

**PROJECT NEWS**

## Workshop targets problems of the “king of fruits”\*

The tropical fruit durian (*Durio zibethinus*), also sometimes known as the “king of fruits”, has a mixed reputation. It is considered a delicacy in many Southeast Asian countries, and is an important and high-value cash crop.

However, durian is also notorious for its distinctive odour: so much so, that it is banned from many public places in Thailand. Having an aroma that

some people find unpleasant is not the only problem of the durian. It is also highly susceptible to diseases caused by the microscopic pathogens from the genus *Phytophthora*, which lead to considerable production losses.

### Participants from PNG, Thailand, and Vietnam

In an ACIAR-funded project (PHT/1995/134) (with complementary funding from the Australian Rural Industries Research and Development Corporation), Australian researchers are working with scientists from Thailand and Vietnam to develop integrated disease management strategies for the control of

phytophthora diseases in durian. The Crawford Fund for International Agricultural Research, another Australian agency, sponsored the attendance of Mr Mai Van Tri from Vietnam and Mr John Konam from Papua New Guinea (PNG) at a project-planning workshop in December 1998.

The workshop began at the University of Melbourne, from where the project is being coordinated under the leadership of Associate Professor David Guest. Some of the workshop activities included: reporting on the current status of durian production and disease for each region; demonstration, comparison, and discussion of appropriate field and laboratory techniques for use in the project; and planning of project activities. John Konam was able to relay important information from research in PNG on the management of phytophthora diseases in cocoa.

Continued at foot of page 2.

\* This item was contributed by Dr Emer O’Gara, a Research Fellow in the Department of Botany, University of Melbourne, and a member of the team for ACIAR Project PHT/1995/134, “Management of phytophthora diseases of durian”.



Participants in the durian workshop. From left: (at rear) Dr Somsiri Sangchote, Dr Sunchai Tontyaporn, Mr Mai Van Tri, Mr Chris Wicks, Dr T.K. Lim, Mr Matthew Weinert, Dr Nguyen Minh Chau, Assoc. Prof. David Guest, Mr Lynton Vawdrey, Dr André Drenth, Mr Yan Diczbalis; (in front) Mr Huynh Van Thanh, Mr John Konam, Ms Ratiya Pongpisutta, Ms Kaija Jordan, Ms Emer O’Gara. Absent from the photograph is ACIAR Postharvest Technology Program Manager, Dr Greg Johnson, who also attended the workshop.

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# Internet discussion groups for agricultural engineers

The Commission International Genie Rural (CIGR)-FAO Global Network email discussion group is up and running, according to a message sent out in mid January by FAO's Agricultural Engineering Branch, which urged those currently subscribing to AGENG-L to transfer quickly to the new network.

The CIGR-FAO Global Network has six email discussion groups:

- CIGR-FAO-LanWat-L, covers the technical area of the CIGR Section I, LAND AND WATER USE, specifically agricultural engineering as applied to soil and water management such as: soil protection, improvement and conservation, drainage and irrigation systems; to land improvement and land reclamation, to rural planning and management and to rural roads and infrastructure.
- CIGR-FAO-Build-L, covers the technical area of the CIGR Section II, FARM BUILDINGS, EQUIPMENT, STRUCTURES AND ENVIRONMENT, specifically optimisation and design of animal, crop, and horticultural buildings and related equipment, climate control and environmental protection, farm planning, waste management.
- CIGR-FAO-EquipPlant-L, covers the technical area of the CIGR Section III, EQUIPMENT ENGINEERING FOR PLANT PRODUCTION, and seeks to develop exchange of information, technical study, scientific research and practical experiences between designers of machinery (researchers in private and public sectors, technical boards), manufacturers, advisers, teachers and trainers at different levels, and final users of these machines (farmers, contractors, etc.).
- CIGR-FAO-Energy-L, covers the technical area of the CIGR Section IV, RURAL ELECTRICITY AND OTHER ENERGY SOURCES, which is in particular rural electrification and renewable energies in developing countries' strategies, profiles and techniques; renewable energies especially from organic wastes and residues—exploitation and environmental impact; measuring, control, and automation in agricultural electrical applications.

The discussion will seek to cover the fields of interest of industrial countries as well as developing countries.

- CIGR-FAO-SystMngm-L, covers the technical area of the CIGR Section V, MANAGEMENT, ERGONOMICS AND SYSTEMS ENGINEERING. In particular, the list is an open discussion forum for all experts interested in system engineering, work science, management, and ergonomics.
- CIGR-FAO-ProcQual-L, covers the technical area of the CIGR Section VI, PROCESSING, specifically physical properties of raw (food and nonfood) materials, quality of final products, processing technologies, processing management and engineering.

