

# *Tropical and Subtropical Fruits Newsletter*



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## *Foreword*

There is a growing interest in all areas of tropical and subtropical fruit (production, post harvest and marketing). In the last two decades, production of tropical and subtropical fruits has markedly increased in all the Asian countries, Australia, New Zealand, South Africa, Japan some latin-american and African countries, where they make a significant contribution in global trade. The Section on Tropical and Subtropical Fruits of the International Society of Horticultural Science (ISHS) is playing a key role in promoting the activity by organizing several International Symposia and Workshops in different countries. The working group members of the ISHS Section on Tropical and Subtropical Fruits decided during IHC 2006 at Seoul, Korea to develop an electronic quarterly NEWS LETTER on Tropical and Subtropical Fruits. We have tried to compile some the available information for the first quarter of 2007 and would be grateful to have your suggestions for further improvement. We also request you to provide us inputs regularly for the Newsletter that must be considered as a dialog platform open to our R&D community. We are waiting for your contributions particularly for the item “News from the countries” .

Thanks in advance.

*Jacky Ganry, Chair*

*Sisir Mitra, Vice-Chair*

## *News from the countries*

### **Fiji exports breadfruit**

From: Fiji Times 23 October 2006

Breadfruit export increased by 21 per cent last year compared to 2004 and exporters anticipate more increases with an increase in demand. Statistics from the Agriculture Ministry's quarantine division said 17 tonnes of breadfruit was exported last year, compared to 14 tonnes in 2004.



National Exporters director Sunny Singh said there was a big demand for breadfruit overseas. He said his company exported uto dina to New Zealand and USA at \$2.80 to \$3 a kilogram. "Uto dina is preferred because of its taste. Farmers should plant breadfruit because of the demand," said Mr Singh. Director of Mahens Export Anjinesh Kumar said breadfruit export was booming and during fruiting season he aimed to export two tonnes a week to Auckland. Production Manager for Food Processors Fiji Limited Dron Prasad said his company exported canned breadfruit at \$47 a carton of 24 cans to NZ, Australia and the US. Farmers who want to supply fresh breadfruit to exporters need to register their farm under the bi-lateral quarantine agreement to meet the export requirements.

*From Hortivar desk ([hortivar@fao.org](mailto:hortivar@fao.org))*

### **Mango: The Next Big Product Of Ghana**

*From Daily Graphics, Ghana, 2/21/2006*

Mango cultivation represents one area within the horticultural sector which, if well developed and provided with the necessary logistics and support, can easily become a major foreign exchange earner.

This is because the country has all the natural conditions that can position the produce as a top export product.

According to experts in the industry, Ghana is one of the few countries in the world with two mango seasons, and with the right practices, both seasons can yield fruits for the international mango market.

In 2004, the European Union imported 170,000 metric tonnes valued at more than \$200 million. Out of this, Ghana registered only 220 metric tonnes representing one per cent of the total volume of imports of the product.

Although Ghana has been exporting mangoes over the past 15 years, the country's exports are very insignificant in the international market, as the country is not listed in the first 40 exporters of mangoes in spite of the fact that the country has a comparative advantage over the other exporters of mango.

Six varieties of mangoes are cultivated in the country. They are Kent, Keitt, Haden, Tommy Atkins, Palmer and Zill. The southern belt of the country is the main mango production area, with about 457 farmers and a total of 5,600 acres under cultivation.

According to experts, 85 per cent of the fruits under cultivation are of the Keitt variety.

The country's products have, however, encountered some problems such as weak producer organisations, low productivity resulting in high cost of production, inadequate control of insect pests and diseases, poor post-harvest management relating to handling, grading and packaging, transport and storage, among other problems.

Since the late 1980s a number of interventions have been made to develop the supply base of mango production in the country. With the support of the United Nations Development Programme (UNDP), the Crop Research Institute and Kethab Seed Company produced 9,244 mango seedlings, which were distributed to farmers in Dangme West and the Afram Plains. This covered a total land area of about 230 acres.

In 2002, the Ghana Export Promotion Council with the support of the UNDP developed another project known as "Specialised Support to Supply Base Expansion of Mangoes" in which 13,000 mango seedlings were produced and distributed to 90 farmers in the Dangme West District.

Before that project, the Ministry of Food and Agriculture had established three mango nurseries in Dodowa, Kintampo and Ejura, while the University Farms at Kade also developed mango seedlings for the industry.

The major pioneers in the mango production and export industry are Farmex Ltd, Tacks Farms, John Lawrence Farms, Ukay Tropical Farms, Akramang Farms, Opintin Farms Mission Farms, Prudent Farms, Villawoe Farms, Gannat Farms and Caring Farms.

