

Tropical and Subtropical Fruits

Newsletter n°4



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Foreword

To day, in some parts of the world, ie Kenya Rift Valley, indigenous fruits are becoming the unique solution, in a desperate effort to stave off hunger and malnourishment. It is often at high risk because some of these under-utilized fruits must be prepared in order to become edible. In addition they are highly perishable and no clear market has been identified for the growers, processors or retailers..

After the food price crisis and hunger riots, such situations are calling for new behaviors, news approaches, new solutions.

Why not thinking on how to help these threatened populations to make use and value of under-utilized wild fruits with minimized risks for health, wealth and environment ?.

Most of these “underutilized fruits” are at the same time “under-researched”. And yet these underutilized fruits are often among those who have the greatest potential in terms of nutrition and income generation for smallholders.



It poses the question of the place of tropical and subtropical fruits in the global food security challenge, and the place of research on these fruits in the international priority setting. To day, in developing countries the main focus remains on rice, cereals, root and tubers!

It poses also the question of the best use of these underutilized indigenous fruits, which often are collected in the wild. How to preserve this precious biodiversity and all the traditional knowledge which is associated to them? How to move towards more interaction between traditional knowledge and resources and innovation systems in order to better address income generation and food security issues, particularly in the most critical situations.

It was one of the main reasons for launching the Global Horticultural Initiative (www.GlobalHort.org) that aims to bring together all the capacities, skills, knowledge to address these very crucial challenges in an integrated and partnership approach.

To address efficiently such local desperate situations there is a need for global efforts, out of any institutional or national interest. An initiative like GlobalHort is timely the right way to achieve it.

Jacky Ganry,

Chair, ISHS Section on Tropical and Subtropical Fruits

Postharvest management of Tropical and Subtropical Fruits

There is a growing interest in all areas of tropical and subtropical fruit (production, postharvest and marketing). In the last three decades, production of tropical and subtropical fruits has markedly increased in all the Asian countries, Australia, New Zealand, South Africa and Japan where they make a significant contribution towards export earnings. Tropical and Subtropical Fruits present special problems in conservation and transportation because they are much more perishable than temperate tree fruits and because of the long distance between the producing countries and their major export markets. Depending on the market type it is estimated that 10-60% of the harvested fruits are lost due to poor postharvest handling. With the consumer demand based on quality, postharvest losses are now seriously persuaded with efforts to minimize it. This calls for more R&D in the application of technology to evaluate and enhance quality, especially in the handling process and storage.

S. K.Mitra

Vice-Chair,

ISHS Section on Tropical and Subtropical Fruits

◆ *Global news*

➤ **From GlobalHort :**

- **African Fruits are Featured in the Latest Volume of the Lost Crops of Africa Series**

Lost Crops of Africa: Fruits was published by National Academies Press (2008). It is the third volume in a series devoted to African plant resources. Note: All three books in the series are available free online.

This book is the third in a series evaluating underexploited African plant resources that could help broaden and secure Africa's food supply. The volume describes 24 little-known indigenous African cultivated and wild fruits that have potential as food- and cash-crops but are typically overlooked by scientists, policymakers, and the world at large. The book assesses the potential of each fruit to help overcome malnutrition, boost food security, foster rural development, and create sustainable landcare in Africa. Each fruit is also described in a separate chapter, based on information provided and assessed by experts throughout the world. Volume I describes African grains and Volume II African vegetables.

For more info



Author/Source

The Global Horticulture Initiative

Message by

Hortivar desk (hortivar@fao.org)

◆ *From the countries*

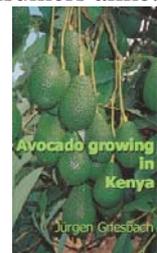
➤ **KENYA**

- **Avocado growing in Kenya**

The World Agroforestry Centre (ICRAF) envisions a large increase in the cultivation of trees in farmland as natural forests decline in area and demand for tree products increases. Smallholder rural households may particularly benefit from increased tree cultivation to help ensure security in food, health and income. To make this agroforestry transformation happen the millions of poor farming households require access to a portfolio of well-adapted and productive trees that can improve their livelihoods. This portfolio will contain both established commercial species and lesser developed indigenous trees. One of the most eligible commercial trees to include in such portfolios around the world is the avocado.

