TROPICAL FRUIT NET

Your Global Partner in Tropical Fruit Development

Issue No. 12 | January 2009

TFNet - Linking People, Technology & Market

International Workshop - Global Information System on Tropical Fruits with Special Focus on Africa

Group photograph of the participants with CEO of TFNet, Dr. Izham Ahmad (sitting second from the right), First Project Officer of CFC, Ms. Eltha Brown (sitting third from the right) and Mr. Chua Piak Chwee (standing third from the right), the Project Officer of TFNet.

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TFNet CEO meets with Ministry of Agriculture China official

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The Common Fund for Commodities (CFC) has financed a project under the Fast Track facility entitled "The transfer of Global Information System on tropical fruits with special focus on Africa". The main objective of the project is to develop a credible and comprehensive information clearing-house with technical information on tropical fruits, integrated with trade and marketing information system for the benefit of the stakeholders of the tropical fruit industry with particular reference to Africa.

To achieve the goal, a two-day workshop was held at Corus Hotel, Kuala Lumpur on 14-16th August 2008 with the following objectives:

- To familiarise participants with the technical flow and content of the Information System
- To provide an opportunity for participants to review the "user-friendliness" and relevance/usefulness of the system
- To encourage participants to review the content of the Information System and provide feedback for further enhancement of the system
- To serve as a forum for participants to contribute ideas for the continuous maintenance and updating of information for the sustainability of the Information System

Nine representatives from African countries namely, Burkina Faso, Cameroon, Cote d'Ivoire, Ghana, Guinea, Nigeria, Senegal and Tanzania attended this workshop which was officially addressed by the Chief Executive Officer of TFNet, Dr. Izham Ahmad and First Project Officer of CFC, Ms. Eltha Brown. Mr. Chua Piak Chwee, the Project Officer of TFNet presented a "Global Overview of Tropical Fruit Industry" followed by introduction to "Global Information System on Tropical Fruits with Special Focus on Africa".

During the workshop, participants were briefed regarding the flow and functionality of the information system. Besides, they also got involved in hands-on exercises, group discussion and group presentations in order to get their feedback regarding the usefulness and further enhancement of this information system. At the end of the workshop, field trip to the Selangor Fruit Valley and visit to Malaysia Agriculture, Horticulture and Agrotourism Show 2008 (MAHA) at Serdang, Selangor were also organized for the participants.

Editor's Note...

Welcome to TFNet Newsletter January Issue 2009. This issue covers events in the second half of 2008. A major events for TFNet was the 'International seminar on consumer demand and export of tropical and subtropical fruits' which was held on 16-18 August 2008, in Bangkok, Thailand, which was followed by the Board of Trustees meeting (BOT). The BOT meeting held on 20 August 2008 also saw the attendance of the erstwhile Chairman of TFNet, former Malaysian Ministry of Agriculture, Secretary General, Dato' Dr. Zulkifli Idris, who has since retired. We would like to wish him all the best in his future endeavors. TFNet would like to welcome Dato' Mokhtar Ismail, the present Ministry Secretary General as the new Chairman of TFNet. TFNet also organised an international workshop on global information system on tropical fruits with special focus on Africa' in Kuala Lumpur, Malaysia on 14 – 16 September 2008.

A paper presented by the TFNet CEO entitled 'Trends in production and trade of tropical fruits in ASEAN countries', during the International Tropical Fruit Symposium, which was held in Bogor, Indonesia on November 3 – 7, is featured in this issue. Another feature is a paper presented at the Pitaya seminar, which was held in Malaysia on 20 October by Dr. Nguyen Van Hoa, from SOFRI, Vietnam, entitled 'Current research activities and the development of Good Agriculture Practice for pitaya in Vietnam'.

For 2009, TFNet has planned for a few major events, beginning with a strategic workshop which will be held in Kuala Lumpur on 16 – 17 February 2009. The workshop, which will be attended by all board members, will deliberate to chart the strategic direction for TFNet for 2009 – 2011. On 20th August, TFNet will have its 4th General Assembly, where selected countries, networks and all members will be invited to discuss on activities and vote for new office bearers in the Board of Trustees. The general assembly will be preceded by a 2 day seminar on 'Recent developments in production, post harvest management and trade for mangosteen, rambutan dan pomelo'.

Last but not least, if you are a researcher, a market or trade expert, economists or possess other expertise related to the various fields of tropical and subtropical fruits, we would like you to register yourself as resource persons in our network. Registration is online at www.itfnet.org under the 'resource persons' title bar.

Welcome New Members

TFNet welcomes the following members :

Ordinary Members

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Note:
For those interested to contribute and participate in TFNet's activities, the membership application form is on page 18 of this newsletter.

Benefits as TFNet Members

- Sharing information, expertise and technologies;
- Participation in conferences and seminars;
- Market development and trade promotion;
- Participation in collaborative projects or studies;
- Assistance in implementation and harmonisation of international regulations; and
- Participation in human resource development programmes

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TFNet UPCOMING EVENTS

International Seminar on 'Recent Advances in the Production, Postharvest Management and Trade of Mangosteen, Rambutan and Pomelo'.

The most popular and traded tropical fruits are bananas, mangos, pineapple, papaya and avocados. Mangosteen, rambutan and pomelo are other less popular tropical fruits that are local favourites, in Asia, mainly in South East Asia. With the favorable nutrient content and exoticness of these three fruit types, they have the potential to be developed, promoted and marketed to a wider consumer base.

The objective of this seminar is to:
- To impart knowledge on current research and development efforts on production and postharvest management of mangosteen, rambutan and pomelo.
- To understand the present market strength of these fruits and ways of promoting its consumption to other markets.
- To establish networking ties among experts, growers, traders, extension agents, researchers, processors and other stakeholders involved in the tropical fruit industry, especially those working on mangosteen, rambutan and pomelo.

Date : 18 – 19 August 2009
Venue : Best Western, Seri Pacific Hotel, Kuala Lumpur
Organisers : TFNet, Bioversity International, Department of Agriculture, MARDI
Local participants : RM 450.00 (TFNet member : RM 400.00)
Foreign participants : USD 200.00 (TFNet member : USD 180.00)
Students : RM 200.00

Call for papers : please send abstracts of at least 300 words to : yacob@itfnet.org / yacob@pc.jaring.my

TFNet 4th General Assembly
Date : 20 August 2009
Venue : Best Western , Seri Pacific Hotel, Kuala Lumpur
All members of TFNet are invited.

OTHER RELATED EVENTS

Exotic Fruits Supply Chain - Study Tour
19 - 24 May 2009, Chantaburi , Thailand

Background
Tropical fruit demand is expanding in Europe , Asia and America . Although the major focus of tropical fruits are mango, pineapple, papaya and avocado, but exotic fruits such as durian, mangosteen and rambutan are becoming common on supermarket shelf in major importing countries. Thailand is the world leader on these fruits' production and export.