To position the country in the export of mangoes, the Federation of the Association of Ghanaian Exporters (FAGE) in collaboration with the National Horticultural Task Force, and sponsored by Trade and Investment Programme for a Competitive Export Economy

(TIPCEE) and the German Technical Co-operation (GTZ), will next month organise “Ghana Mango Week” on the theme, “Mango: The Next Big Product of Ghana”.

The event is meant to raise awareness that mangoes have the potential to be the next big horticultural export produce for the country, as well as a mango sourcing destination in fresh fruit and vegetable industry.

The week-long activity will address such issues as supply chain structure and production systems, marketing and processing, research and development, industry support, logistics and quality standards.

According to Mr Roland Aggor, an Export Development Officer at the Ghana Export Promotion Council (GEPC), with the many interventions it was expected that the country would ensure the development of the mango sector.

Mr Aggor said there was a strong recommendation for the expansion of the production base of mangoes for export and said the recent intervention includes, the mango mapping exercise undertaken by the Trade and Investment Programme for a Competitive Export Economy (TIPCEE).

Under this programme, the objective was to establish a database on current mango production and operation as a guide to interventions in the industry.

The Ministry of Food and Agriculture developed the Horticultural Export Industry Initiative (HEII) to help improve the country’s horticultural industry capacity to compete on the international market.

All these interventions were to propel the country’s mango sector to new heights and take advantage of the growing international market of mangoes.

TIPCEE is currently carrying out a number of activities to ensure quality fruits for the export market for this year’s harvest season.

These include the training of teams of mango scouts and harvesters, certification for Eurep GAP, training in agronomic practices for farmers and linkages to buyers.

Story By Boahene Asamoah

## *Global news*



### **From FAO :**

- **Hortivar:** Hortivar is the FAO’s database on performances of horticulture cultivars in relation to agro-ecological conditions, cultivation practices, the occurrence of pests and diseases and timing of the production. It covers six categories of

horticultural crops: fruits, vegetables, roots and tubers, ornamentals, mushrooms, herbs and condiments.

Hortivar is:

- A tool for easy and quick retrieval of information related to horticulture cultivars all over the world
- A standard methodology for data recording of cultivar trials
- A source for data analysis and extrapolation (GIS applications)
- A template for educational purposes in colleges and universities
- A lively interface between scientists and growers
- A tool for quick retrieval of information on seed sources

The database has two primary functions which are interdependent: data retrieval and data entry.

Access and use of the database is free of charge.

Data are retrieved by searching according to various parameters such as crop, species, cultivar, country, geographical references, pest resistance, eco-zone and production systems. Data registered in the database are site specific and therefore the database is geo-referenced.

Hortivar addresses the needs of producers, public and private sector, seed companies and horticultural research centres for information management related to horticultural crop cultivars in different agro-climatic environments and allows users to identify cultivars and cropping practices adapted to their specific requirements and environment. Hortivar is designed by the [Horticultural Crops Group](#), Crop and Grassland Service, Plant Production and Protection Division, FAO, Rome, Italy

Number of visits since April 2003: **377336**

### **- The WHO-FAO Initiative**

Nowadays, an increased attention is paid by the scientific community, but also by the whole society itself to the importance of the nutritional value of fruits and vegetables.

It is now recognized that a high consumption of fruits and vegetables can help to prevent several non communicable diseases such as cardiovascular diseases, the diabetes type 2 and some cancer.

It acts now of a major subject of concern for many societies, including to a large extend those from the developing countries.

The phenomenon is often described as true epidemic playing at planetary level and leading to an increased adult mortality.

**The WHO-FAO Initiative** on the promotion of fruits and vegetables is a very concrete illustration of this awakening

This initiative was initiated in Rio de Janeiro in November 2003, then concretized in September 2004 during the first WHO-FAO workshop on fruits and vegetables for health in the WHO Centre in Kobe, Japan. It led to an operational framework of action to apply to each country of the planet.

Workshops are now organized by WHO and FAO to carry out this communication task.

Thus in November 2005 the Lisbon workshop joined together the whole of the Portuguese-speaking countries individually represented by an Agriculture-Health tandem.

Another more restricted workshop took place in Honduras by September 2006, joining together several countries of Latin America. Two other workshops are planned very soon, one during the ISHS Congress in Seoul by August 2006 devoted to Eastern Asian countries and the other one by early 2007 in Yaounde, Cameroun which will be particularly devoted to French-speaking sub-sahara African countries.

Another concrete illustration was the launching of IFAVA, the international Alliance for fruits and vegetables, in September 2005 in Durban, South Africa, gathering about fifteen countries already involved in the promotion of fruits and vegetables for health at the national level, such as the “5 a day” programmes.

Communication is clearly playing a major role in all these initiatives, as the health value alone will not be enough to stimulate consumption and it will be necessary to pay special attention that other components influencing consumer’s purchase act like the price, the availability, the attractivity, the “easy-to-use” status,... Huge fields are thus opened for innovation.



