

AVA VISION



MARCH 2011

AVA - the national authority for food safety, and animal and plant health

FARMING VEGETABLES SKYWARDS

New Vertical Farming System (VFS) produces five times more leafy vegetables and boosts resilience in local food supply.

Vegetable farming, like our urban landscape, can go skywards. Going against traditional farming methods that are constrained by land availability, a newly developed Vertical Farming System (VFS) prototype can now cultivate certain crops in tiers, upwards.

This means that output can be increased up to five-fold compared with conventional soil-based farming, given the same land area. For example, on a five-hectare plot, VFS produces at least 2,500 tonnes of leafy vegetables, while a conventional soil-based farm can only produce 500 tonnes.

Minister for National Development, Mr Mah Bow Tan (far right) and Agri-Food & Veterinary Authority's (AVA) CEO, Ms Tan Poh Hong (4th from right), with team of AVA officers involved in the VFS prototype development.



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Minister Mah harvests a bunch of Chinese cabbage grown using the VFS at the AVA Sembawang Research Station.

Minister Mah said, if we are able to diversify our food sources, "then even if there is a disruption from one source, we would still be able to get supply from other sources. So all these things we are trying to do here is very important".

He added: "If we can do more and more of this, make better use of our land, more productive use of our land, then I think we should be able to increase our local food production even more."

The VFS grows vegetables in A-shaped towers each of six metres tall. Each tower consists of 22 to 26 tiers of growing troughs, which are rotated around the aluminium tower frame to ensure that the plants obtain uniform sunlight. The rotation system does not need an electrical generator. It is powered by a unique water-pulley system that uses only one litre of water, which is collected in an overhead reservoir when it rains. This method also boasts low carbon footprint as only one kilowatt of power is used per hour to pump water up to a holding tank on top. The VFS is housed in a protected environment of PVC roofing and netted walls to enable cultivation under natural sunlight. All these efficiencies ensure that production costs are kept low.

A Fruitful Public-Private Collaboration

The VFS prototype is the result of a nine-month long R&D collaboration between Agri-Food & Veterinary Authority (AVA) and a private company, DJ Engineering.

Ms Tan Poh Hong, CEO of AVA said: "The project would not have been possible without the combination of different expertise from AVA and DJ Engineering. On AVA's part, we conducted multiple studies and R&D on maximising crop yields while DJ Engineering built and modified several prototypes."

AVA directed the R&D which focused on developing an intensive vegetable farming solution in the tropics. Research work was conducted in AVA's Sembawang Research Station through studies on growing media, vegetable varieties, seed-plug transplantation, irrigation, fertilisation, and crop protection. DJ Engineering made concurrent engineering adjustments in the design and operation of the VFS.

This initiative is in line with AVA's mission to strengthen resilience in safe food supply and ensure food security for the nation. As leafy vegetables are highly perishable, it is critical that they are grown in close proximity to our markets. This will ensure their wholesomeness and freshness. At the same time, increasing local production will also help cope with sudden disruptions in supply.

Gai Lans grown using the VFS powered by a unique water-pulley system that uses only one litre of water.



The VFS prototype has already harvested vegetables such as *xiao bai cai* and *bayam* from the 1,000sqm vertical farm at AVA Sembawang Research Station. DJ Engineering has set up another company – Sky Greens – to produce the vegetables for commercial use and sell the tower structures used in the VFS to other farmers and individuals.

Minister for National Development, Mr Mah Bow Tan, visited the AVA Sembawang Research Station on 28 January 2011 to view the VFS prototype. He expressed optimism that the system will bring Singapore closer to reaching its local production target of 10% of local leafy vegetables. Mr Mah also highlighted the need for innovative solutions and public-private-sectors collaborations to maximise Singapore's limited resources and raise local farming productivity. He urged more private sector players to come forward with innovative projects to enhance Singapore's food supply.

Left to Right: Lettuce and Xiao Bai Cai, another two varieties suitable for VFS.



REVISED TERMS AND CONDITIONS OF ASSURANCE CERTIFICATION SCHEME (ACS)

To qualify for the new ACS, traders of plants, cut flowers and plant products must now have at least two staff members who are AVA-certified inspectors, amongst other requirements.

Terms and conditions of the Assurance Certification Scheme (ACS) have been revised and the updated scheme will be implemented this year. AVA conducted this review to ensure that the ACS continues to stay relevant and complies with increasingly stringent phytosanitary requirements imposed by importing countries.