Chantaburi which is located 245 km east of Bangkok is a major production area of durian, mangosteen and rambutan in Thailand. The total area is around 633,800 ha in which 240,000 ha is fruit production area. Every year the collaboration among government agencies and local private sector in Chantaburi will organize the World Durian Festival at this harvesting season which including durian competition, mangosteen competition, local product exhibition, parade and decoration. Also there will be displays of local and rare varieties of durian and other exotic fruits.

AFMA is an international organization based in FAO Regional office for Asia and the Pacific, Bangkok . It is an autonomous body organizing activities to enhance the technical exchange among countries in Asia and the Pacific. This year, the Exotic Fruits Supply Chain tour is aimed for participants to learn the local knowledge of small and medium farmer on production and quality of the fruits, to learn the government role on agricultural extension service and to see the marketing activity during the peak time of production and export which will last only a few months but driving provincial economic for the whole year.

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Asia Fruit Logistica 2009

Asia Fruit Congress
2 - 4 September 2009
9.00-13.00 each day
Theatre 1

Asia Fruit Logistica
2 - 4 September 2009
13.00-18.00 each day
Hall 5 bc

Location
Hong Kong Convention & Exhibition Centre (HKCEC)
Harbour Road Entrance

Further Information
Visit the ASIA FRUIT LOGISTICA website at www.asiafruitlogistica.com for the latest service information on the exhibition.
For information on the ASIAFRUIT CONGRESS, please visit www.asiafruitcongress.com

Organiser
The exhibition is organised by Global Produce Events GmbH (GPE). GPE is a joint venture company owned by Messe Berlin GmbH, organisers of FRUIT LOGISTICA, and Fruitnet Ltd (UK). Fruitnet Ltd is owned by Market Intelligence - organisers of the Asiafruit Congress and publishers of Asiafruit, Americafruit and Eurofruit Magazines - and by Dr. Wolf Media GmbH - publishers of Fruchthandel Magazine.

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International Conference on Horticulture
November 9-12, 2009, Bangalore, India

Invitation
The Conference is designed to provide a common forum for all stake holders to share their experience and expertise to suggest the technology-institution-policy package for sustainable production and marketing of horticultural products. This would augment employment-income generation to ensure livelihood security of the subsistence farmers without further depleting the natural resource base. Production and consumption of horticultural products could play a key role in providing the much needed nutrition and health security to about 815 million people suffering from hunger and malnutrition in the developing world.

The objective of the Conference is to identify key factors influencing the sustainability of horticulture sector in developing countries through participatory dialogues, exchange of knowledge, genetic materials and human resources among all the stake holders.

The International Conference on Horticulture will be held at ITC Hotel, The Windsor, Bangalore, India, November 9 - 12, 2009. The garden city Bangalore (Bengaluru) is well connected to the international and domestic airports. We are pleased to host the conference and look forward to meet our distinguished guests.

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Trends in Production and Trade of Tropical Fruits in ASEAN Countries*

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PRODUCTION TREND

During the period 1996-2005, tropical fruit production in the ASEAN region expanded by 45.5%, increasing from 19.7 million tonnes to 28.7 million tonnes. The major producers are the Philippines, Indonesia and Thailand. Production in the Philippines has increased by 56.5%, from 6.2 million tonnes in 1996 to 9.6 million tonnes in 2005, accounting for 33.6% of total ASEAN production. In Indonesia, production has increased by 71.6%, from 4.8 million tonnes to 8.3 million tonnes, representing 28.9% of ASEAN's production in 2005. Production in Thailand had increased by 18.2% from 5.5 million tonnes to 6.5 million tonnes. Vietnam has shown significant increase, from 1.9 million tonnes to 2.6 million tonnes. Production of tropical fruits by ASEAN countries in 2005 accounted for about 10.3% of total global production as shown in Figure 1.

Production in the region is dominated by bananas, followed by pineapples, mangoes, watermelons, papayas and avocados. An estimated 41% of banana production was from the Philippines (6.3 million tonnes); 34% (5.2 million tonnes) from Indonesia and 12% (1.9 million tonnes) was contributed by Thailand. Thailand and the Philippines are the major pineapple producers, collectively producing about 70% (3.97 million tonnes) of ASEAN pineapple production in 2005.

Figure 1: ASEAN Tropical Fruit Production, 1996-2005

Countries	Production Trend 1996 - 2005 (mil. Tonnes)	% Increase 1996 - 2005	2005 % Production Share	
			ASEAN	World
Phillippines	6.16 to 9.64	56.5%	33.6%	3.5%
Indonesia	4.83 to 8.29	71.6%	28.9%	3.0%
Thailand	5.52 to 6.52	18.2%	22.8%	2.4%
Vietnam	1.90 to 2.62	38.0%	9.2%	0.9%
Malaysia	1.00 to 1.15	15.3%	4.0%	0.4%
Cambodia	0.19 to 0.21	16.4%	0.8%	0.1%
Laos, Brunei, Singapore	0.10 to 0.21	110.0%	0.7%	0.1%
TOTAL ASEAN	**19.7 to 28.7**	**45.5%**	**100%**	**10.3%**

(Data Source: FAOSTAT)

The major mango producing countries are Thailand, Indonesia and the Philippines. Collectively these three countries accounted for 91% of total ASEAN mango production in 2005. Watermelon is mainly produced by Thailand and Vietnam.

Production by both countries amounted to 852,000 tonnes in 2005, accounting for about 71% of the region's total watermelon production.

ASEAN countries are also major producers of minor fruits which are not internationally traded on a large scale. These include fruits such as durian, rambutan, mangosteen, lychee and longan. The total production of minor fruits by these countries in 2005 amounted to 4.7 million tonnes.

EXPORT TREND

Tropical fruits produced in the ASEAN region are largely consumed domestically. Annually, an estimated 9% of the production is exported as fresh fruits and accounted for less than 10% share of total world export quantity. During the period 1996 – 2005, export volume by the ASEAN countries had increased by 33.6%, from 1.85 million tonnes in 1996 to 2.5 million tonnes in 2005. In value terms, exports from the region has increased by 67.8%, from USD402.2 million in 1996 to USD674.9 million in 2005, accounting for only 6% of total world export value.

The export trade in major tropical fruits by ASEAN countries is dominated by bananas, pineapples, watermelons, papayas and mangoes. Philippines continues to be the major exporter in the ASEAN region, accounting for 82.4% of total ASEAN export volume of fresh tropical fruits in 2005, followed by Malaysia with 7.8%, Vietnam with 6.5% and Thailand with 2.5%. Philippines was the world's second largest export of bananas in 2005, with a volume of 1.8 million tonnes (valued at USD430 million), after Ecuador. The major exports from Malaysia are watermelons and papayas.