A new milestone in the world of horticultural research was set in Montpellier, France, by the launch of the Global Horticulture Initiative (GHI), on March 22-24<sup>th</sup>.

GHI was initiated by AVRDC – The World Vegetable Center and driven with the strong support of the Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) and the International Society for Horticultural Sciences (ISHS).

The launch of this international initiative brought together funding agencies from industrial countries, and researchers and stakeholders from all over the world. More than seventy participants from twenty three countries joined this important event.

Horticulture is now recognized as a driving force addressing major challenges of the developing world, such as nutrition, poverty alleviation and income generation, in the line of the Millenium Development Goals.

Four major pillars are considered as strongly relevant to sustainable development for the next decades:

- Tropical Horticulture for food and health: food security, food safety and impact on health of fruits and vegetables consumption; health value of tropical fruits and vegetables, and impact of technical practices on this effective value.
- Management of sanitary and environmental risks linked to Tropical Horticulture: impact on environment and food safety of cropping systems, conditions for access to markets, emerging and invasive pests and diseases.
- City food and service supply: horticulture as a link between urban and rural areas, and more than a food provider.
- Improving, preserving and sharing the high added value of tropical horticultural products: income and employment generation, improved wealth and well-being.

In this respect, the initiative is expected to have a substantial impact on the health and prosperity of millions in Africa and other developing countries.

**For further information:**

<http://www.globalhort.org>



**- From the CGIAR :**

The Annual General Meeting of the CGIAR, the Consutative Group on International Agricultural Research in Washington was again the occasion to measure the growing interest of the international scientific community for fruits and vegetables.

Several strong points marked this demonstration of which the presentation of the horticultural world initiative, GHI. For ICRAF, the World Agroforestry Centre, and the CIFOR, the Center for International Forestry Research, fruits are becoming a central concern as expressed during a workshop on Tree Commodity Value Chains.

ICARDA, the International Center for Agricultural Research in the Dry Areas, and ICRISAT, the International Crops Research Institute for the Semi-Arid Tropics, wish to launch actions on mediterranean and subtropical fruits adapted to arid regions;

Under-utilized fruits are honored when ICUC, the International Center on Under-utilized Crops and the Global Facilitation Unit on Under-utilized Crops decide to join their efforts under the umbrella of Bioversity International (ex IPGRI).

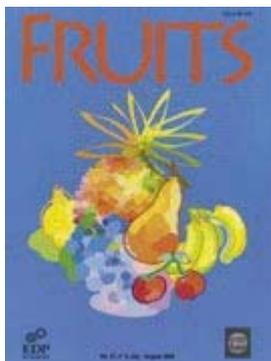
In echo with the interest which is carried to them, fruits and vegetables are proposed to appear among the priorities of future challenges programmes, as High Value Crops

The very active and visible presence of the International Society for Horticultural Science (ISHS), represented at the highest level made only confirm and reinforce the interest carried to the horticultural productions.

It is increasingly clear that there are strong and numerous opportunities for actions at international level around tropical and subtropical fruits as sources of added value, but also of improvement of the diet and well-being in developing countries

## *Publications*

- Scientific journals : FRUITS



The journal *Fruits* was created in 1945 by one of the institutes of the present-day Cirad in response to a need of the time to communicate agronomic research results on tropical and subtropical fruit production.

Published and managed by the founding institute until 1995, it was then co-edited with Elsevier France from 1995 to 2000, and then with EDP Sciences from 2001.

*Fruits* is a thematic journal that covers the specific field of horticulture; it thus deals with an area currently of considerable strategic interest as evidenced by the increasing attention given to fruits and vegetables by the international community due to their nutritional richness and position as high value-added products.

Thus a number of international initiatives have been taken in this area, including the launch of a world initiative by WHO-FAO in 2004 to promote fruits and vegetables for health, the Global Horticulture Initiative (GHI) in 2006, and the prominent recognition of fruits and vegetables as a priority (3A) for the CGIAR as “High Value Crops” and a critical component in achieving the Millennium Development Goals.

Amongst the most pressing topics with which authors of the journal have concerned themselves since 2001 are: underutilised fruits (31 articles), emergent diseases of fruit crops and their control (22 articles), postharvest handling of fruits (18 articles), and the nutritional and organoleptic quality of fruits (12 articles).

In order to reinforce its international position, *Fruits* has benefited since 2005 from a partnership with the ISHS.

The editorial remit of the journal covers the results of scientific research as original articles and reviews, and is overseen by a scientific committee composed of a director and 28 other international scientists, mostly members of the ISHS, and validated by an open and internationally oriented peer-review committee. Each article is reviewed by two referees from the peer-review committee. “Technical notes” are included in some issues.