One of the new terms and conditions is that companies must send at least two staff members for training to become AVA-certified inspectors. The two training courses are: Inspection Techniques, and Pest Recognition and Identification. To pass, candidates will need to clear the proficiency test with a mark of at least 80%. The new condition will empower companies with the crucial skills for pre-export self-inspection. It will also reduce the number of non-compliant cases that AVA has been detecting during its audits.

In addition, AVA reviewed the terms and conditions for non-compliances by companies under the ACS. The three levels of non-compliances – Minor, Major, and Critical – still apply but each category's definitions have been updated. AVA has also developed the relevant process flows and actions to take in response to the non-conformities identified in each of these categories.

Current ACS members were informed of the revised requirements during a dialogue session on 8 October 2010. They were in support of the review, and agreed that the new terms and conditions can help them stay up to date with the necessary import requirements internationally.

The ACS was first introduced in 2001 as a special arrangement for all traders of plants, cut flowers and plant products, on top of existing inspection and certification services. ACS-accredited companies get to enjoy the privilege of not having to subject every consignment to AVA inspection before a phytosanitary

certificate is issued for export. It is designed to allow companies to play a bigger role in the inspection function by implementing and documenting a quality system prescribed by AVA. This system offers a more ordered and coordinated approach to achieving a quality product, especially by preventing pest infestation.



A STRONG PARTNER FROM DOWN UNDER

Recent mission trips between Western Australia and Singapore have reaffirmed strong trading ties. Through these sharing sessions, both countries gained more insights into each other's market trends, requirements and opportunities.

One of AVA's key strategies in ensuring food diversification for Singapore is to source food from countries that are able to supply safe and quality produce for consumption.

One such country is Australia. Its food industry has long enjoyed good reputation, both at home and worldwide. It is well known that Australia's food is produced through a safety system applied throughout all stages of the supply chain. This includes stringent quality control at the production or processing site, which has impacts on the freshness and shelf life of the final product.

For these reasons, Western Australia, in particular, has been Singapore's long-term partner in supplying fruits and vegetables over the years. In 2009/2010, Singapore was the main horticulture export destination for Western Australia, with export values close to S\$27 million.

Singapore Importers Gain Market Insights from Mission Trip

With appreciation of this significant trading partnership and aims to further foster cooperation, a mission trip was made to Western Australia on 29 March 2010. The expedition, co-organised by AVA, the Department of Agriculture and Food Western Australia (DAFWA) and International Enterprise Singapore, enabled Singapore importers to build new contacts and renew existing relations with Western Australian growers and exporters. Some new business deals were also made by local traders through the trip.

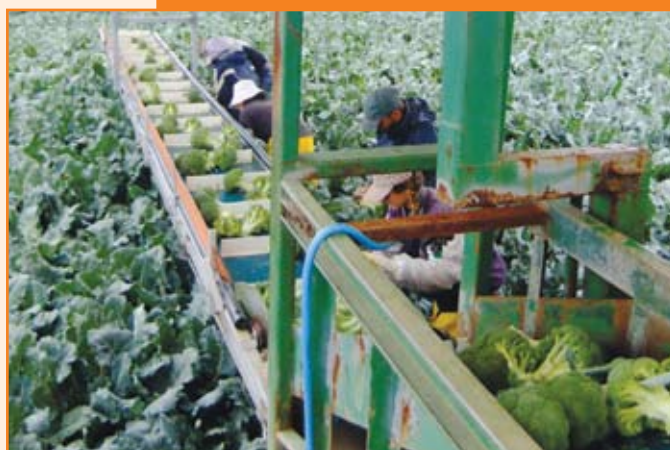
The trip also provided deeper insights on Western Australia's market trends which could affect Singapore's food supply. The region is identified as a possible supply source to Singapore in times of need as it has large production base for fruits and vegetables. Moreover, it has a climate suitable for growing most tropical fruits and vegetables. More importantly, the agri-industries there are willing to grow fruit and vegetable varieties suited to Singapore consumers' tastes.

Singapore importers and AVA also learned about the ongoing development on new varieties of apples, grapes, citrus and stone fruits in Western Australia. They also found out that DAFWA had undertaken preliminary research into ways to reduce production costs of their broccoli and cauliflower farming, through more efficient logistic transportation and packaging solutions. These solutions could also be adopted by local fruit and vegetable traders.