In 2005, Malaysia was the world's second largest exporter of papayas with a volume of 42,000 tonnes (valued at USD15.5 million), after Mexico. The major fruits exported by Vietnam are watermelons and bananas. The major fruits exported by Thailand are bananas, grapefruits and pomelos, and pineapples. The export value by ASEAN countries and market share in 2005 is shown in Figure 2.

The export of minor fruits such as durians, rambutans, longans and mangosteens also contributed significantly to the export earnings of ASEAN countries. In 2005, Thailand reported an export value of USD271 million, comprising durian (USD77.4 million), longan (USD142.6 million), rambutan (USD11.5 million), mangosteen (USD21 million) and lychee (USD18.5 million). In Indonesia, an estimated USD1.72 million worth of rambutan was exported in 2005.

Figure 2: Export Value Trend and Market Share

Countries	Export Value Trend 1996 - 2005 (USD '000)	% Increase 1996 - 2005	2005 Export Value Share	
			ASEAN	World
Phillippines	301,274 to 588,543	95.4 %	87.2 %	5.3 %
Malaysia	43,963 to 44,400	1.0 %	6.6 %	0.4 %
Thailand	9,408 to 19,317	105.3 %	2.9 %	0.2 %
Vietnam	27 to 15,892	58,912.1 %	2.4 %	0.1 %
Singapore	20,593 to 3,515	-82.9 %	0.5 %	0.03 %
Indonesia	26,842 to 3,196	-88.1	0.5 %	0.03 %
Laos, Brunei, Cambodia, Myanmar	43 to 13	-70.8 %	0.0 %	0.0 %
TOTAL ASEAN	**402,150 to 674,876**	**67.8 %**	**100 %**	**6.0 %**

(Data Source: FAOSTAT)

The ASEAN region dominated the export market for processed tropical fruit products with an estimated 43.4% of the total world export value in 2005. The export value of processed products has increased by 20.7%, from USD702 million in 1996 to USD847.3 million in 2005. The major exports in 2005 are canned pineapples and pineapple juice concentrates, totaling USD780 million, accounting for 92% of total ASEAN export value of processed products and 71% of total world export value of processed products. The major exporters of canned pineapples and pineapple juice concentrates in 2005 are Thailand (USD439 million), Philippines (USD171 million) and Indonesia (USD129 million).

IMPORT TREND

The ASEAN region is a net exporter of fresh and processed tropical fruit products. With the exception of Singapore, there is minimal import of these products. During the period 1996-2005, the import quantity and value of fresh fruits had remained unchanged, ranging from 200,000 tonnes to 230,000 tonnes and from USD60 million to USD73 million. Import of processed tropical fruit products in 2005 was estimated at USD28 million, comprising mainly of canned pineapples by Singapore from neighboring ASEAN countries.

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** (Summary of paper presented at 4th International Symposium on Tropical and Subtropical Fruits, 3-7 November 2008, Bogor, Indonesia)*

Current Research Activities and the Development of Good Agriculture Practice (GAP) for Pitaya in Vietnam

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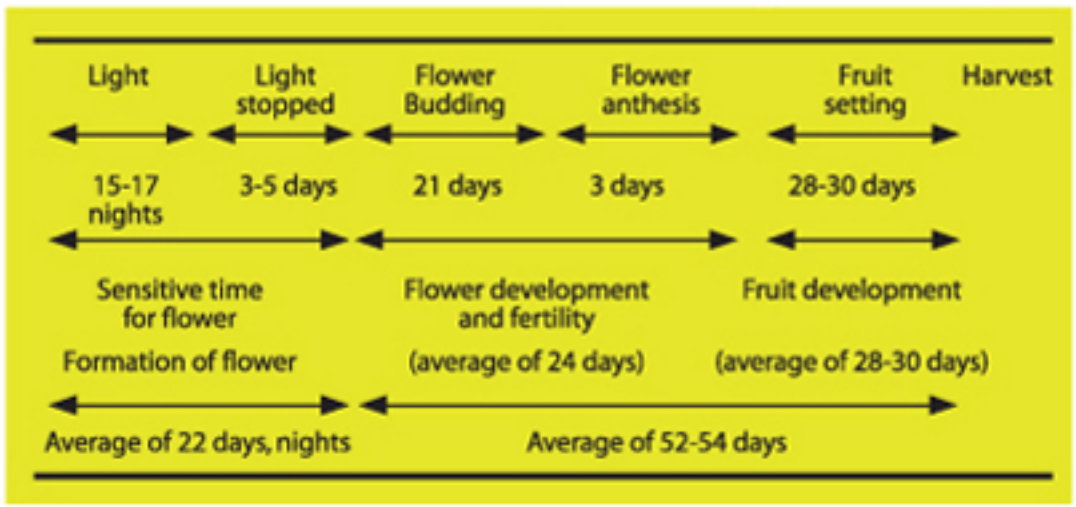
Since 2000, Vietnam's 13,500 ha of dragon fruits suffered a declined in price of about 60% due to fruits mainly sold locally and to neighboring countries (Nguyen Minh Chau, 2007). Currently, high-value markets in Japan, Europe and North America are non-receptive to Vietnamese dragon fruit due to perceptions of poor quality and lack of legal and food safety accountability.

Through the support from CIRAD (France), red and yellow pitayas were introduced to SOFRI in 1995. Following that, several crosses of red pitaya from Colombia with local white flesh pitaya were carried out to improve yield and quality of red pitaya. In 2000, SOFRI tested 188 pitaya hybrids from which 12 potential hybrids were planted elsewhere which finally yielded one hybrid recognized by the Ministry of Agriculture and Rural Development (MARD). Encouraged by this success, production of new pitaya varieties from collection of domestic and introduced varieties/clones from Thailand, Taiwan, France and USA continued. Besides, cultural improvements in pitaya cultivation such as changing live tree supports to cement frames, optimizing planting density, application of organic fertilizers or manure for better quality fruits, training and pruning of the plant canopy and floral induction by chemicals treatment and light enhancement are also implemented (Yen, 2006).

Since pitaya flowers only under long photoperiod, several experiments on standardization of floral induction of pitaya were conducted. Day length was extended by providing artificial light in the evening from 8-10 PM for 15 to 20 consecutive nights sufficient for floral induction depending upon weather, soil conditions, the plant's health, etc. Flower buds began to appear 3 to 5 days after extended lighting was stopped; they require 20-21 days for further floral development and then anthesize for 3 days to allow pollination and fertilization to take place. Then the developed fruit took another 25-28 days to mature, thus requiring a total of 50-52 days for completion of one fruiting cycle (as shown in the Table 1).

Table 1. Flower induction sequence using artificial light



Pitaya packed for export.

To further improve quality and good fruit appearance (firm with green bracts), foliar fertilizers such as Growmore, Miracle Growth and GA3 (Progibb) were used.