Few tree species can claim such universal appeal as the avocado in terms of bioclimatic suitability and human benefits. The diverse environments in which the avocado developed in Meso-America and the Caribbean have provided a broad range of distinct genotypes that can grow throughout the temperate and tropical zones. In many ways Kenyas diverse climate and topography were made for avocado cultivation with the Mexican highland races and Caribbean coastal races finding corresponding agroclimatic zones here. The high protein, vitamin and anti-oxidant contents of avocado provide a large health benefit to cultivators and urban consumers alike. The world

recognition and demand for avocado also offer current and future export opportunities.



The aim of this book is to familiarize extension staff, trainers, farmers and marketers with avocado cultivation in Kenya. Even though the content is based on research and development information obtained in Kenya, there is no doubt that other countries in Eastern and Central Africa that have similar ecological conditions can also benefit from the information. Its main focus is on varietal selection for different parts of the country since this is very much needed if producers want to supply local and international markets with a timely and varied supply of good quality fruits.

Source: Hortivar

➤ VIETNAM

- Vietnam: Villagers destroy forests for fruit



Dung Hamlet in the central province of Quang Nam is like a ghost town during the day. No one wanders the streets and all the children are locked up alone inside their homes. Their parents are gone for several days, even weeks at a time.

“They go to the forests,” one of the children says. Only late at night do some adults return to the village, looking worn out and tired. Villagers leave their homes for the forest every summer in search of uoi (*Scaphilum lychnophorum*)(1), a sweet fruit the region is known for.

They scour the province’s western districts of Nam Giang, Phuoc Son and Tra Mi, chopping down every uoi tree in sight. They used to wait for the red fruits to fall after ripening, but now the pickers are not so patient.

As a result, the uoi season – which used to last for months – now only lasts a few weeks before all the trees with ripe fruit are chopped down. Uoi prices are particularly high this year, says Aho Buo, head of Dung Hamlet in Nam Giang District.

A few days of hunting for fruit in the forest usually brings in hundreds of thousands of dong in profit to each household.

Uoi are drying in nearly all front yards in Nam Giang, and locals say they’re selling like hotcakes. The price of the ripened dry fruit was around VND50,000 (US\$3) a kilogram at the beginning of the season but this has nearly doubled recently.

Even green unripe uoi now sells for VND50,000 a kilogram. Even people in distant districts where no uoi grow, like Dai Loc, now travel to Nam Giang with electric saws and supplies to live in the forest collecting the fruit for days.

But the real cost for the precious fruit is the loss of the trees, which are being killed in larger numbers than ever. There are many areas where the uoi used to flourish that no longer have a single uoi tree. Trees some 60-70 years old are cut down regularly.

“Soon, they’ll be no more uoi, no more forest,” says Arat Ngheu, a Dung Hamlet resident. “Before, you could just open the door and see uoi forests red with ripe fruit,” a local recalls. But now the uoi has completely disappeared in several districts like Tra Mi and Que Son. Uoi bears fruit every six to seven years and only those that are in their non-fruit-bearing years survive the summer attacks, says a Dung Hamlet local leader.

“Our children’s children will not have the chance to see an uoi tree or enjoy its fruits,” says the village head.

(1) ■ *Uoi (Scaphilum lychnophorum)* grows mostly in Vietnam’s mid-central region and Central Highlands. Each tree is about 20-35 meters tall with a trunk 50-100 centimeters in diameter.

■ Though uoi wood is also valuable, the fruits bring the highest profits. The fruits, used to make fever-reducing teas and relieve dry coughs and nosebleeds, are exported to China from Vietnam.