Automation of post-harvest treatment for carrots



Farmers harvesting broccoli through a semi-automated line



Farm visit to a cabbage production site



Showcasing Singapore to Western Australia

Buoyed by the fruitfulness of Singapore's mission trip to Western Australia, and to further enhance our agri-trade relations, AVA invited a delegation from Western Australia to visit Singapore from 16 to 17 December 2010. Twelve representatives from DAFWA, as well as domestic growers and exporters, were introduced to Singapore's vegetables and fruits importers and retailers.

The two-day programme comprised of a Singapore-Western Australia Horticulture Business Seminar. DAFWA provided an "Overview of the Western Australian Fresh Produce Industry and our Supply Capability". This was followed by AVA's presentation of the industry's trade statistics in Singapore, and our import requirements for fresh fruits and vegetables. The Singapore Fruits & Vegetables Import Export Association then briefed the delegation on general market trends in Singapore.

Besides sharing information, business matching sessions were organised as part of the seminar. AVA also accompanied the delegation to call on five major local importers.

Our overseas counterparts also had a chance to visit the Pasir Panjang Wholesale Centre and major supermarkets. Here, it was observed that retail prices of vegetables from Australia are higher than those imported from our neighbouring countries. Thus, it would be worthwhile for Western Australian exporters to target the niche group of consumers in Singapore who do not mind paying more for better quality.

The delegation takes a tour at the Pasir Panjang wholesale centre



Business matching sessions during the Seminar



READY, GET "SETs", GO!

The new series of SETs (Skills Evaluation Tests) designed by AVA and the Institute of Technical Education brings benefits to both Agritechology farmers and their foreign workers. Foreign workers who pass the SETs would be considered for an extension of employment period while their respective employers can enjoy lower levy rates.

Productivity is the buzzword right now across all industries. In terms of food supply, increasing productivity can help to meet the government's aim for local farms to produce 10% of leafy vegetables, 15% of fish and 30% of hen eggs we consume. This will supplement AVA's strategy in ensuring food supply resilience in Singapore.

For industries such as farming, productivity needs to be raised at both ends – in technology and human resource. Farming is a labour intensive business and many local farmers employ a significant number of foreign workers. This labour force must have the relevant skills to compliment hi-tech developments and modern farming techniques. To empower them with the proper know-how to perform their tasks, employers provide relevant training for these workers, which requires time, effort and money.

However, work permits for foreign workers in the Agritechology Sector expire after just six years of their employment in Singapore. Foreign workers who do not possess minimum academic qualifications or professional certifications fall under the High Levy category. These are in accordance to the Work Permit Scheme for Agritechology Industry, which the Ministry of Manpower worked out with AVA.

This means that the on-the-job training given to these workers will be wasted when they are due to return home. Employers would then have to conduct training for a new batch of foreign workers again. For many, this is a costly exercise because of the large number of staff involved. Currently, there are 207 farms under the Work Permit Scheme for Agritechology Industry. Of the farms in this Scheme, 46% of the workforce are made up of foreign workers. Employers have reflected that the restriction was a constant disruption to their business plans and impeded their path towards increasing productivity.

New Skills Evaluation Tests for the Agritechnology Sector

To ease this burden on employers and at the same time upgrade the farming proficiency of these foreign workers, a new series of Skills Evaluation Tests (SETs) was developed to assess farm workers and accord certification to those who pass the tests.

The SET system has existed since July 2005 to test the skills of experienced workers. However, a SET for the Agritechnology Sector in particular was only introduced on 1 December 2010. This new SET assessment was co-designed by AVA and Singapore's Institute of Technical Education.

The five different SET Certifications for foreign workers employed under Agritechnology Sector are:

- Marine Aquaculture (Sea-based).
- Ornamental Fish and Foodfish (Land-based) Farming.
- Poultry (Layer) Farming.
- Vegetable Cultivation.
- Orchid and Ornamental Plant Cultivation.

To date, a total of 115 foreign workers have passed the SETs under their respective trades.

Benefits of New SETs

Foreign workers with at least two years' relevant working experience can apply to sit for these SETs. Those who pass would be considered for an extension of employment period to a maximum of 18 years.

