million in 2006 to \$ 85.54 million in 2007.

The total export of fresh orchids, orchid plants and cuttings was \$ 24.68 million, 5 % lower than the \$ 26 million of 2006. Top export destinations had included Japan (\$ 11.37), Australia (\$ 7.08 million), Greece (\$ 1.57 million), US (\$ 1.40 million) and Canada (\$ 0.60 million).

Export of other floriculture products, such as foliage, branches, other flowers / live plants and plant parts, had increased from \$ 14.27 million (2006) to \$ 15.14 million. Exports of aquarium plants had also increased from \$ 13.91 million (2006) to \$ 14.66 million.

## Advisory to Travelers

With effect from 1st Dec 2007, each traveler from West Malaysia can bring in up to three plants, with their roots bared and without potting medium, 250 g seeds, or both, without an AVA import permit.

This is in step with current measures to safeguard the health of the plants in Singapore and to minimize the introduction of exotic pests and plant diseases, as potting medium (eg. soil, sphagnum moss, peat moss, various potting mixes) can harbour exotic plant disease organisms if not properly treated.

## ASEAN GAP

The Good Agricultural Practice (GAP) Program is a farm-based quality assurance program, which establishes and verifies that the on-farm good agricultural practices (best practices) are in compliance with set standards, so as to ensure the quality and safety of the farm's final product.

Indonesia, Malaysia, Philippines, Singapore and Thailand each have their own GAP programs already in place, while Brunei and Vietnam are planning their respective implementations in the near future.

ASEAN has also developed a GAP standard, with modules for food safety, produce quality, environmental management and worker health. These GAP programs were funded by AUSAID since 2004, under the AADCP (ASEAN-Australia Development Cooperation Program) project and the Quality Assurance Systems for ASEAN Fruit and Vegetables (QASAFV). These voluntary standards for the production, harvesting and post-harvest handling of fresh

fruit and vegetables were endorsed during the ASEAN Agricultural Ministerial Meeting held in Singapore in November 2006.

An implementation plan for ASEAN GAP is currently being developed to enhance the harmonization of these food safety and quality standards, and to facilitate intra- and extra-ASEAN agri-trade. An awareness seminar was also organized in Brunei during the 10<sup>th</sup> – 11<sup>th</sup> July 2008 Farmers' Week and Agricultural Fair.

## Pesticide Resistance Management Talks

The Horticulture Branch of AVA had conducted talks on effective pesticide use and resistance management for vegetable farmers at the Sungei Tengah and Lim Chu Kang Agrotechnology Parks on 14<sup>th</sup> April and 29<sup>th</sup> May respectively. These talks facilitated the sharing of experiences and networking with our farmers.

## Vacuum Cooling of Leafy Vegetables

The recommended post-harvest practice is to cool vegetables once they are harvested. This maintains vegetable freshness and quality by reducing the rate of respiration. Speed is of the utmost importance, and the vacuum cooling method, which works by the evaporation of water from the vegetables under the very low pressures of a vacuum chamber, is the fastest cooling method. The harvested leafy vegetables are rapidly cooled to 5 °C within 30 min. In comparison, normal cooling processes takes 4-8 hrs. The vacuum cooled vegetables' shelf life is also extended up to 15 days, and the vegetables are less susceptible to bacterial and fungal rots.

AVA had conducted trials and demonstrations for our local farmers on leafy vegetables like caixin, xiao-baicai, bayam (amaranthus), kang-kong and kalia. These were met with positive feedback and interest.

## Specifications for Compost & Approved Soil Mixes (ASM)

AVA, together with NParks, have developed specifications for compost and soil mixes. These standards have been reviewed with industry partners, and have since been incorporated into NParks tender specifications. There have also been a greater awareness in the industry for such quality products since NParks and AVA launched the programme in August 2007 to test compost and ASM samples used in NParks projects. These products have to comply with the specifications listed below.

COMPOST / ORGANIC MATTER SPECIFICATIONS	
PARAMETERS	REQUIRED RANGE / VALUE
pH	5.5 – 8.0
Electrical conductivity	Maximum 6 dS / m
C:N Ratio	Less than 24:1 but not below 12:1
Organic Matter	Minimum 25% by dry weight.
Moisture Content	Less than 25% (wet weight basis).
Particle size	85% air dried sample should pass through 10 mm sieve.
Foreign Matter / Physical Contaminants / Stones	< 1% for > 2mm fraction. Must be < 5% of 5 mm size.
Heavy Metal Concentration	To comply with national standards under public health and pollution control, whenever such standards are applicable.
Organic contaminants	To comply with national standards under public health and pollution control, whenever such standards are applicable.
Pathogens	If Chicken manure is used: Free from <i>Salmonella enteritidis</i> and <i>Salmonella typhimurium</i> . For all other material: Fecal coliforms < 1000 MPN per g total solids
Pest insects / invertebrates	No live fly pupae and larvae, snails.
Odour	Free from strong odour (Optional)
APPROVED SOIL MIX (ASM) SPECIFICATIONS	
PARAMETERS	REQUIRED RANGE/VALUE
pH	5.5 - 7.5
Electrical conductivity	Less than 2 dS/m
Organic Matter	Minimum 10% by dry weight
Cation Exchange Capacity	Greater than 10 meq/ 100 g soil by dry weight
Bulk Density	Greater than 0.8 Mg/ cubic m
Soil Texture Composition (Will not be tested)	Sand (0.05 - 2.00mm) Max 75% Min 20% Silt (0.002 - 0.05mm) Max 60% Min 5% Clay (Less than 0.002mm) Max 30% Min 5%
Heavy Metal Concentration	To comply with national standards under public health and pollution control, whenever such standards are applicable.
Organic contaminants	To comply with national standards under public health and pollution control, whenever such standards are applicable.
Pathogens	Free from <i>Salmonella enteritidis</i> and <i>Salmonella typhimurium</i>



**Plant Bulletin** is published biannually by the **Horticulture Working Group, Agri-Food and Veterinary Authority**,

Sembawang Research Station, 17km Sembawang Road, Singapore 769194.

The aim of this bulletin is to disseminate horticulture and plant health information to plant growers, exporters and importers in Singapore. If you have any suggestions, comments or enquiries, please contact us at :

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