The journal covers all disciplines related to tropical, subtropical and temperate fruits defined botanically, so that those used as vegetables and condiments are included (e.g. tomato, cucumber and vanilla).

To increase its international audience, 60% to 70% of articles are published in English with the abstracts and key-words also in French and Spanish. Two features, *New Books* and *Forthcoming Meetings*, alert readers to newly published books likely to be of interest and to upcoming international scientific meetings dedicated to fruit production.

Since January 2006, each issue has featured a bilingual editorial (English and French) dealing with a topic of current interest, together with a feature titled *Read in Fruits 50 Years Ago*, designed to illustrate the links between past and present research themes.

The journal is principally oriented towards southern countries, which is in fact one of its distinguishing features, with a south-north ratio of 75:25 of published papers, of which 50% are from Africa. This results in the majority of authors belonging to teams without substantial financial resources and that frequently experience great difficulty in publishing in international journals (for reasons of language, international standards, structure, etc.), especially as Internet access remains difficult in some regions. Where necessary, *Fruits* assists these teams to edit their manuscripts according to international norms.

## *Meetings*

### **ISHS symposiums:**

**- Improving the performance of supply-chains in transitional economies  
Sofitel Plaza Hotel, Hanoi, Vietnam, 13-17 September 2007.**

It is widely believed that the many small producers in the developing countries face numerable problems in their efforts to transact with the global retail chains and food processors. Problems abound at every stage of the chain including production, harvesting, post-harvest handling, distribution and logistics and quality management. More recently, consumers, especially those in Europe and North America are becoming more concerned about the safety of the foods that they consume and the very manner in which this food has been produced. The growing demand for triple bottom line reporting now requires corporate enterprises to show responsibility for the shareholders, the environment and social equity.

However, in most developing countries concern for the environment and sustainable methods of production are often neglected because of farmers need to maximise income to meet household demands. Issues such as occupational health and safety, particularly towards the application of chemicals, potentially endanger not only the operator but also the environment. Various efforts to introduce quality management systems have often met resistance because farmers lack the knowledge and institutional support. Similarly, various efforts to empower farmers through the formation of agricultural cooperatives usually result in failure because of the inherent corruption and lack of sufficient and appropriate government support. At the micro-level, while many projects have attempted to improve the efficiency of the supply chain by an examination of the transactional costs involved, there is a growing recognition of the importance of interpersonal relationships and social capital.

As this symposium seeks to address the various means of improving the performance of supply chains in the transitional economies, we shall welcome papers that discuss any one or more than one of the following themes:

Power/dependence; Quality management systems; Trust and social capital;  
Consumer sovereignty;  
Market information systems; Supply chain management; Export market development; Food integrity and food safety; International competitive advantage; Development policy; Transport and logistics;  
Finance and infrastructure; Packaging and branding; Grower cooperatives and alliances; Good agricultural practice; Environmental stewardship;  
Post-harvest systems.

For more information, check

- **Others**

**1. Fifth China (Hainan) Litchi & Longan Exchange Fair**

General of scheme

From April 24<sup>th</sup> to 28<sup>th</sup> 2007, the global litchi and longan insiders will come together to Hainan of China to attend “The Fifth China (Hainan) Litchi & Longan Exchange Fair”, which is jointly organized by the four provinces, Guangdong, Guangxi, Fujian and Hainan, which are engaged in litchi and longan planting in China.

With a cultivated history of more than 2,000 years, China, the original place of litchi and longan in the world, is rich in varieties, containing about 220 litchi varieties and about 200 longan varieties. Being the largest consuming country in the world, China is the most attractive market for litchi and longan. About over 95% of the Chinese litchi and longan are consumed in China.

The Preparatory Committee Office is located in Hainan Litchi and Longan Association

Tele: 0086-898-65231000 65231099 0086-13907569319

Fax: 0086-898-65366018

Website: [www.zglzly.com](http://www.zglzly.com) (in Chinese, the English version will be opened up after advices-seeking)

Email: [hnlitchi@sohu.com](mailto:hnlitchi@sohu.com)

**Content of Conference**

**Flash**

The producing and marketing situation of litchi and longan in each country and in main planting area of China in 2006, and market estimation in 2007.(from professional organization, home and abroad)

**Special promotion meeting**(in planting places, home and abroad)

For example:

Australia special promotion meeting

South Africa special promotion meeting

Thailand special promotion meeting

Hainan province: the largest planting place of litchi and longan in Hainan---Haikou special promotion meeting

The most excellent variety of seedless litchi in the world---Chengmai special promotion meeting

Guangdong province: the largest planting place of litchi and longan in the world---Maoming special promotion meeting, Guangdong

The planting place of special litchi, Shuang Jian Yu He Bao---Yangjiang special promotion meeting, Guangdong

Guangxi province: the planting place of qualified litchi, Ji Zui li (chicken-beak litchi) and Xiang li(fragrant litchi)---Qinzhou special promotion meeting, Guangxi

Fujian province: the largest planting place of litchi and longan in Fujian---Zhangzhou special promotion meeting

Etc.