There may be topics of interest to postharvest researchers and personnel in all but the first of these.

The CIGR-FAO Global Network can be subscribed to as follows. First select from the six topic areas those that are of interest to you. To subscribe to a list, send a message to < mailserv@mailserv.fao.org > leaving the subject blank and entering the one-line message:

SUBSCRIBE CIGR-FAO-...-L

If you want to subscribe to more than one list, you can include the multiple subscription in one message, using a separate line for each group. Thus, if you wished to join the lists corresponding to sections I, III, and IV, for example, your message would be:

To: mailserv@mailserv.fao.org

Subject:

subscribe CIGR-FAO-LanWat-L  
subscribe CIGR-FAO-EquipPlant-L  
subscribe CIGR-FAO-Energy-L

After subscribing you should receive a message telling you that your request has been forwarded for manual processing and not too long after that you should receive a Welcome Note for each of the discussion groups you have subscribed to.

For further information, contact:

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## 19th ASEAN Postharvest Seminar

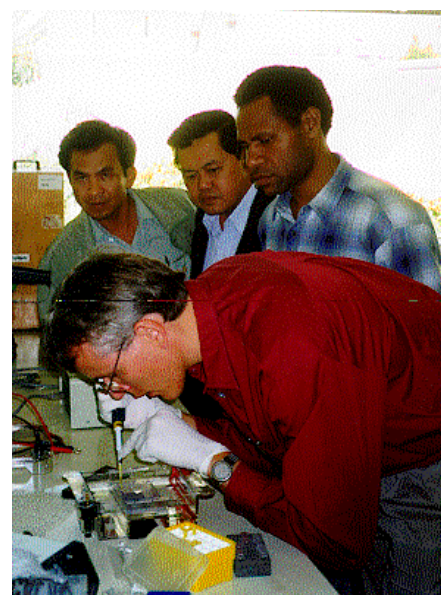
A pre-registration form for the seminar, to be held in Ho Chi Minh City, Vietnam on 9-12 November 1999, is inserted with this issue. Please direct inquiries to <ed@arawang.com.au>.

## Durian workshop...from page 1.

Participants then travelled to northern New South Wales to visit an avocado nursery and orchard in which integrated disease management strategies for phytophthora control are well established, and have been very successful.

Participants later visited durian orchards in the far north of Queensland, where the devastating effects of phytophthora on durian were evident.

More information on this project is available at the project website on <http://www.botany.unimelb.edu.au/labs/mycology/durianWeb/index.html>. This site will be updated as the project progresses. ■



Mr Mai Van Tri and Dr Nguyen Minh Chau from Vietnam, and Mr John Konam from PNG, watch as Dr André Drenth prepares a DNA gel during one of the laboratory sessions at the durian workshop.

# The impact of the post-production sector\*

This was the third of a series of meetings which have been held annually at the International Centers Week aimed at promoting research on post-production systems at the Consultative Group for International Agricultural Research (CGIAR) as a follow-up to the CGIAR Technical Advisory Committee's review on Post-Harvest Technology of April 1996.

The meeting this year was jointly hosted by the Canadian International Development Research Centre (IDRC) and the German Agency for Technical Cooperation (GTZ). Some 40 representatives of donors, national agricultural research services (NARS), international agricultural research centres (IARCs), and non-government organisations (NGOs) attended.

Juergen Friedrichsen (GTZ) welcomed the participants at the early hour [it was a breakfast meeting] and indicated GTZ's interests in promotion of postproduction for generating income and alleviating poverty. Joachim Voss (IDRC) echoed this and emphasised that NARS are now giving higher priority to the need to be able to compete in markets, so that the demand for postproduction strategies and activities is becoming more urgent. In addition, it is becoming clearer that in many areas alternatives to agricultural production improvement are needed to provide off-farm and non-farm employment and income, which will take pressure off the land and assist sustainability.

The objectives of the meeting were to:

- sensitise donors to the impact of supporting activities in postproduction systems; and
- encourage greater collaboration in research and development, information exchange, and networking in postproduction systems.

Two presentations were made:

1. The impact of postharvest research, by Francesco Goletti (co-author: Christiane Wolff) of the International Food Policy Research Institute (IFPRI); and
2. Future directions for collaborative postproduction research, by Rupert Best of the International Center for Tropical Agriculture (CIAT).