Evidently, anthracnose caused by *Colletotrichum gloeosporioides* was the most serious disease of pitaya, which damaged the plants and affected both the pre and post yields. As for the status of diseases of pitaya, the study result is shown in Table 2 :

Table 2. List of diseases infecting pitaya plants at Long An, Tiengiang and Binhthuan Province (SOFRI, 2005)

No	Disease	Causal organism	Attacked part	Time of record	Damage
1	Anthracnose	*Collectotrichum gloeosporiodes*	Fruit, Flower, branch	Rainy seson	+++
2	Fruit rot	*Fusarium* sp.	Fruit	Fruit Ripening	++
3	Branch Rot	*Fusarium* sp., *Xanthomonas*	Branch	Late dry and early of rainy season	++
4	Like sunburn	*Macssonia agaves syd, sphaceloma* sp.	Branch	Late dry and early of rainy season	++
5	Brown spot	*Glocosporium avages*	Branch	Year round	+
6	Black spot	*Ascochyta* sp.	Fruit and Branch		+
7	Melanoes	*Capnodium* sp.	Branch, fruit		+++
8	Scab	*Unidentify*	Branch		++

Note: + Low, ++ Medium, +++ More popular

Referring to existing pests of pitaya such as, beetle, ant, mealy bug, and the most important pest is fruit fly *(Bactrocera dorsalis* and *B. correcta)*. To minimize fruit fly problem, "SOFRI PROTEIN" bait made from beer waste containing an insecticide "fipronil" effectively kills both the male and female flies. Also, SOFRI's electric fly trap with *methyl eugenol* and SOFRI PROTEIN bait placed in its center kills flies instantaneously by the flowing electric current when they enter for the bait. Other known serious pest of pitaya is red ant *(Solenopsis geminata* Fabricius and *Cardiocondyla wroughtoni)* that bites the fruit skin which causes diseases infection and also the development of scab thus lowering the fruit quality and price. To control these ants, "SOFRI – TRU KIEN", a chemical poison is used (Dien, 2006)

Antracnose disease on pitaya.

Currently, SOFRI is conducting more studies on disease and pest controls via the following management strategies:

a) ***Cultural practices*** (Hoang, 2005): Planting of tall trees in windward direction to shield the orchards from the source of inoculums; replacing live tree supports with the concrete pillars for *pitaya* to climb on thus reducing disease transfer from live trees; use of organic fertilizers with control of inorganic fertilizers at suitable levels and at right time to improve fruit quality; and avoiding spraying pond water to pitaya's canopy in disease affected areas.
b) **Physical treatment**: Training and pruning of young trees to distribute branches in 4 directions for more light exposure for better photosynthesis, reduction of disease infection and removal of all the "diseased" and "soil touching" branches.
c) ***Biological control*** (Hoa, 2006 & Dien, 2006) : Applying more organic manure and antagonist fungi *(Trichoderma)*, which help in manure decomposition and killing of the pathogen present in the fallen branches; applying *salicylic acid* to stimulate plant resistance to diseases (15 days before harvesting); and bagging of the fruits 14-15 days before harvesting to reduce disease infection and fruit fly attack.
d) ***Chemical treatment***: Applying copper chemical (*Propineb* or *Difenoconazole*) to the plants after pruning and fruit harvesting.
e) ***Post harvest treatment*** (Hoa et al., 2006): Keeping harvested fruits in warm water at 53°C for 10 min or subjected them to 46.5°C for 20 min in vapor heat treatment unit (Sure-Unit) to kill fruit fly and disease fungi without affecting fruit quality.

Since 2005, the Good Agricultural Practice (GAP) has been applied to Vietnam's pitaya industry. The first EUREPGAP certification was awarded in 2006 to a *pitaya* Cooperative Ham Minh followed by several other farms in 2007. Following this achievement, the Australian's AusAID project funded the Vietnamese dragon fruit industry to collaborate with USA project to assist their farmers implementing GAP with SOFRI playing the major role. The followings are some of the outcomes of the above projects:

i) Presentation of Field farmers' benchmarking survey result to SOFRI personnel, packers, farmers, MARD and DARD personnel of Binh Thuan in 2007.
ii) Training of the pilot project members (packers/exporters and farmers) and development of fruit quality manuals for compliance towards British Retailers Consortium: Global Standard – Food (BRC) and EUROGAP.
iii) The national personnel capacity building among the project members has developed a high level practical GAP proficiency ensuring subsequent transfer of this model to other smallholders.
iv) The certified *pitaya* products have already reached European markets; meanwhile, the US market is ready to import pitaya products after radiation scan.
v) GAP was implemented in other *pitaya* production areas namely, Long An, Tiengiang and Binhthuan provinces, respectively (Hoa, N.V. et. al., 2008)

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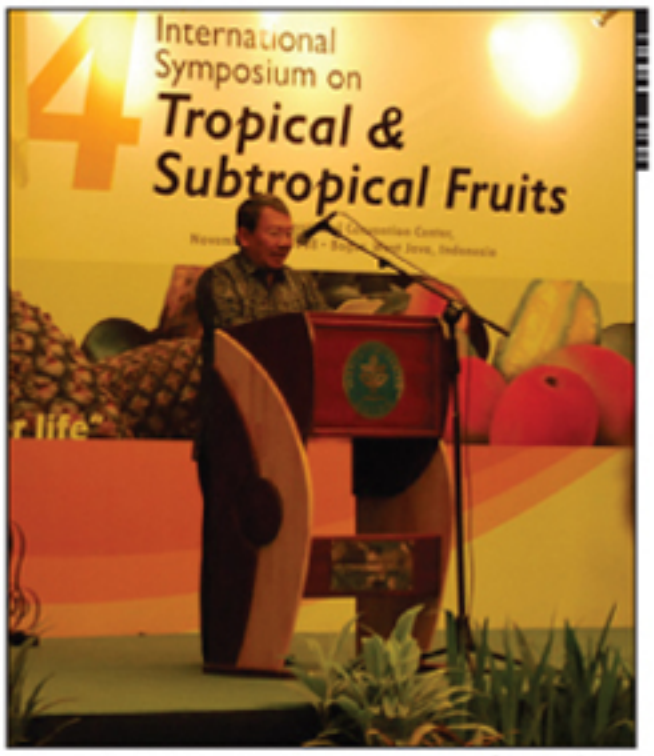
4 th International Symposium on Tropical and Subtropical Fruits, Bogor, West Java, Indonesia

The 4th International Symposium on Tropical and Subtropical Fruits organized by the International Society for Horticultural Sciences, Ministry of Agriculture, Republic of Indonesia, Bogor Agricultural University, Ministry of Research and Technology, Republic of Indonesia and the Indonesian Horticultural Society was held at Agriculture Institute, Bogor, West Java, Indonesia, from 3 - 7 November 2008.