Source: *thanhniennews.com* Publication date: 8/26/2008

◆ *Fruits*

➤ **Papaya**

- **GM Papaya Transgenes Remain Stable For Several Generations**

Insights from transgenic papaya genome sequences revealed that transgenes generally stay put following integration and can achieve stable expression level from generation to generation, according to a paper published by the journal *Nature Biotechnology*. The SunUp papaya variety, developed by scientists to combat the papaya ring spot virus, is the first transgenic organism to have its genome sequenced.

Ajay Kohli and Paul Christou, authors of the paper, noted that the genome now provides definitive evidences against transgene rearrangement, which is one of the suspected causes of the instability of inserted genes. The transgenes generally become a fixed part of the genome, with predictable and consistent expression patterns. Introduction of the foreign genes interrupted no endogenous gene; so that except for the virus resistance characteristic, the GM plants are functionally similar to their non-transformed counterparts. Despite the stability of the GM papaya variety, however, nonessential sequences such as the *tetA* and *nptII* marker genes and vector DNA remain in its genome.

Read the paper at <http://www.nature.com/nbt/journal/v26/n6/full/nbt0608-653.html>

Source: *CropBiotech Update 13 June 2008*

- **GM Papaya with Improved Resistance to Mites**

Researchers at the Hawaii Agriculture Research Center and the USDA-ARS Pacific Basin Agricultural Research Center have reported that a transgenic papaya with a snowdrop lectin (*Galanthus nivalis* agglutinin [GNA]) gene exhibited improved resistance to carmine spider mites (*Tetranychus cinnabarinus*). Lectins are naturally occurring proteins that typically bind to carbohydrates and are found in plants, animals, bacteria and fungi.

Heather McCafferty and colleagues transformed the commercial papaya cultivar Kapoho which is highly susceptible to mites. The group used the biolistic transformation method to introduce a plasmid containing the GNA DNA to embryogenic calli. Laboratory assay indicated the total reproductive capacity of mites feeding on leaves of the transgenic lines was significantly different and about three times less in the transformed lines. The researchers

noted that mites were also found to spend less time feeding on leaves of the transgenics and this mite feeding behavior may be as significant as the insecticidal activity of the protein.

McCafferty and colleagues plan to further conduct experiments to test the resistance of the transgenic papaya plants to other pathogens and determine the impact of GNA-expressing papayas on the flora and fauna found in Hawaii.

The paper is available at the Plant Science journal website at <http://dx.doi.org/10.1016/j.plantsci.2008.05.007>.

Source: CropBiotech Update 25 July 2008

- **Advances in the Development of Biotech Papaya Reviewed**

Interest in biotech to address problems in papaya has not dwindled. Numerous researches on developing biotech papayas are occurring worldwide as presented by the group of Evelyn Mae Mendoza in one chapter of Biotechnology Annual Review. Among the objectives of these researches include development of varieties with resistance to pests and diseases including papaya ringspot virus (PRSV), mites and *Phytophthora*. Other groups are also exploring the development of aluminum and herbicide tolerance in papaya, those having fruits with long shelf life, and even the production of vaccines against tuberculosis and cysticercosis, an infectious animal disease.

Mendoza and colleagues stated that papaya is the first genetically modified tree and fruit crop and also the first transgenic crop developed by a public institution that has been commercialized. They note that at present about 14 countries are engaged, through collaborative activities or independent efforts, in the development of a biotech PRSV resistant papaya.

The review paper is accessible to journal subscribers at [http://dx.doi.org/10.1016/S1387-2656\(08\)00019-7](http://dx.doi.org/10.1016/S1387-2656(08)00019-7).

Source: CropBiotech Update 22 August 2008

- **Emerging Threat to Virus Resistant Transgenic Papaya**

Researchers at the Transworld Institute of Technology and the National Chung Hsing University in Taiwan reported that they have isolated a strain of papaya leaf distortion mosaic virus (PLDMV) named P-TW-WF that infects transgenic papaya resistant to papaya ring spot virus (PRSV). The P-TW-WF strain believed to be a new pathotype of PLDMV causing vein-clearing, mosaic on leaves of infected papaya seedlings, and water-soaking streaks on the petioles and stems - disease symptoms that are similar to that caused by PRSV.