The foreign workers' levy rates for the Permit Scheme for Agritechnology Industry comprises of three tiers, effective 1 January 2011:

Foreign workers in the High Levy categories

| | |
|----------------------------|-------|
| Basic Tier (1st 25%) | \$270 |
| Tier 2 (the next 15%) | \$300 |
| Tier 3 (the remaining 10%) | \$450 |

Farming is a labour intensive business and many local farmers employ a significant number of foreign workers. Employers often provide these foreign workers with relevant training, which requires time, effort and money.



The Ministry of Manpower will also consider foreign workers who have passed SETs Level One for the Low Levy category. Their respective employers can enjoy lower levy rates as well, at \$170, subject to the Dependency Ratios* of the industry.

AVA has received positive feedback from the industry, since the implementation of the new SETs certification. Employers are appreciative of the new SETs for the Agritechnology Sector because they could save on levy costs and their experienced foreign workers could be allowed to continue to work for a longer period.

More information on Work Permit Scheme for Agritechnology Industry can be found on AVA's website: <http://www.ava.gov.sg/AgricultureFisheriesSector/FarmingInSingapore/WorkersAgroTechIndustry/>.

* The Dependency Ceiling for the Agritechnology Sector is 50%, i.e. ratio of one local to one foreign worker.

AVA'S FACEBOOK DEBUT

This April, search for AVA on Facebook and be pleasantly surprised. Yes, AVA has its own Official Page on Facebook now! It is now easier for AVA to share its updates on food safety, supply resilience, animal welfare and more. Remember to 'Like' AVA's Official Page on Facebook!

Let's get social!

BETTER LIVES FOR DOGS IN FARMS

AVA continues to introduce measures to improve dog farm conditions. Structured training is now compulsory for licensees and inspection frequency is stepped up to become a monthly affair.

AVA safeguards animal welfare and in doing so, it values the need to constantly enhance its regulations and keep a close watch on dog farms and pet retailers. On the issue of boarding and living conditions of dogs in commercial premises, AVA has further stepped up its efforts in monitoring and inspection.

The frequency of inspection visits to dog farms has increased from three to four times a year to once every month. This marks AVA efforts in tightening its supervision on dog farm operators, so as to ensure that they provide proper care to the dogs they keep. Furthermore, AVA has taken steps to enforce a structured approach to achieve this aim. Since January last year, dog farm licensees have been asked to submit a health and management plan that details how they are going to improve conditions on their farms.

In addition, AVA is registering existing farm sub-tenants and screening prospective sub-tenants. The added stringent measures help to make sure that these sub-tenants have the appropriate knowledge and experience to conduct dog breeding and sale. On a similar note, AVA has also enhanced standards and competencies in the pet retail industry. Structured training is now compulsory for pet retailers. Besides pet shops, dog farm licensees and kennel managers are also required to attend this training.

Guidelines and Welfare Conditions in The Past

In the past, AVA had received frequent feedback from animal welfare groups and dog-loving individuals on the conditions of some dog farms in Singapore. They usually labelled these farms as "puppy mills", a reference to the business of keeping dogs for the purpose of breeding them and producing puppies commercially for sale. This was because previously, these farms were only required to comply with general guidelines relating to housing and management, housekeeping, record keeping, and disease control. These conditions were adequate for dog boarding but not for dog breeding and puppy sale.

Periodically, some breeders were found wanting in their housing and management of their dogs and actions were taken against them. They were fined for not providing reasonable care and supervision to the dogs, which is an animal cruelty offence. To prevent such offences in the future, AVA continues to reassess its regulatory controls and inspection processes. During these reviews, AVA takes into consideration both the concerns of these animal welfare advocates, as well as the dog farm owners. These farms are necessary as they provide dog boarding facilities to house dogs whose owners have to leave the country for work or pleasure. Some of the farms also produce puppies to meet demand for pet dogs.

Incorporating feedback from relevant stakeholders, AVA has introduced better and more specific practices and standards on the farms, particularly in relation to the breeding, boarding and sale of puppies. The more frequent checks, stricter evaluation processes and obligatory training will certainly go a long way in upgrading the quality and environments of our dog farms and retail shops.

New conditions implemented by AVA set the standards for proper care of dogs in farms. Dog breeding and boarding operators must provide adequate space and hygiene, for example, and submit a detailed health and management plan that details how they are going to improve conditions on their premises.



On the issue of boarding and living conditions of dogs in commercial premises, AVA has further stepped up its efforts in monitoring and inspection. In addition, structured training is now compulsory for pet retailers.