**Hot topic exchange**

Experts and wholesalers (include well-known supermarkets), home and abroad, will be invited to do spot research on the professional hot topics, and answer relative problems.

1. How could scattered and small-scale farmers enter international market?(from Australia Litchi Growers Association)
2. Whether the longan of Thailand and Vietnam is dumping into China mainland?(from Thailand and Vietnam)
3. “The developing program of main planting areas of litchi and longan in China from 2005 to 2010 ” of the Ministry of Agriculture, China (from Guangdong)
4. The Chinese domestic market analysis and marketing strategy of litchi and longan(from Guangxi)
5. The Chinese litchi and longan processing industry is awaited for further development, and how should the processed litchi and longan of Chinese origin explore overseas market?(from Fujian)

### **The selection of litchi and longan varieties of high-quality, excellent enterprises and individuals in China**

10 top high-quality varieties of litchi and longan, and 160 national excellent enterprises and individuals in China, such as “National Excellent Wholesalers of Litchi and Longan”, will be selected out after recommendation of each province and evaluation of the Preparatory Committee, and jointly awarded with certificate by four provinces.

### **Exhibition and Trading**

There are 8 special exhibition booths, 50 international exhibition booths and 400 domestic exhibition booths in all.

1. International special exhibition area
2. Four provinces special exhibition area
3. International exhibition area
4. Varieties of high-quality and industrial science and technology of Chinese litchi and longan on display
5. Sales exhibition of Chinese qualified materials for litchi and longan planting and producing
6. Chinese litchi and longan wholesalers (include well-known supermarkets) on display
7. Sales exhibition of Chinese large-scale growers and organizations of litchi and longan
8. Sales exhibition of Chinese litchi and longan processing enterprises and products
9. Exhibition area of other special agricultural products

### **Signing ceremony**

#### **Investigation**

During the conference period, the attendees will be organized to visit and investigate the main planting area of litchi, longan and other special agricultural products in Hainan. Currently, the cultivating area of litchi in Hainan is 33,330 hectares, with the annual output comes to 70,000 ton. At the same time, Hainan, not only boasts the earliest-matured litchi in China, but also enjoys the largest planting area of well-known litchi Fei Zi Xiao(Fay Zee Siu) in China.

Investigation sites are as follows,

1. one of the main original places of litchi in China, with a wild litchi grove which occupies an area of 2,000 hectares.
2. the planting place of litchi with seven colors and litchi with large size
3. the planting place of seedless litchi, the most excellent litchi variety in the world.

After the conference, the attendees could be organized to Guangdong, Guangxi, and Fujian to investigate litchi, longan, and other special agricultural products on the spot, depends on their own desire.

Time, place, scale, attendees, and exhibition arrangement

#### **Time and agenda**

The conference will be held from April 24<sup>th</sup> to 28<sup>th</sup> 2007, before litchi and longan of Hainan origin start to sell in large quantities, while other fruits in large quantities, which would facilitate the attendees investigate litchi, longan and other agricultural products of that very year. It will last 5 days, while 2 days are occupied to hold conference and exhibition, and the other 3 days to investigate litchi and longan in Hainan.

**Place:** Haikou Conference and Exhibition Center.

#### **Exhibit and attendees**

The attendees should be governments, enterprises and institutes, and individuals, which are engaged in the research, producing, processing, materials for planting and producing, logistics and marketing of litchi, longan, and other special agricultural products. It is estimated that there will be 1,500 attendees.

#### **Exhibition**

The exhibition halls cover an overall area of 12,000 square meters.

Special exhibition area: No.1 Hall covers an area of 2,200 square meters. Each province and country will use the united exhibition hall to deeply introduce their litchi and longan industry via samples, pictures, illustrations and video frequency, etc. Every special exhibition booth covers different area from 50 to 200 square meters.

Common exhibition area: standard exhibition booth (three sides, all 3m in length and 2.5m in height)

#### ***Conference propaganda***

There will be special conference information leaf, in both Chinese and English, on China Litchi and Longan Web, which is networked with other related websites, home and abroad, to introduce the concerning issue in detail.

Conference monograph will be issued, and Chinese litchi and longan industry will be introduced via exquisite pictures and Chinese-English bilingual illustration. It will cover the qualified varieties; excellent enterprises and individuals free of charge. The show on China Litchi and Longan Web will last one year since the date of enrolment. There will be a live show of the entire proceeding of this conference on China Litchi and Longan Web.

Media, home and abroad, will be invited to take part in propaganda.