Taiwan's PRSV resistant papayas have been proven resistant to PRSV for several years of field trial. The PLDMV P-TW-WF strain was isolated during their fourth field trial. The researchers have now generated transgenic papaya lines resistant to PLDMV using the PLDMV coat protein (CP) and among their future endeavors include generation of PRSV-PLDMV double transgenic lines by crossing the PLDMV resistant lines with the existing PRSV-resistant transgenic lines and also by generating resistant plants using chimeric constructs comprising (full or parts of) PRSV and PLDMV P-TW-WF CP genes.

The full report published in *Phytopathology* journal can be accessed by subscribers at <http://apsjournals.apsnet.org/doi/abs/10.1094/PHYTO-98-7-0848>

Source: CropBiotech Update 18 July 2008

- **Local Philippine Partners Get Updates on Biotech Papaya and Eggplant Projects**

Potential partners for the field trials of biotech papaya resistant to papaya ringspot virus and biotech eggplant resistant to fruit-and-shoot borer (Bt eggplant) participated in a series of familiarization activities aimed to enhance their knowledge on these crop biotech products. The participants were briefed by the research leaders from the University of the Philippines-Institute of Plant Breeding (UPLB-IPB) on recent developments and activities regarding the two biotech projects. They also visited and saw first-hand the ongoing evaluation of promising biotech papaya under confined trials at Barangay Paciano, Bay, Laguna. A biosafety orientation seminar followed which discussed the biosafety framework and regulations in the Philippines and the food and environmental safety aspects of biotech papaya and eggplant. The 39 participants comprising of local partners, resource persons, and facilitators came from the academe, local government units, government R&D organizations, private sector, and development organizations.

The activities were co-organized by SEARCA Biotechnology Information Center with the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), and the International Service for the Acquisition of Agri-biotech Applications.

For information about the activity and on Philippine biotechnology contact Sonny Tababa of SEARCA BIC at spt@agri.searca.org

Source: CropBiotech Update 22 August 2008

- **USDA Seeks Public Comment on Deregulation of GE Papaya**

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) is seeking public comment on a petition by the University of Florida to deregulate a papaya genetically engineered (GE) to be resistant to papaya ringspot virus. APHIS has regulated the papaya through its notification process since 1999.

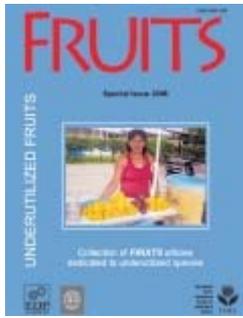
APHIS has prepared a draft environmental assessment (EA), for review and comment. The scientific evidence shows no environmental, human health or food safety concerns associated with the fruit. Comments should be received on or before November 3, 2008.

Visit <http://www.aphis.usda.gov/newsroom/content/2008/08/flpapaya.shtml> for additional information

Source: CropBiotech Update 5 September 2008

➤ Under-utilized Fruits

- **Special edition 2008 on Underutilized Fruits**



The fifteen papers collected in the Fruits special issue dedicated to underutilized fruits provide a glimpse into the diversity of the ongoing research activities: four papers introduce and characterize each one or a range of indigenous species; three papers are presenting an evaluation of newly introduced species; the role of pollinators is the focus of two papers and five fruit species (*Detarium microcarpum*, *Artocarpus camansi*, *Adansonia digitata*, *Mammea americana* and *Annona muricata*) are the topic of six additional papers which study their morphological or physiological characteristics in order to develop or strengthen improvement programmes.

◆ *Events*

- **Symposium on Fruit Nutrition:**

Dr Jacky Ganry, SETF chair represented ISHS in this symposium where it was clear that mineral nutrition is coming back on the front of the key challenges to solve the food security problems, after the strong message sent by the food crisis .

This point was clearly highlighted by the concluding speech from Luc Maes, Head of the International Fertilizer Association, whose analysis stated a reactivation of the fertilizers' demand, a very strong growth in Asia, but a alarmist stagnation in Africa.