OUT SCOUTING: NEW TESTING TECHNOLOGIES FOR UNCONVENTIONAL FOOD HAZARDS

Singapore imports more than 90% of the food it consumes. To ensure food safety, AVA works hard to prevent contaminated food from entering the country. Laboratory tests play an important role in this. AVA's recent study trips to world renowned laboratories brought back many insights on the emerging testing technology for unconventional food hazards.

Singapore imports more than 90% of its food from diverse sources. Thus, AVA, as the guardian of food safety and public health for Singapore, is constantly looking for more effective ways to test for and prevent the entry of contaminated food.

Following the devastating effects of melamine contaminated milk and dairy products in China in 2008, food regulatory authorities in many countries began to enhance their food safety testing capabilities.

This was necessary as prior to the melamine contamination saga, food safety agencies worldwide relied on traditional testing regimes for targeted hazards. These hazards were identified based on the common risks that foods are exposed to. Under normal circumstances, melamine would not be a hazard associated with milk. Therefore, it was not routinely tested in food safety screening unless there were prior intelligence on such abuse, or reports of investigations into such contamination incidents.

In Singapore, although no infant formula milk was imported from China, the incident led AVA to suspend the sale and import of all China-made milk products as a precautionary measure. All China-made milk and milk products were also recalled. This caused both public anxiety and economic loss. While the bans have since been lifted following an improvement in China's food safety and regulatory system, AVA continues to stay vigilant. In order to ensure that Singapore remains safe from such threats, AVA needs to be able to detect early signs that indicate the presence of unconventional contaminants in food.

Through the two recent study trips to state-of-the-art laboratories in the UK and US, AVA officers learned about the useful know-

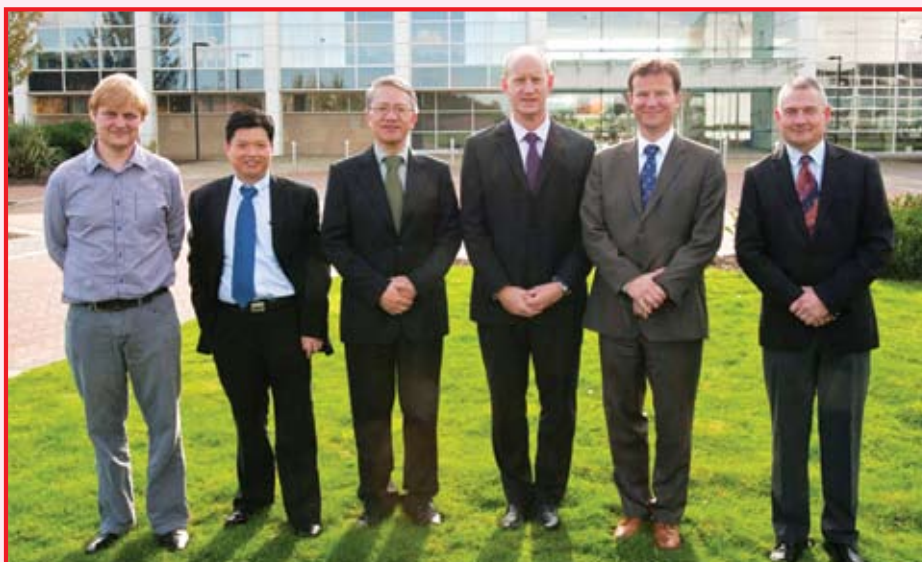
how and technologies in developing and conducting analysis for unconventional food hazards. These laboratories were:

- Science and Advice for Scottish Agriculture (UK).
- Food and Environment Research Agency (FERA, UK).
- Laboratory of Government Chemist (UK).
- Food & Drug Authority's Centre for Food Safety and Applied Nutrition (US).
- Abbott Laboratories' IBIS research facility (US).

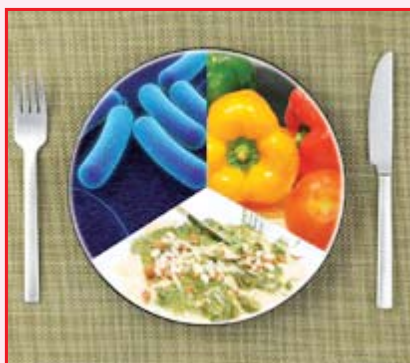
Insightful discussions were held with laboratory managers and key scientists there to exchange views and opinions on the technological platforms and workflows for the screening of unconventional food-borne hazards. These were useful to AVA in advancing the establishment of its analytical capabilities for the pertinent areas.