#### **Organization**

The foreign representatives could contact Preparatory Committee directly, or participate in through the organization of local industry association or large-scale buyers (include well-known supermarkets).

#### **Schedule**

Advise-seeking letters will be sent out in late of Jan. 2007, and formal invitation letter will be sent out in the first part of Feb. 2007.

The replies to Invitation letter will be collected before April.10<sup>th</sup>, 2007.

#### **Charges and fees**

200/person, which covers meals, reference materials, conference, transportation, and interpreters from April 24<sup>th</sup> to April 25<sup>th</sup>. 500/person for investigation in Hainan, which covers board and lodging, transportation, conference, and interpreters from 26<sup>th</sup> to April 28<sup>th</sup>.

500 for one international standard exhibition booth which occupies an area of 9 square meters, and 300 for one special exhibition booth which occupies an area of 50 square meters. The work of exhibition booth designs and arranges can be implemented by attendees or commit to Preparatory Committee, but the attendees should pay the expense.

800 per 20 minutes for special promotion and exhibition.  
After the conference, the attendees could be organized to Guangdong, Guangxi and Fujian to investigate litchi, longan, and other special agricultural products on the spot, depends on their own desire. It will be taken 10 days for the investigation, and additional expense will be charged.  
You could choose part or all of the above-said events.

## **2. First International Symposium on Breadfruit Research and Development** **Nadi, Fiji, April 16-18, 2007**

### Background

Breadfruit (*Artocarpus altilis*) was domesticated in the Pacific and has nourished Pacific islanders for more than 3000 years. It is a key component of sustainable livelihoods throughout the Pacific and Caribbean Islands, where it has special cultural, dietary and economic importance. Breadfruit is also grown on a small scale in Latin America, Africa, and SE Asia. In the Pacific, where it is of greatest significance, it is considered an essential component of every meal in many countries. The starchy fruits can be prepared and eaten at all stages of development and at the mature stage are baked, roasted or boiled. Fruits can be used to prepare delicious appetizers, salads, soups, stews, casseroles, main dishes, breads, desserts, and more. The multipurpose trees also provide timber, medicine, insecticides, and are an integral part of home gardens and agroforestry systems. In addition to being an important traditional food crop, breadfruit is becoming an export commodity in Samoa and Fiji.

Though grown in close to 90 countries, breadfruit is still an underutilized crop in most areas, both with regard to its use for food security and for income generation. This is due to low prioritization both by governments and research institutes, and to a limited knowledge of the genetic diversity available and how best to use that diversity. In the Pacific, there has been some progress lately in trying to address this: there have been workshops on breadfruit processing and the Pacific Agricultural Plant Genetic Resources Network (PAPGREN) has developed a regional approach to genetic resources conservation. However, a more strategic and global approach is required. This First Breadfruit Symposium will review progress in breadfruit research, analyze needs and priorities, develop strategies for the conservation of breadfruit genetic resources, prioritize needed work in breadfruit research and development, particularly post-harvest handling and food product development, and explore new ways to use genetic diversity and improve breadfruit production. It will also stimulate international collaboration, information exchange and networking. Goal and objectives The symposium aims to increase awareness of the importance of breadfruit in the food systems of the ACP region and to open up opportunities for greater use of breadfruit diversity through sharing information and establishing research and development priorities.

The objectives are:

- To review the status of breadfruit research in the ACP region, and prioritize future research and development
- To develop strategies for post-harvest handling and to enhance food product development, processing and marketing of breadfruit
- To promote the sustainable conservation and use of breadfruit genetic resources

- To stimulate international collaboration, information exchange and networking on breadfruit research and development

#### Expected outcomes

- Priorities for research and development on breadfruit identified
- Global strategy for sustainable and rational conservation and use of breadfruit genetic resources developed
- Strategies in place for improving post-harvest handling, and promoting food product development and marketing
- Collaboration and networking in breadfruit research and development strengthened

#### Target groups

The primary target groups for the symposium are breadfruit researchers and growers from both the public and private sector in the ACP region, ensuring that all aspects of breadfruit research and development are covered, namely, genetic resources, agronomy, pests and diseases, nutrition, post-harvest handling, product development, ethnobotany and marketing.