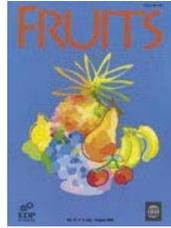
- **3rd. International Symposium on Litchi- Longan**

Professor Sisir Mitra, SETF Vive-Chair attended the 3rd. International Symposium on Litchi. longan--- at Fuzhou from 25-29 August and represented the ISHS. In the Business meeting, it was decided that the next symposium will be held in SouthAfrica or India in 2012. They have also developed the Working Group on Sapindaceae Fruit Crops and Professor H.Chen, South China Agricultural University was elected as its first chairman.

An opportunity for new members to join soon ISHS and take part in the working group.

◆ *Publications*

➤ Scientific journal **FRUITS**



- ***Fruits* is now indexed in two major databases:**

- Science Citation Index Expanded
- Journal Citation Reports/Science Edition

For more information you can visit [Thomson Reuters](#)

➤ **Acta Hort :**

"Proceedings of the International Workshop on Tropical and Subtropical Fruits", held in Thailand, 2007, will be published soon.

◆ *Communication*

➤ **Hortivar**

- **Fruit and Vegetables - A Natural Health Solution**

19 June 2008 - Eating more fruit and vegetables has been put forward as a natural health solution to combat the explosion of obesity and the continued high rate of largely preventable chronic diseases.

On May 30, 2008, the solution was put forward to over 350 delegates attending the International Fruit & Vegetable Summit in Paris hosted by Aprifel (EGEA) and the International Fruit & Vegetable Alliance (IFAVA) and co-sponsored by the World Health Organisation.

IFAVA Chairman, Ron Lemaire said one of the clear messages from the summit was that improving diet quality was an urgent global public health priority.

Mr Lemaire said the summit had drawn representatives from government, science, academia,

research and industry from over 30 countries to discuss the impact of improved fruit and vegetable consumption on global health issues.

"Research tells us that inadequate consumption increases the risk of a range of largely preventable chronic diseases, while people who have a high intake of fruit and vegetables have a better quality of diet and enjoy a healthier lifestyle. There is also emerging evidence that improved consumption may play a role in weight control, making it another useful weapon in the exploding obesity epidemic."

Mr. Lemaire said another of the key messages from the Summit was that of accessibility.

"Ensuring that all populations have access to affordable fruit and vegetables require effective population based interventions, programs and policy change. Ongoing work throughout the world suggests that key focus areas for attention include schools, worksites, community settings, disadvantaged populations and harnessing the power of the media."

Mr Lemaire said IFAVA had launched a "toolkit" to assist countries with the development of appropriate programs. "The toolkit is part of our long term commitment to foster and encourage programmes to increase global consumption of fruit and vegetables. The kit provides practical on-line advice to assist with implementing programs that can make a real difference to the health of local communities, regional areas and the wider population."

Mr. Lemaire said delegates had called on the World Health Organization (WHO) and Food and Agricultural Organization (FAO) to continue to provide strong global leadership in efforts to improve fruit and vegetable consumption worldwide.

The Summit has urged WHO member countries to develop and implement comprehensive, coordinated and sustainable policies and programs to improve access to and increased consumption of fruit and vegetables among the world's population.

Mr. Lemaire said delegates agreed that focused and urgent action by all governments and sectors, to increase the global consumption of fruit and vegetables, could significantly reduce the global burden of preventable chronic disease.

"Increasing fruit and vegetable consumption is backed by science and common sense and is a simple, yet highly effective step that can help improve the health of all nations," he said.

Author/Source

IFAVA

Message by

Hortivar desk (hortivar@fao.org)



- **Functional Foods for Chronic Diseases: Volume 3**

The main goal of this book is to bring together experts in medicine, biology, and the food industry to present the contributions of functional food products for the prevention and treatment of chronic diseases. The contributions of various scientists and medical doctors (a total of 70 authors) from diverse parts of the world compose this book.