The four day event participated by more than 200 participants from 28 countries deliberated topics related to breeding, pest and disease management, agronomy, post harvest, processing technology, food safety, production technology, physiology and marketing and economics. Besides, there was also a poster session highlighting R&D in tropical fruits whilst on the 3rd day of the event, a visit to the 264 hectare *Mekarsari Fruit Garden* (the world's biggest tropical fruit garden) was organized for the participants. The fruit garden boasts 100,000 trees, representing 78 families, 400 species and 1437 varieties. It is in fact, a center for R&D, conservation, education, reforestation and recreation. A fruit exhibition, which showcased tropical fruits from the different provinces in Indonesia was also held at the Convention center.



Dr. Ir. Anton Apriyantono Minister of Agriculture, Indonesia delivering his opening address.

Fruit display at fruit exhibition which highlighted fruit and processed fruit products from all provinces in Indonesia.

At the symposium, TFNet was represented by its CEO, Technical Officer and Project Officer. The TFNet CEO delivered an oral presentation on 'Trends in Production and Trade of Tropical Fruits in ASEAN countries' while TFNet's Technical Officer presented a paper on 'Plant Variety Protection Testing in Asian countries'.

Participants of the symposium during the field visit to Mekarsari Fruit Garden.

Malaysia, Agriculture, Horticulture and Agro-tourism Exhibition 2008 (MAHA 2008)

Malaysia's foremost agricultural event the Malaysian Agriculture, Horticulture and Agro-tourism Exhibition (MAHA 2008) was held on 11 – 23 August 2008, at the Malaysian Agicultural Exposition and Promotion grounds in Serdang, Selangor. As in the past, the biennial event was organised by the Federal Agricultural Marketing Authority (FAMA) and hosted by the Ministry of Agriculture and Agrobased Industry. It was officially declared open by by the Malaysian Prime Minister, H.E. Dato' Seri Abdullah bin Ahmad Badawi on 11 August 2009.

The objective of the exposition was to highlight and promote the latest agricultural technologies and products by local and foreign agencies, companies and entrepreneurs. MAHA 2008 was successful in registering record sales, increased total number of exhibitors and attracted more visitors; which earned it the recognition of the largest exhibition in Malaysia by the Malaysian Book of Records,

There were a total of 1179 exhibitors comprising of companies, small and medium size entrepreneurs, government agencies, countries and international companies, displaying products and services ranging from fertilizers and chemical products, organic products, food products, logistics, IT solutions and services. The different States in Malaysia also highlighted their agricultural development and promoted products in their distinct traditional 'houses'. TFNet also had a promotional booth in the international section of the exhibition, together with member - SPAT, (Sentra Pengembangan Agribises Terpadu) of East Java, Indonesia.

The exposition attracted over 1.2 million visitors.

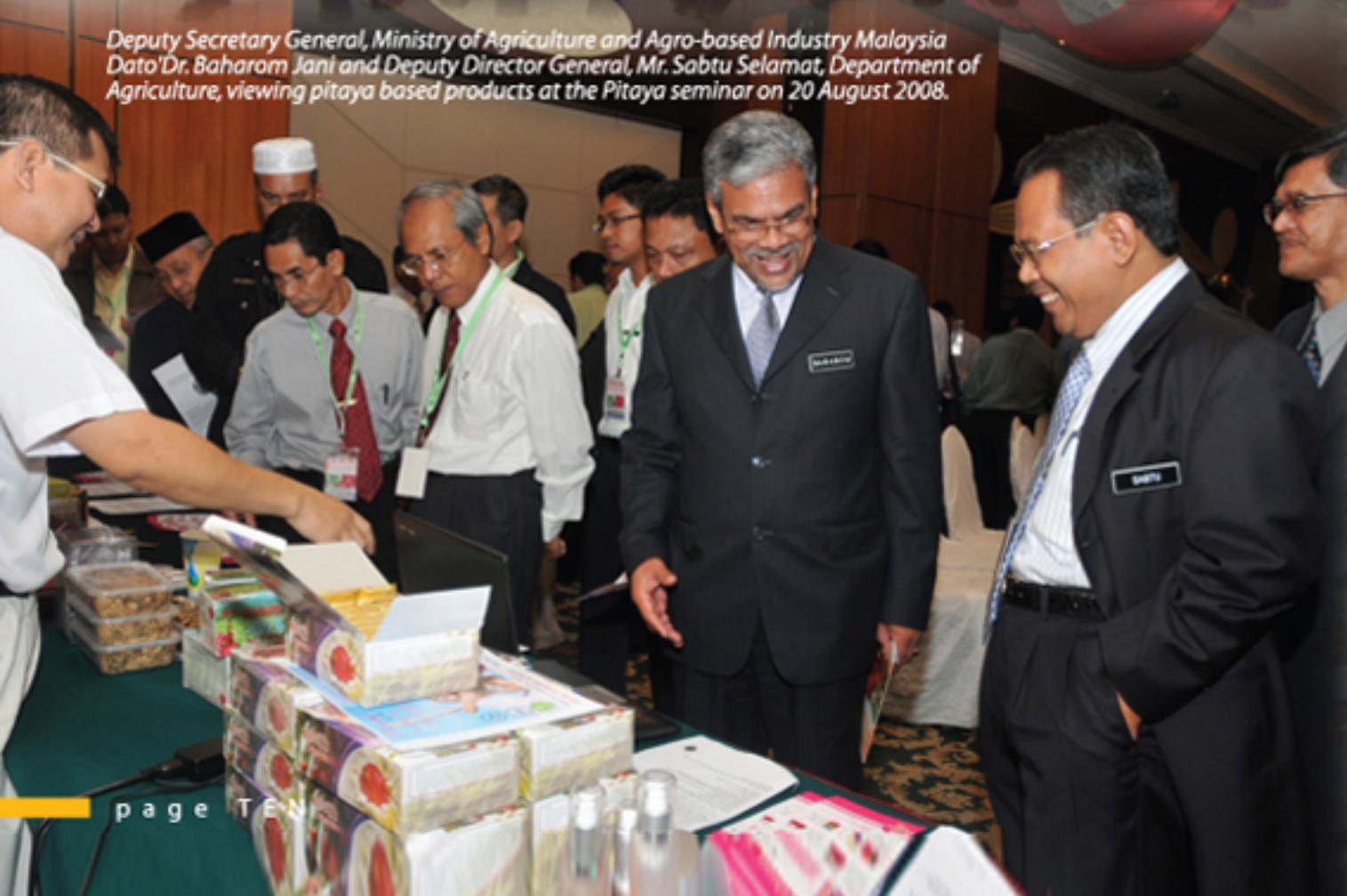
Squared honey dew exhibited at MAHA2008.

Staffs of TFNet on duty at MAHA 2008.

TFNet's Information Officer presenting a token of appreciation to SPAT's representative.

Group photo of participants with the officers of SPAT Centre.

Participants tasting the "Rome Beauty" apples while being observed by the orchard's owner.



Deputy Secretary General, Ministry of Agriculture and Agro-based Industry Malaysia Dato'Dr. Baharom Jani and Deputy Director General, Mr. Sabtu Selamat, Department of Agriculture, viewing pitaya based products at the Pitaya seminar on 20 August 2008.