For further information contact:

J. Woodend ([woodend@cta.int](mailto:woodend@cta.int)), M. Taylor ([maryt@spc.int](mailto:maryt@spc.int)), L. Guarino ([luigi.guarino@gmail.com](mailto:luigi.guarino@gmail.com)), D. Ragone ([ragone@ntbg.org](mailto:ragone@ntbg.org))

### **3. 5<sup>th</sup> International Symposium on New Crops and Uses: their role in a rapidly changing world**

Organised by the Centre for Underutilized Crops, University of Southampton in partnership with The National Non-food Crops Centre and the Tropical Agricultural Association, 3-4 September 2007

**To be held at the University of Southampton, Southampton, UK**

There has been relatively little scientific or economic interest in new/underutilised crops over the past 30 years or so, with most attention and funding focused on improving the few species on which the world's population increasingly depends to feed itself. However, the situation is now changing rapidly - for several reasons. Global warming is increasingly recognised as being a reality, as is its negative impact on the production and productivity of these major crops in different parts of the world. Secondly, population growth continues towards its projected peak of 10 billion persons, with a continuing need for more land to be brought into production, for the available land to be used more productively and for it to produce food of a higher nutritional value. Thirdly, the recognition that we cannot continue to be dependent upon fossil fuels either for energy or as a raw material for plastics and other manufactured materials, and that increasingly such energy and raw materials must come from renewable sources. In practice, much of the land that needs to be brought into cultivation is not suited - whether for reasons of soil, slope or climate - for mechanised production of the current few crops on which we

depend, and there is a growing need for both diversity and novelty. Further, with an estimated 20% of the world's food coming from traditional farming sources, the opportunity exists to build on the best practices of these traditional farmers, many of whom are **not growing the major cereal crops**. It is in this context that new/underutilised crops are at last - after years of being in the wilderness - coming into their own. This is, therefore, an ideal time to take stock of where those scientists, farmers and others who are interested in new/underutilised crops have got to, how we got here, what lessons have been learned, what are the pressing and practical requirements of mankind in the coming years and how can we respond to that need.

## TOPICS

### **Session 1. The context, justification and application of underutilized crops in a rapidly changing world**

Climate change perspective

Food & nutrition perspective

The regulatory environment for commercialization of new/ucs

### **Session 2. The need for underutilized crops in a changing world**

A view from the market-

A subsistence farmer's perspective- underutilized crops within farming systems

Commercial farmer's perspective

An industry perspective

A supermarket view on underutilised crops marketing

A donor's perspective

### **Session 3 Success, failures and lessons learned- food & nutritional crops: Case studies**

### **Session 4 Success, failures and lessons learned- non-food crops: Case studies**

Pharmaceuticals. Bio-energy, Fibre etc and Added value products

### **Session 5 Discussion on papers for**

**a) regulatory and b) technical papers**

*- ICUC-related information*

1) **Just published:** "Potential for Small-Scale Processing and Marketing of Tropical Fruits in the Kandy, Galle and Horana Divisional Secretariat Divisions of Sri Lanka" ICUC Research Report No. 1 authored by A.H.M.S.W.B. Abeyrathne and Hannah Jaenicke provides information on the feasibility of producing and marketing processed products from tropical fruit species in three locations in Sri Lanka. This study, which is part of a larger South-Asian research project on the processing and marketing of underutilised fruits, was conducted in the towns of Kandy, Galle and Horana and their peripheries.

Field-level primary data were collected through semi-structured interviews and qualitative and quantitative approaches were adopted for the analysis. Samples were drawn using stratified random sampling and cluster sampling methods.

The report presents information about consumer behaviour, and about the marketability of

tropical fruit products. A map of the supply chain for underutilised fruits products in Sri Lanka is also presented.

Please contact ICUC for a copy of the report: [icuc-iwmi@cgiar.org](mailto:icuc-iwmi@cgiar.org) or download it from our website: [www.icuc-iwmi.org](http://www.icuc-iwmi.org).



## *IFAVA's bibliographic selection*

Scientific articles registered in PubMed during the

### **Weeks starting from 25/12/2006 to 25/01/2007**

Gender differences in the consumption of meat, fruit and vegetables are similar in Finland and the Baltic countries. *Eur J Public Health* 2006/12/30

Modelling fruit microstructure. *Commun Agric Appl Biol Sci* 2006/12/29

Prolongation of the shelf-life of minimally processed vegetables by mild treatments. *Commun Agric Appl Biol Sci* 2006/12/29

Prune extract (*Prunus domestica* L.) suppresses the proliferation and induces the apoptosis of human colon carcinoma Caco-2. *J Nutr Sci Vitaminol (Tokyo)* 2006/12/28

Foreword: Fruits of originality. *Lancet* 2006/12/26

The diversity of pathogenesis-related proteins decreases during grape maturation. *Phytochemistry* 2006/12/26

Variation of glucosinolates in vegetable crops of *Brassica rapa*. *Phytochemistry* 2006/12

Comparative study of phenolic acids in pseudofruits of some species of roses. *Acta Pol Pharm* 2007/01/06

Cardiovascular Effects of an n-Butanol Extract from Fresh Fruits of *Randia siamensis*. *Biol Pharm Bull* 2007/01/05

*Morinda pubescens* J.E. Smith (*Morinda tinctoria* Roxb.) Fruit Extract Accelerates Wound Healing in Rats. *J Med Food* 2007/01/05