Chronic diseases are a growing problem for the developed world. This important collection reviews the role of functional foods in the management of diabetes, obesity, cardiovascular diseases, cancer, kidney and other disease. Part One of the book provides information about new functional and healthy food products for the prevention and management of chronic diseases (using human trials). Part Two discusses new investigations with the usage of functional foods and functional ingredients for the treatment of chronic diseases in animal models and in vitro. The Third and final part of the book includes a series of reviews depicting new ideas, hypothesis and theoretical approaches on functional ingredients, healthy and functional food products, and discusses the possible role of various functional foods for the management of specific chronic diseases.

This book provides some of the most significant information out there for researchers, physicians, and health care professionals with precise information on how to create specific formulas for certain diseases. This fundamental book brings together the worlds leading experts, along with their research conclusions and recommendations on functional food products in the management of diabetes, obesity, cardiovascular diseases, cancer, kidney and other disease. Research scientists, academics, dietitians, medical doctors and physicians, nutritionists, students of the food and nutritional sciences department, functional food manufacturers, and marketers are among the key people who need this book.

Editorial Assistants: Meg Raj Bhandari, Phd. Undurtir Das, MD, Ashkhen Martirosyan

Publisher: D&A Inc.

Edition: First

Price: \$229.00

Library of Congress Control Number: 2007909262

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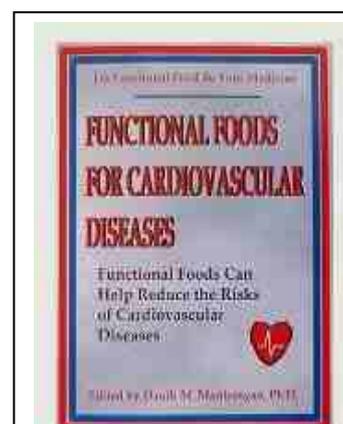
Chapters: 23

Illustrations: 93

Trim Size: 8.00 by 10.00 inches (20.24 by 25.30 centimeter)

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Author Editor: Danik M. Martirosyan, PhD
Year2008

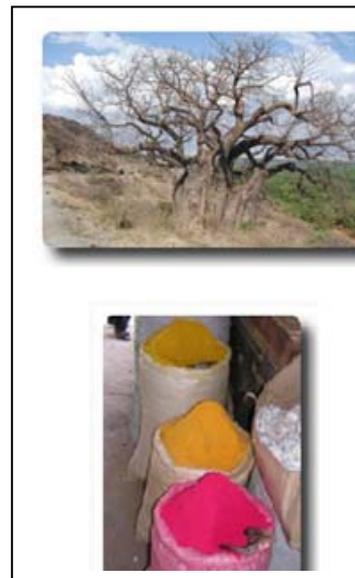
For more info  [\[Internet link\]](#)

Author/Source : Functional Foods Center

Message by Hortivar desk (hortivar@fao.org)

- **The Baobab: An Ancient Tree with Many Uses**

The fruits of the baobab tree contain a sticky pulp that can be dried into a nutritious powder high in protein, vitamins, and minerals. The powder is stirred into warm water or milk to create a healthy drink, and also beaten and dried into thin pancakes for use months or even years later, aiding food security. During the rainy season, villagers often store water in the tree's trunk for later use. The sale of baobab fruits aids rural commerce, and the trees themselves which also yield a popular leafy vegetable -- are almost indestructible.



Its leaves are rich in vitamin A and used as an ingredient in sauces for family meals. To help reduce the pressure on the environment, Franzel, 2006. Baobab. In: Bois et Forêts des Tropiques, Useful Trees, 287(1). Although the technique is relatively simple, it is not always feasible for peasant farmers in terms of feasibility. Constraints include the availability of sufficient manpower, land and water. However, the fact that growing baobabs is likely to bring men into the mainly feminine area of market gardening may bring about some innovations that may open up perspectives for different methods to achieve the objectives set out.