During this trip, AVA officers found that the latest Fourier-Transform Mass Spectrometry (FT-MS) technology has emerged as the preferred analytical tool for conducting non-target analysis, especially for detecting small molecules of contaminants. This observation is in line with AVA's findings from its own technological assessment.

In addition, the laboratories informed AVA that certain gaps and challenges are to be expected while developing the analytical capabilities for unconventional food hazards. As such, there is a need for advance software algorithms, comprehensive database and expertise in deciphering the mass spectrum data to identify unknown compounds. AVA will be working with these British and American reference laboratories to overcome the hurdles. This could be done by sharing information and knowledge, co-developing projects and training for AVA personnel.



From left to right:
Dr James Donarski (FERA),
Dr Wu Yuan Sheng (AVA),
Dr Paul Chiew (AVA),
Mr Simon Baty (FERA),
John Lee (Agilent),
and Robin Philp (Agilent).



COMBATING CONTAMINANTS: STRATEGIES TO ENSURE FOOD SAFETY

AVA recently co-organised a seminar on emerging issues and risk management of contaminants in food. A workshop was also held to harmonise food safety standards within ASEAN.

In a recent seminar co-organised by AVA and the International Life Sciences Institute - Southeast Asia Region, speakers and participants discussed the impact of contaminants on food safety, and proposed strategies on how to mitigate these threats.

The half-day seminar titled "Emerging Issues and Risk Management Strategies" was held on 11 January 2011. It brought together experts from international institutions such as the World Health Organisation (WHO) and Food and Agriculture Organisation of the United Nations (FAO). Together with representatives from government agencies and the industry, participants were provided with international perspectives on contaminants in food. Speakers also shared useful risk assessment and analytical methods through their presentations on:

- Emerging Issues and International Approaches in Managing Food Contaminants (WHO China).
- Impact of Contaminants in Food Safety Within the Context of Food Security in Southeast Asia (FAO-Regional Office for Asia and the Pacific).
- Regulatory Trends for Food Pathogens and Contaminants: Codex Standards and Singapore Experience (AVA).
- Risk Assessment and Management of Chemical Contaminants in the Supply Chain (Nestlé Quality Assurance Centre).
- An Industry View on Dealing with Microbiological Pathogens in Food (Unilever).
- An Overview of Food Analysis (Agilent Technologies).
- HSA's Partnership with Government and Industry in Support of Safer Foods through Application of Analytical Food Science Solutions (Health Sciences Authority, Singapore).

In her keynote address for the seminar, Ms Tan Poh Hong (CEO, AVA), emphasised AVA's message that food safety is a shared responsibility. It requires the combined efforts of the government, food industry, and consumer. She encouraged all stakeholders to continuously keep themselves up-to-date with the latest emerging issues related to food contaminants, and the science behind them. They should also be aware of available risk management strategies to counter these problems.

Following the seminar, the 9th ASEAN Food Safety Standards Harmonisation Workshop was conducted on the second half of 11 January and throughout 12 January 2011. The Workshop (open only to government representatives from ASEAN member states and selected industry members) is an annual event focusing on cooperation within the ASEAN region.

Participants were provided with international perspectives on contaminants in food. Speakers also shared useful risk assessment and analytical methods.



In her keynote address for the seminar, Ms Tan Poh Hong (CEO, AVA), encouraged all stakeholders to continuously keep themselves up-to-date with the latest emerging issues related to food contaminants, and the science behind them.



This was an effective platform for government representatives of ASEAN member states to update each other on their efforts in harmonising standards for food additives, contaminants, and other food safety issues for the region.

In addition, the workshop was a good opportunity for participants to discuss the concurrence of contaminant standards through risk assessments. They also explored how quality analytical data can be used to support risk assessment and food safety controls. The workshop concluded on a cordial note, with these government representatives reiterating their commitment in working towards food standards that are harmonised for the region.

FOOD FOR HEALTH: MORE HEALTH CLAIMS APPROVED

AVA approves new health claims for use in food labels and advertisements, as part of its continuous efforts to regulate and facilitate the trading of pre-packed foods.