Tropical green leafy vegetables prevent garlic-induced hepatotoxicity in the rat. *J Med Food* 2007/01/05 [rate](#)

Antioxidant capacity of crude extracts from clones of banana and plane species. *J Med Food* 2007/01/05 [rate](#)

A comparative evaluation of the anticancer properties of European and american elderberry fruits. *J Med Food* 2007/01/05 [rate](#)

Pectin anaphylaxis and possible association with cashew allergy. *Ann Allergy Asthma Immunol* 2007/01/05

Micro-algae as a source of protein. *Biotechnol Adv* 2007/01

Intervention with traditional food as a major source of energy, protein, iron, vitamin C and vitamin A for rural Dalit mothers and young children in Andhra Pradesh, South India. *Asia Pac J Clin Nutr* 2007/01/12

Combinations of tomato and broccoli enhance antitumor activity in dunning r3327-h prostate adenocarcinomas. *Cancer Res* 2007/01/1

Dietary fiber in childhood. *J Pediatr* 2007/01/11

Fruit and vegetable consumption and self-reported functional health in men and women in the European Prospective Investigation into Cancer-Norfolk (EPIC-Norfolk): a population-based cross-sectional study. *Public Health Nutr* 2007/01/11

[Study on amino acids from the fruit of Clausena lansium] *Zhong Yao Cai* 2007/01/11

Traditional cooked vegetable dishes as important sources of ascorbic acid and beta-carotene in the diets of Indian urban and rural families. *Food Nutr Bull* 2007/01/11

Carotenoid content and flesh color of selected banana cultivars growing in Australia. *Food Nutr Bull* 2007/01/11

Hypolipidemic and antihyperlipidemic effects of Lagenaria siceraria (Mol.) fruit extracts. *Indian J Exp Biol* 2007/01/09

Effect of increased vegetable and fruit consumption on plasma folate and homocysteine concentrations. *Nutrition* 2007/01/20

Trends in Adolescent Fruit and Vegetable Consumption, 1999-2004 Project EAT. *Am J Prev Med* 2007/01/20

Work-to-family spillover and fruit and vegetable consumption among construction laborers. *Am J Health Promot* 2007/01/20

An experimentally antithrombotic strawberry variety is also effective in humans. *Pathophysiol Haemost Thromb* 2007/01/19

[Role of green tea in oxidative stress prevention] *Clin Ter* 2007/01/19

Vegetable protein lowers blood pressure. *Health News* 2007/01/18

Toxicological and Analytical Investigations of Noni (Morinda citrifolia) Fruit Juice. *J Agric Food Chem* 2007/01/18

Expression of phytoene synthase gene (Psy) is enhanced during fruit ripening of Cara Cara navel orange (Citrus sinensis Osbeck). *Plant Cell Rep* 2007/01/18

Determination of spinosad in vegetables and fruits by high-performance liquid chromatography with UV and mass spectrometric detection after gel permeation chromatography and solid-phase extraction cleanup on a 2-layered column. *J AOAC Int* 2007/01/18

Effect of the Lycium barbarum polysaccharides on age-related oxidative stress in aged mice. *J Ethnopharmacol* 2007/01/17

Flavonoids and the risk of renal cell carcinoma. *Cancer Epidemiol Biomarkers Prev* 2007/01/16

Nutrition and herbs. Tropical fruit juices and drug interactions. *Treatment Update* 2007/01/16

Analysis of 13000 unique Citrus clusters associated with fruit quality, production and salinity tolerance. *BMC Genomics* 2007/01/27

Quinoline Alkaloids from the Fruits of Evodia officinalis. *Planta Med* 2007/01/27

Quantitative Determination of Thapsigargin in Roots and Fruits from Thapsia gymnesica. *Planta Med* 2007/01/26

Dietary fibre and risk of breast cancer in the UK Women's Cohort Study. *Int J Epidemiol* 2007/01/26

Urban agricultural land use and characterization of mosquito larval habitats in a medium-sized town of CÔte d'Ivoire. *J Vector Ecol* 2007/01/26

Vegetable love: the history of vegetarianism. *New Yorker* 2007/01/26

Epidemiology of obesity in Spain. Dietary guidelines and strategies for prevention. *Int J Vitam Nutr Res* 2007/01/24

From obesity to diabetes. *Int J Vitam Nutr Res* 2007/01/24

Contained metabolic engineering in tomatoes by expression of carotenoid biosynthesis genes from the plastid genome. *Plant J* 2007/01/24

Preliminary data from demographic and health surveys on infant feeding in 20 developing countries. *J Nutr* 2007/01/24

Added sugars displaced the use of vital nutrients in the national food stamp program survey. *J Nutr* 2007/01/24

Antimalaria activity of ethanolic extract of *Tetrapleura tetraptera* fruit. *J Ethnopharmacol* 2007/01/24