Author/Source : GlobalHort

Message by Hortivar desk (hortivar@fao.org)

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◆ *Meetings*

➤ **ISHS symposiums:**

Year 2008

- November 3-7, 2008, Bogor (Indonesia): **IV International Symposium on Tropical and Subtropical Fruits**. Info: Dr. Roedhy Poerwanto, Jl. Abiyasa Raya No. 1, Bantarjati, 16143 Bogor, Indonesia. Phone: (62)251328942, Fax: (62)251326881, E-mail: roedhy@indo.net.id
- November 8-13, 2008, Firenze, Faenza and Caserta (Italy): **IV International Symposium on Persimmon**. Info: Prof. Dr. Elvio Bellini, University of Firenze, Horticultural Department, Viale delle idee 30, 50019 Sesto Fiorentino, Italy. Phone: (39)0554574053, Fax: (39)0554574017, E-mail: elvio.bellini@unifi.it or Dr. Edgardo Giordani, Department of Horticulture, University of Florence, Viale delle Idee 30, 50019 Sesto Fiorentino (FI), Italy. Phone: (39)0 55 4574050, Fax: (39)0 55 4574017, E-mail: edgardo.giordani@unifi.it Web: <http://www.4persimmon2008.it>
- November 10-13, 2008, Mérida (Mexico): **II International Symposium on Guava and other Myrtaceae**. Info: Dr. Wolfgang Rohde, MPIZ, Calf-von-Linné-Weg 10, 50829 Koeln, Germany. Phone: (49)2215062101, Fax: (49)2215062113, E-mail: rohde@mpiz-koeln.mpg.de or Dr. Jose Saul Padilla Ramirez, INIFAP-Campo Experimental Pabellon, Km. 32,5 Carr. Aguascalientes-Zacatecas, Apdo Postal No. 20 CP 20660, Pabellon de Arteaga, Aguascalientes, Mexico. Phone: (52)4659580167, Fax: (52)4659580167
- December 9-12, 2008, Madurai, Tamil Nadu (India): **II International Symposium on Papaya**. Info: Dr. N. Kumar, Department of Fruit Crops, Horticultural College & Research Institute, Priyakulam, 625 604, India. Phone: (91)4546231726, Fax: (91)4546231726, E-mail: kumarhort@yahoo.com Web: <http://www.ishs-papaya2008.com/>

- From other ISHS Commissions and Sections, but relevant for SETF

Year 2008

- October 22-24, 2008, Sevilla (Spain): **VII International Workshop on Sap Flow**. Info: Dr. José Enrique Fernandez, Inst. de Rec. Nat.y Agrobiol., Campus de Reina Mercedes, Apartado 1052, 41080 Sevilla, Spain. Phone: (34)954624711, Fax: (34)954624002, E-mail: jefer@irnase.csic.es

- December 7-11, 2008, Chiang Mai (Thailand): **XVI International Symposium on Horticultural Economics and Management**. Info: Peter J. Batt, Horticulture, Curtin University of Technology, GPO box U1987, Perth, WA 6845, Australia. Phone: (61)8 9266 7596, Fax: (61)8 9266 3063, E-mail: p.batt@curtin.edu.au or Prof. Dr. Peter P. Oppenheim, Deakin Business School, Deakin University, 336 Glenferrie Road, Malvern, VIC 3144, Australia. Phone: (61)3 9244 5549, Fax: (61)3 9244 5040 Web: <http://www.muresk.curtin.edu.au/conference/ishsem>
- December 7-13, 2008, Bangalore (India): **IX International Symposium on Acclimatization and Establishment of Micropropagated Plants**. Info: Dr. Jitendra Prakash, In Vitro International Pvt. Ltd., #12/44, Rajiv Gandhi Nagar, Bommanahalli, Bangalore 560 068, India. Phone: (91)80 41109273, Fax: (91)80 25727030, E-mail: invitro@bgl.vsnl.net.in
- December 7-11, 2008, Chiang Mai (Thailand): **V International Symposium on Horticultural Research, Training and Extension**. Info: Peter J. Batt, Horticulture, Curtin University of Technology, GPO box U1987, Perth, WA 6845, Australia. Phone: (61)8 9266 7596, Fax: (61)8 9266 3063, E-mail: p.batt@curtin.edu.au or Associate Professor Dr. David Aldous, University of Melbourne, Burnley College, Swan Street, Richmond VIC 3121, Australia. Phone: (61)0392506800, Fax: (61)0392506885 Web: <http://www.muresk.curtin.edu.au/conference/ishset>