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to be pa

TFNet CEO, Director General of MARDI and CWG Managing Director signing MOU on collaboration to produce vegetable and melon seeds.

TFNet Project Officer visit to SIAL.

Frozen food demonstration.

Samples of melon varieties displayed during the TFNet / MARDI/CWG, MOU signing ceremony.

ood products waiting cked at SPAT Centre.

Participants in the 2nd National Symposium of Tropical and Subtropical Fruits, Fuzhou, Fujian, China 21 - 22 September 2008.

Study tour for entrepreneurial farmers from Department of Agriculture (DOA), Malaysia to agricultural projects in East Java, Indonesia

Two study visits were organised for the Department of Agriculture Malaysia by TFNet and SPAT (Integrated Agriculture Extension Center) of East Java, Indonesia. The participants comprised of winners of various competitions for entrepreneurs,farmers and extension officers. The first visit comprising of 18 participants, which was held on 23 – 29 November 2008, focused on commercial agricultural production projects. The second study visit comprising 18 participants, which was held from 10 November – 4 December focused on food and fruit processing.

Pineapples intercropped with teak. (tall trees in the background) at Ngancar,Karangsari.

The first group of participants visited the following agricultural projects on 23-29th November 2008:

1. Pineapple Plantation in Ngancar, Kediri,
2. Starfruits Collecting Center located at Karangsari, Blitar,
3. Apple Plantation at Bumiaji, Batu,
4. Reserch center for citrus and sub-tropical fruits at Balitjestro, Batu,
5. SRI (System of Rice Intensification), PPK Sampoerna,
6. Lowland Onion Farm and Market, Sumner Bulu, Probolinggo,
7. "Arumanis" Mango Packing House at Besuk, Probolinggo and
8. "Sweet Banana" Farm and Packing House at Senduru, Lumanjang.

Postharvest handling and packaging of "sweet banana" at Senduru, Lumanjang.

The objectives of the study tour by the first group of participants were:

1. To have a closer look at the production of organic pineapple inter-planted with cash crops and forest timber (local teak). The purpose of the visit is also to encourage interaction of the participants with the pineapple growers, to gain relevant information and current knowledge in pineapple production.
2. To observe farm practices and to interact with the head of Karangsari's Carambola Collection Center, Blitar Indonesia and the operators of "sweet banana" packing house at Senduru, Lumanjang regarding postharvest handling, grading and packaging of carambola (Averrhoa carambola) and banana (Musa sp.), repectively, for local and city markets in Indonesia.
3. To understand the organizational capacity of "Arumanis" collecting and packaging center at Besuk, Probolinggo. The center is involved in sorting, grading, packaging and postharvest management of mango for the domestic market and also Singapore market.
4. To observe farm practices and husbandry in apple (Malus domestica) orchards at Bumiaji, Batu, Indonesia besides interacting with the local apple growers on the ground.
5. To visit the Research center on citrus and sub-tropical fruits at Balitjestro, Batu, Indonesia and to interact with the researchers on the production of pathogen-free citrus planting materials and also to view on-going research activities on citrus there.
6. To understand and to seek knowledge on the various research activities conducted at SRI (System of Rice Intensification) PPK Sampoerna and also to observe the management of lowland red onion production in Sumner Bulu, Probolinggo Indonesia.
7. To learn about the technical aspects and benefits of organic fertilizers as well as well as the process to produce them commercially, a visit to the organic fertilizer factory at SPAT, Malang.

Starfruits Collecting Center at Blitar.

The 2nd study tour on fruit and food processing, involving mainly entrepreneurs in the agro-based projects, was organised from 30 November to 4th December 2008.

The participants visited the following places:

1. Food manufacturing and processing industries located in Malang, Kediri, Batu, Gempol, Sidoarjo and Surabaya. The places visited are Sweet Potatoes Pasta "Mitra Arjuna", Apple Farm, "Pendem" Potato Chip production factory, 'Tempe' Chip production factory, Frozen Food factory and Prawn Crackers production factory.
2. Food processing and packaging at Integrated Agriculture Extension Centre (SPAT), Malang. Participants attended one day workshop conducted by SPAT officers at this center. During the workshop, all participants were exposed to vacuum-fried technology, and 'hand-on' practical of making products from sweet potato and tumeric.

The objectives of this study tour were as follows:

1. To expose the participants to the various techniques involved in the downstream processing of value-added food products from agro-based materials.
2. To expose the participants to the various techniques of food packaging and marketing some of the finished products.
3. To access and gain knowledge on the creativity of many vacuum-fried and frozen food products made from easily available raw materials such as sweet potatoes, ordinary potatoes, carrots and sea products.
4. To establish friendship networking relationships between entrepreneurs from both Indonesia and Malaysia..

Sweet starfruit (800-900 g/fruit approx.) of Karangsari, Blitar.

Besides, they were also exposed to some of the local ideas in packaging and packing techniques, agronomic practices involved in the production of "sweet banana" and "Arumanis" mango, production of lowland "red'onion, rice cultivation at SRI (System of Rice Intensification) and other processing techniques of agro-based food products for local markets as well as for export. These study visits have given the participants new ideas and knowledge, some of which can be adopted in their current production operations at home.

Generally, the two study visits succeeded in achieving many of the intended objectives. The participants had valuable opportunity to interact and establish friendship with the local farmers, fruit growers, fruit packers, food processors and manufacturers and fruit exporters, etc. and gained knowledge on the production, postharvest handling, packaging and processing of fruits and fruit products.

Participants with the owner of the apple orchard at Bumiaji, Batu.

MARDI – TFNet – GWG Collaborative Research on Breeding and Production of Horticulture Seeds (2008 – 2010)

A Memorandum of Agreement between the 3 parties namely Malaysian Agricultural Research and Development Institute (MARDI), International Tropical Fruits Network (TFNet) and Green World Genetics Sendirian Berhad (GWG) was signed on 21st August 2008. This collaborative R & D project is for a period of two years (1st June 2008 – 31st May 2010). The project objectives are;

a) To develop and evaluate new varieties of melon / watermelon adaptable to tropical conditions and meet the consumer preferences.

b) To develop and evaluate new vegetables (chilli, cucumber, pumpkin and long bean) varieties.

c) To develop and evaluate tropical hybrid sweet corn varieties for fresh and canning purposes.

d) To identify efficient management techniques of producing quality seeds of melon/watermelon, chilli, cucumber, pumpkin, long bean and sweet corn.

e) Capacity building of young researchers in breeding of horticultural crops.

It is envisaged that this public-private sector partnership would enhance the commercialization of new technology for the benefit of fruit and vegetable growers.

APO Study Mission on Export Promotion and Market Access for Processed Agri-food Products to France

By Chua Piak Chwee
Project Officer, TFNet

Rungis International Market - Fruits and Vegetable Section.