With the rising popularity of foods promoting good nutrition and health, more manufacturers and importers are offering products that carry purported additional health benefits. These food products may come in the form of conventional foods, foods with added nutrient and non-nutrient components, and special purpose foods, which are formulated to cater to the particular dietary needs of specific groups of consumers.

There are certain regulatory controls on the sale of these types of food in Singapore. Special purpose foods must carry labels with clear indication of their special suitability to particular dietary needs. In addition, they should also meet the nutrition labelling requirements as stipulated in the Food Regulations.

Nevertheless, AVA understands the industry's enthusiasm to develop fortified food products that carry health advisory messages. Besides being a regulator, AVA also plays the role as a trade facilitator, so it is constantly reviewing its regulations of health claims used on food labels and in advertisements.

New Health Claims Approved

Since February 2010, new health claims have been evaluated and approved by AVA. They include:

- Plant sterols and stanol
(for their proposed function in lowering blood cholesterol).
- Pre-biotic blend, zinc and iron
(for their proposed function in enhancing immunity).

AVA, along with the Advisory Committee on Evaluation of Health Claims (ACEHC), looks at the scientific basis behind each health claim. The committee also assists AVA to develop a framework and principles for evaluation of health claims based on the Codex Alimentarius Commission's (Codex) recommendations.



Special purpose foods must carry labels with clear indication of their special suitability to particular dietary needs. In addition, they should also meet the nutrition labelling requirements as stipulated in the Food Regulations.



Plant sterol has been approved as a health claim since February 2010, for its proposed function in lowering blood cholesterol.

The Codex was created in 1963 by the Food and Agriculture Organisation (FAO) of the United Nations and World Health Organisation (WHO). It develops food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The key objectives of this programme are protecting health of the consumers, ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organisations.

Working with definitions under the Codex, the ACEHC now also helps AVA to evaluate and recommend the applications for use of health claims, such as "nutrient function claims" and "other function claims". Finalised guidance information, application forms and checklists are made available to assist industry members with their applications.

In addition, the ACEHC advises and provides updates on relevant scientific developments and legislation relating to health claims evaluation.

The ACEHC comprises reputable scientific experts who possess relevant professional training and experience:

- AVA
- Ministry of Health
- Health Sciences Authority
- SPRING Singapore
- National University of Singapore
- Singapore Polytechnic
- Republic Polytechnic
- Consumers Association of Singapore
- Singapore Manufacturers' Federation
- Singapore Food Manufacturers' Association
- Health Supplements' Industry Association of Singapore.

Nutrient-specific diet-related health claims

Since 2009, local food manufacturers and importers have been able to apply for the use of five nutrient-specific diet-related health claims for their food products:

1. A healthy diet with adequate calcium and vitamin D, with regular exercise, helps to achieve strong bones and may reduce the risk of osteoporosis. (Name of food) is a good source of/high in/enriched in/fortified with calcium.
2. A healthy diet low in sodium may reduce the risk of high blood pressure, a risk factor for stroke and heart disease. (Name of food) is sodium free/ low in/ very low in/ reduced in sodium.
3. A healthy diet low in saturated fat and trans fat, may reduce the risk of heart disease. (Name of food) is free of/ low in saturated fats, trans fats.
4. A healthy diet rich in whole grains, fruits and vegetables that contain dietary fibre, may reduce the risk of heart disease. (Name of food) is low in / free of fat and high in dietary fibre.

5. A healthy diet rich in fibre containing foods such as whole grains, fruits and vegetables may reduce the risk of some types of cancers. (Name of food) is free of / low in fat and high in dietary fibre.

AVA worked with the Health Promotion Board to develop criteria for use of the above claims. As an important step to ensure that these high-level claims are used appropriately, only products approved to use the Healthier Choice Symbol will be considered for carrying such claims.

Details on the criteria to meet for use of these claims, application process, claims approved, and conditions for use of new claims can be found on AVA's website: <http://www.ava.gov.sg/FoodSector/FoodLabelingAdvertisement/>.

SINGAPORE WELCOMES THE RETURN OF BEEF AND PORK IMPORTS FROM JAPAN

AVA has lifted its import restrictions as the Miyazaki prefecture is now free of Foot and Mouth Disease (FMD).