Year 2009

- January 28 - February 1, 2009, Dharwad (Karnataka State) (India): **II International Symposium on Pomegranate and Minor, including Mediterranean, Fruits**. Info: Dr. Jagadish Hanamant Kulkarni, University of Agricultural Sciences, UAS, Dharwad 580 005, Karnataka, India. Phone: (91)8362447783, Fax: (91)8362448349, E-mail: jhkulkarni@yahoo.co.in or Dr. Mohammed Kaiser Sheikh, College of Agriculture, Department of Horticulture, Bijapur 586 104, Karnataka, India. Phone: (91)08352267378, Fax: (91)08352267378, E-mail: dr_mksheikh@yahoo.co.in Web: <http://www.uasd.edu/pomegranatesymposium/>
- April 8-12, 2009, Antalya (Turkey): **VI International Postharvest Symposium**. Info: Dr. Mustafa Erkan, Dep. of Horticulture, Fac. of Agric. Akdeniz Univ., 07058 Antalya, Turkey. Phone: (90) 242 3102428, Fax: (90) 242 2274564, E-mail: erkan@akdeniz.edu.tr Web: <http://www.postharvest2009.com/>
- September - , 2009, Bologna (Italy): **XI International Symposium on Plant Bioregulators in Fruit Production**. Info: Prof. Guglielmo Costa, Ordinario di Arboricoltura Generale,

Dipartimento di Colture Arboree, Via G. Fanin 46, 40127 Bologna, Italy. Phone: (39)051 20 9 6443, Fax: (39)051 20 9 6401, E-mail: guglielmo.costa@unibo.it

- November 2-6, 2009, Viña del Mar (Chile): VI International Symposium on Irrigation of Horticultural Crops. Info: Dr. Samuel Ortega-Farias, Casilla 747, Talca, Chile. Phone: (56)71200214, Fax: (56)71200214, E-mail: sortega@utalca.cl or Gabriel Selles, Inst. De Invest. Agro., Santa Rosa 11610, Santiago, Chile. Phone: (56)27575105, E-mail: gselles@inia.cl or Nelson Pereira Muñoz, National Irrigation Commission, Alameda B. O'Higgins 1449, Piso 4°, Santiago, Chile. Phone: (56)024257914, Fax: (56)024257901, E-mail: nelson.pereira@cnr.gob.cl E-mail symposium: information@irrigation2009.cl Web: <http://www.irrigation2009.cl/>

Year 2010

- May 3-6, 2010, Antakya-Hatay (Turkey): III International Symposium on Loquat. Info: Prof. Dr. A. Aytakin Polat, Mustafa Kemal University, Faculty of Agriculture, Dept. of Horticulture, Antakya Hatay, 31034, Turkey. Phone: (90)6232455605, Fax: (90)3262455832, E-mail: apolat@mku.edu.tr

August 22-27, 2010, Lisbon (Portugal): XXVIII International Horticultural Congress - IHC2010.

Info: Prof. Dr. António A. Monteiro, Instituto Superior de Agronomia, Technical University of Lisbon, Tapada da Ajuda, 1349-017 Lisboa, Portugal. Phone: (351)213653451, Fax: (351)213623262, E-mail: amonteiro@isa.utl.pt or Dr. Víctor Galán Saúco, Inst. Canario de Inv. Agrar., I.C.I.A., Apartado 60, 38200 La Laguna, Tenerife, Spain. Phone: (34)922476321, Fax: (34)922476303, E-mail: vgalan@icia.es E-mail symposium: info@ihc2010.org Web: <http://www.ihc2010.org>