SMEs in developing countries in Asia produce a wide range of processed agri-food products with vast potential in global markets. However, that potential is not fully exploited by SMEs due to their limited capacity to promote their products in major markets. The *Asian Productivity Organisation (APO)*, in line with its goal of enhancing the competitiveness of SMEs, conducted a *Study Mission on Export Promotion and Market Access for Processed Agri-food Products* to France from 20 – 24 October 2008.

Fifteen participants from the Republic of China, India, Indonesia, Islamic Republic of Iran, Republic of Korea, Malaysia, Nepal, Pakistan, Philippines and Thailand participated in the five-day mission. The Project Officer from International Tropical Fruits Network (TFNet) was invited by APO to participate in the mission.

The Study Mission provided the participants the opportunity to study the trends and developments in importation, wholesaling and retailing of processed agri-food products in France and other major markets in the European Union (EU). The participants also explored opportunities for exports of processed agri-food products through networking and dialogues with importers and visits to companies, wholesale and retail markets for agri-food products.

Canned Agri-food Products from Asian Countries in Ethnic Supermarket, China Town Paris.

The Study Mission attended a series of discussion sessions covering topics, including:

i. Key drivers of food products markets in the EU: Trends, Opportunities and Challenges
ii. Relevant rules and regulations on imports of processed food products in France and EU
iii. Marketing, key players and the distribution system of ethnic food products in agri-food market in France and EU
iv. Knowledge and good management of customs border inspection proceedings to secure access to the European market
v. International Food Safety Standards Certification

The participants visited the world's largest food industry show, *Le Salon International de l'Agroalimentaire (SIAL) 2008 Food Exposition in Paris*. More than 140,000 visitors and 5,300 exhibitors attend and participate in this biennial event for food industry professionals.

The mission participants also visited the *Rungis International Market* from 2.00 am to 6.00 am to observe how wholesale transactions are conducted. This market has an annual turnover of more than €733 billion and is the biggest fresh produce market in the world. An official of the Federation of Enterprises and Distributors briefed the mission on the requirements of its 26,850 member stores, which must be certified for International Food Safety standards.

The participants congratulated APO for the successful organisation of the study mission and agreed that they had better knowledge of the food market structure, import procedures, and regulatory standards in France.

Visit to Rungis International Market – Fruits and Vegetable Section.

TFNet CEO meets with Ministry of Agriculture China official

TFNet CEO and Technical Officer visited Kunming, Yunnan Province and Fuzhou, Fujian Province, China from 17 - 21 September 2008.

In Kunming, Dr. Izham met with Mdm. Ma Shuping from the Ministry of Agriculture, Beijing, China. The objective of the visit was to discuss possible areas of collaboration related to programs and events that pertain to the tropical fruit industry, which can be carried out in China, during the period of 2009 to 2010. Dr. Izham first briefed Ms Ma on the activities of TFNet before proceeding to a discussion on future cooperation and the organising of international events in the country. It was agreed that TFNet will jointly organise a workshop and a main event in China before 2010. China is a country member of TFNet and its representative holds the Vice Chairman portfolio in TFNet's Board of Trustees.

The possibility of offering a post in the TFNet secretariat to China was also discussed. TFNet will formally invite the Ministry of Agriculture China to respond to this offer.

In Fuzhou, Fujian province, the TFNet CEO presented a paper entitled 'Global production, market trend, trade, issues and challenges in the tropical fruit industry' at the 2nd Chinese National Tropical Fruit Symposium. The symposium, which was held from 21 – 23 September 2008, was attended by about 500 participants from agricultural agencies from all the provinces in China, where 30 mainly research papers were presented.

TFNet CEO Dr. Izham briefing Mdm Ma Shuping and Dr. Yi Ganjun on the activities of TFNet.

Dr. Izham being introduced at the 2nd National Tropical Fruit Symposium.

Seminar on Piyata Production, Market and Export - Issues and Challenges

A seminar on 'pitaya (dragon fruit) production, market and export – issues and challenges' was held at the Palm Garden Resort Hotel, Putrajaya, Malaysia on 20 October 2008. It was jointly organised by TFNet (main organizer), Department of Agriculture Malaysia and the National Seed Association of Malaysia.

The objectives of the seminar were :

a. To enhance the technical knowledge of pitaya production to participants
b. To discuss on current issues faced by pitaya growers in Malaysia
c. To formulate action plans to mitigate problems related to production and marketing of pitaya
d. To establish a network of pitaya 'enthusiasts', extension agents, researchers exporters, growers and other stakeholders.

The seminar was attended by 180 participants, comprising of officials from government agencies, growers, exporters, processors and students. The breakdown of participants were 46 % were from government agencies under the Ministry of Agriculture and Agro-based Industry, 32 % private sector, 17 % from other government linked agencies and 4 % from universities.

A total of 6 papers were presented. Two papers, relating to the current scenario of the crop and disease management were presented by the Department of Agriculture. The Pitaya Growers association and Universiti Putra Malaysia (UPM) each delivered presentations on the issues faced by pitaya growers and color maturity index of the fruit, respectively. Two other papers on the current status of pitaya growing in Vietnam and the research focus and development of Good Agricultural Practive (GAP) were presented by two guest speakers from Vietnam. The speakers of the seminar were :

1. Mr. Cheah Lee Shen – Department of Agriculture, Malaysia
   'Status of pitaya cultivation in Malaysia'

2. Mr. Shih – Pitaya Growers Association of Malaysia
   'Issues and constraints faced by pitaya growers'

3. Ms. Tran Thanh Phong, Department of Agriculture, Ho Chi Minh City, Vietnam
   'Production and market for pitaya – the Vietnam experience'

4. Dr. Phebe Ding – Universiti Putra Malaysia (UPM)
   'Maturity indices and related quality characteristics of pitaya'

5. Mr. Ahmad Kamil – Department of Agriculture, Malaysia
   'Pest and disease management of pitaya'

6. Dr. Nguyen Van Hoa – Southern Fruit Research Institute, Tien Giang, Vietnam
   'Current research activities and the development of good agricultural practice (GAP) for pitaya in Vietnam.'

The CEO of TFNet together with the Asst. Secretary General, Ministry of Agriculture, Malaysia (5th from right) and Deputer Director General (4th from right) with speakers of the seminar.

After the oral presentations, a panel discussion was held with the TFNet CEO chairing the session comprising of the two speakers from Vietnam, and representatives each from DOA, FAMA, Pitaya Growers Association and UPM.

Seminar participants listening intently to the speakers.

The pitaya growers in Malaysia are faced with serious disease problems (caused by bacteria) that need to be addressed immediately. It is proposed that the Agriculture Ministry look into the possibility of prioritizing disease prevention and management for pitaya as part of their research and technology development program on fruits..

Yields for pitaya have not been consistent. Research in this area needs to be looked into, including the use of nocturnal illumination for promoting flowering and extend the fruiting period of the plants.