Singaporeans can now enjoy their favourite Wagyu beef, Kagoshima Kurobuta (black) pork and dairy products from Japan again with peace of mind. AVA has lifted its restriction on all beef, pork and dairy products from the whole of Japan, including the Miyazaki prefecture, on 1 November 2010.

To maintain Singapore's FMD-free status, AVA suspends the import of risky products from countries with FMD outbreaks. Nevertheless, AVA makes continuous efforts to evaluate whether the disease could be effectively controlled. This is part of AVA's risk-based approach to mitigate potential threats from imported foods, so as to protect both public and animal health.

This was why beef, pork and dairy products from Japan were suspended in April 2010 when FMD broke out in the Miyazaki prefecture. Subsequently, AVA met officials from Japan's Ministry of Health, Labour & Welfare and the Ministry of Agriculture, Forestry and Fisheries on 17 September 2010 to obtain an update on the country's FMD control situation and discuss the possibility of regionalisation for FMD.

Regionalisation is an approach which allows imports from disease-free zones within infected countries, subject to meeting AVA's conditions for the establishment of stringent control and surveillance programmes. During the meeting in Japan, AVA also assessed the information provided by the Competent Authorities in Japan, which included an extensive surveillance system and a comprehensive traceability method. AVA then concluded that regionalisation for the recent FMD outbreak in Japan could be implemented, as the outbreak was effectively confined within the Miyazaki prefecture at that time.



Following this conclusion, AVA allowed the import of beef and pork from AVA-accredited establishments in prefectures that are unaffected by FMD on 5 October 2010. This allowance was also subjected to the condition that the beef and pork are derived from animals raised in prefectures excluding Miyazaki. The restriction on the import of dairy products from Japan was also conditionally lifted with similar regionalisation-zoning requirements. After the World Organisation for Animal Health assessed Japan's final report to be in compliance with its guidelines, AVA lifted the ban completely in November 2010.

History of AVA's Efforts and Regulations during Outbreak of FMD in Japan in 2010

| | |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| April | FMD broke out in Japan. Imports of beef and pork were banned. |
| 17 September | AVA met officials in Japan to assess possibility of implementing regionalisation of FMD outbreak. |
| 5 October | AVA allowed the import of beef and pork from AVA-accredited establishments in prefectures that are unaffected by FMD, subjected to conditions. |
| 1 November | AVA lifted its restriction on beef, pork and dairy products from the whole of Japan, including the Miyazaki prefecture. |

PLENTY MORE FISH IN THE SEA: AVA UPS EFFORTS TO HELP LOCAL FISH FARMS INCREASE PRODUCTIVITY

To ensure all fish farms meet the minimum production target, AVA officers will be visiting farmers to better understand their needs and help those who are lagging behind to devise progress plans to be up to mark.

AVA announced in March 2011 that its officers will be visiting all local fish farms over the next few months, to ensure that the farms meet the minimum production target of 17 tonnes of fish per half-hectare space annually. The lowest quantity is set as part of AVA's licensing conditions for coastal fish farms, given Singapore's limited land and sea space for farming activities.

Through these visits, AVA aims to better understand the farmers' needs. For those who are not meeting the required output yet, AVA will assist them in developing progress plans towards achieving the minimum production targets.

Their total productions will contribute towards raising Singapore's domestic fish production to 15 percent of the total consumed locally. Currently, domestic production for fish is at four percent. Local production plays an important supporting role in ensuring food supply resilience; it can act as a buffer against sudden supply disruptions from overseas sources.

CEO of AVA, Ms Tan Poh Hong said: "AVA will work closely with the farmers who are not meeting the minimum production target, to help them improve their productivity. Specifically we will help them identify gaps that hinder production and develop improvement plans."

Farmers will also be encouraged to leverage on AVA's Food Fund. The Food Fund was set up in December 2009, as part of the government's efforts to raise Singapore's domestic production. Local food and agriculture industries can apply for the Food Fund to defray up to 70% of the costs they incur in upgrading production and R&D capabilities, as well as in expanding food sources from abroad.

There are currently 111 fish farms in Singapore. Of these, 95 are coastal farms and the other 16 comprise of deep sea farms, hatcheries, industrial-scale farms and oyster/shellfish farms. Among the coastal farms, 23 are producing more than the minimum production level of 17 tonnes. Ten are producing between 8.5 and 17 tonnes, while another 36 are producing at below 8.5 tonnes. The remaining 26 farms are new farms or farms that underwent a recent change of ownership.

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