The Agricultural Ministry is also requested to look into the promotion and potential marketing of the red variety of the fruit overseas. This will include the development for the protocols of Good Agricultural Practice of pitaya. For this purpose, perhaps the Ministry can consider listing pitaya as one of the priority crops to be developed.

Downstream activities involving the processing of pitaya, have been developed mainly by the private sector. Participants in the seminar believe that the Agriculture Ministry should play a role not only in the development of processed products for pitaya, but also in the nutrition aspects, which would include the formulation of safety standards.

A concerted effort by the various government agencies, universities and the private sector would be favorable to tackle the various constraints and inadequacies that now beset pitaya production and development in Malaysia. International tropical fruit network (TFNet) is of the view that pitaya is one of the potential tropical fruit type that can be developed, and would support any effort by the Ministry of Agriculture and Agro-based Industry to improve the present status of the fruit.

The panel discussion which deliberating current issues related to the pitaya industry.

Asian Seed Congress (ASC) 2008 | 9 – 13 November 2008, Hyderabad, India

The CEO of TFNet attended the above congress held at the Hyderabad International Convention Centre. ASC 2008 was organized by the Asia & Pacific Seed Association (APSA) and National Seed Association of India (NSAI). ASC 2008 in convened annually to create a technical conference and exhibition for the Asia Pacific region and the entire global seed industry to address development and policy issues. The event brings together government officials, decision-makers, professionals, academicians, scientists and researchers. ASC 2008 managed to attract 833 delegates from 41 countries.

Four technical papers were presented as follows;

i) The Indian Seed Industry
   - Dr. Paresh Verma, Research Director, Shriram Bioseed Genetics India Ltd.
ii) Transgenic crops and food security in India.
   - Dr. P. Ananda Kumar, Project Director, National Regional Council for Plant Biotechnology, India
iii) The growing role of the government sector in the development of the Asia Pacific Seed Industry.
   - Dr. Mohammed Selamat Madom, Head, Planting Material, Seed and Livestock Breed Production Unit, MARDI, Malaysia
iv) Emerging and re-emerging vegetable pests and diseases in Asia.
   - Dr. Nanita T. Lalap-Opina, Associate Professor, Institute of Plant Breeding, University of Philippines, Los Banos, Philippines

There were also exhibitions, trading, special interest group meetings and field visits.

Companies visited include:

i) J. K. Agri Genetics Ltd.
ii) Namdhari Seeds Pvt. Ltd.
iii) East West Seeds India Pvt. Ltd.

INTERNATIONAL TROPICAL FRUITS NETWORK (TFNet)
Box 334, UPM Post Office, 43400 Serdang, Selangor, Malaysia
Tel : (603) 8941 6589 / 8941 5876 Fax : (603) 8941 6591
E-mail : info@itfnet.org
Website : http://www.itfnet.org

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From page 20

The NuVal system utilizes references and values from the Institute of Medicine's Dietary Reference Intakes and Dietary Guidelines for Americans.

The higher the score the better the nutrition.. Some examples of NuVal Scores are :

Fruit	Score	Vegetable	Score
Apricots	100	Asparagus	100
Blueberries	100	Beans	100
Orange	100	Broccoli	100
Grapefruit	99	Cauliflower	100
Pineapple	99	Cabbage	100
Apples	96	Lettuce	100
Cantalope	93	Spinach	100
Mango	93	Turnip	100
Bananas	91	Carrots	99
Honeydew melon	91	Celery	96
Pomegranate	91	Tomatoes	96
Avocado	86	Cucumber	93

Alongside, termperate and subtropical fruits, tropical fruits also have favorable scores in the NuVal system and this can directly promote its nutritional benefits. Top of the list is the popular pineapple which has a score of 99, while mango scores 93. The most popular banana scores 91 with avocado at 86. All these are considered as being highly nutritious.

The NuVal Nutritional Scoring System has just been introduced in Septermber 2008 and by 2009 it is expected that some of the leading grocery chains will be making use of this system.

It is not a rule that consumers should only buy products with the highest NuVal score, however, it does inform the consumer of the nutrition contents so that they can easily and quickly decide with confidence, whether to purchase the product or not.

Reference: www.nuval.com

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Yes, I would like to purchase the selected item(s) as below : *(Please tick ✓)*

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☐ Strategy & Action Plan for the Development of the Tropical Fruit Industry in Fiji	USD 10
☐ Elements of Strategy & Action Plan for the Development of the Tropical Fruit Industry in Bangladesh	USD 10
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High Scores for Tropical Fruit in the NuVaL Nutritional Scoring System

By Yacob Ahmad
Technical Officer
TFNet

Hypermarkets and supermarkets are now ubiquitous in most cities of the world, where consumers can purchase quality and safe fresh or processed products. To ensure fresh products are clean and safe for consumers, producers are now adopting quality assurance and food safety standards in their production methods. An example is the widely accepted Good Agriculture Practice, which recommends steps and actions along the production to post harvest operations to produce quality and safe produce. The recent developments regarding product traceability, is another tool to ensure that products can be traced to the source where they are being produced. For retailers, all these efforts are to ensure consumer confidence, while producers too, will have better market access if they incorporate quality assurance and food safety in their production processes. Besides quality and food safety, consumers are also increasingly becoming concerned about the beneficial and nutritional aspects of food they purchase.

Banana – score =91.

Mango score = 93.

With the increasing consciousness in health and well being, consumers prefer food, that are beneficial and nutritious that contains fibers, vitamins, antioxidants and minerals.
Recently, a system to rate food according to its nutrition content was established in the USA after a 2 year research by a team of recognized nutrition and medical experts, from the Yale-Griffin Prevention Research Center, headed by Dr. David Katz. The team developed a system called the NuVal Nutritional Scoring System. The system is based on the Overall Nutritional Quality Index (INQI) algorithm, developed by the team, which converts complex nutritional information into a simple, understandable rating score.

Basically, the NuVal Nutritional Scoring System works by having :

a. the numerator, which are nutrients with generally favourable effects on health (the higher the number the better)
b. the denominator, which are nutrients with generally unfavorable effects on health (the lower the number, the better)
c. dividing the numerator by denominator to give a score which ranges from 1 – 100 (the higher the score, the better)
d. In addition, the system also looks at the quality of quality and density of macronutrients. (the higher the quality the better the score)

The nutrients and nutritional factors used as 'numerators' in determining the NuVal score are fiber, Foliate, Vitamin A, Vitamin C, Vitamin D, Vitamin E, Vitamin B12, Vitamin B6, Potassium, Calcium, Omega-3 fatty acids, Total carotenoids, total bioflavanoids, Magnesium and Iron.

The nutrients used as denominators or unfavorable to health are saturated fats, trans fat, sodium, sugar and cholesterol.
Included are additional macronutrients quality such as protein quality, fat quality glycemic load and energy density.

Pineapple score = 99.

Continued page 19