Dr Goletti outlined the trends for the increasing importance of postharvest activities—urbanisation, contraction of the agricultural sector, liberalised international trade, and improved infrastructure and communications. He provided some preliminary evidence of the impact of postharvest research on poverty alleviation, food security, and sustainability of agriculture. He cited reasons that justify an increased commitment to postharvest research by the international agricultural system and the CGIAR in particular: high internal rates of return comparable with those for production research, international public-good character where private investors would not be interested or where the public sector can catalyse attention to a new opportunity that the private sector might subsequently consider; effects on poverty; effects on food security and health; and effects on sustainable use of natural resources.

Goletti considered that the comparative advantage of the CGIAR lies in its broad access to information on agricultural systems in developing countries, its collaborative research experience particularly with NARS, its experience with multidisciplinary research, particularly in the postproduction field, and its impartiality in undertaking policy studies. Goletti argued that the very skewed allocation of funds to production versus postharvest topics is not justified, as there is potential for large impacts as constraints and bottlenecks are removed. The full paper is available at <[www.fao.org/inpho/](http://www.fao.org/inpho/)>: go to "virtual library" after connecting.

Rupert Best graphically presented the argument for increased attention to the postproduction field in order to meet the income generation and hence poverty alleviation objectives of the CGIAR, particularly as is being suggested in the recommendations of the System Review Panel. The generation

of income is essential for meeting food security and poverty eradication objectives but it is critical also in motivating farmers to invest in the protection of their resource base. At the macro level, this will involve the improvement of food quality and postharvest storage and handling characteristics of the major food staples through genetic improvement and manipulation, and on ensuring appropriate national policies and institutional structures on markets, infrastructure, and prices to ensure wide accessibility to moderately priced and healthy food. At the micro level, action will be required on identification and development of market opportunities, selection and participatory development of postproduction technology, organisation of micro and small enterprises and the services to support them, and development policies which promote smallholder agriculture and related post-production enterprises.

Two global initiatives have evolved over the past two years to seek to resolve some of the weaknesses in the national and international efforts in postproduction research and development:

- (a) the Information Network on Post-harvest Operations, INPhO, managed by FAO with support from the French Centre for International Cooperation in Agricultural Research for Development (CIRAD) and GTZ, with initial presentation on the Internet and CD ROMs for evaluation;
- (b) the Small Grants Fund of the Global Collaborative Post-Production Research Network, for seed funding of collaborative research explorations with CGIAR and NARS partners, initially funded by IDRC. To date 10 awards of approximately US\$13,000 each have been granted. Researchers in the first set of five were due to present their full research proposals by February. This will be the test as to whether the Small Grants mechanism has been effective in developing high quality proposals which are attractive to donors.

Best then went on to suggest that there is a need and there are opportunities to build on these initiatives, to bring more cohesion and impact to postproduction research and development, and that donors could choose from a range of options, such as:

- support one or more small grant awards, perhaps according to donors' interests and priorities;

Continued at foot of page 4.

\* This is a report by Bill Edwardson, IDRC consultant, of a meeting entitled "The impact of the post-production sector—future directions for post-production research and the global network", held in Washington, DC, on 26 October 1998

# Cleaning-up farm chemical containers

Australian farmers are now part of a new scheme to collect and recycle non-returnable chemical drums and containers, which aims to further reduce the risks of environmental contamination by agricultural and veterinary chemicals.

The program, called **drumMUSTER**, is a collaborative venture of Avcare (representing the chemical industry), the National Farmers' Federation, and the Australian Local Government Association.

Farmers now have two options when they purchase chemicals: (i) buy products in non-returnable containers, pay a four cents a litre/kilogram levy, and take the empty, cleaned containers to collection points operated by local councils; or (ii) choose products sold in environmentally-friendly packaging and pay no levy.

Through **drumMUSTER**, the industry aims to achieve environmentally responsible disposal of farm chemical containers. These containers can then be recycled into products such as various types of pipes, farm poles etc. Money collected through the levy is used to reimburse manufacturers who have pre-paid the four cents a

litre/kilogram and to pay the participating local councils who provide the container collection service. The levy is explained on the farmer's invoice or statement so that it is clear what the money is for and where it is going.

A longer term objective is to encourage manufacturers to provide their products in more environmentally friendly ways such as: bulk or re-fillable containers; new packaging technologies such as water-soluble sachets; and new formulations such as gel packs and granules. Such packaging is not subject to the new levy and thus it is expected that farmers will prefer it to the non-returnable variety. Where unavoidable (at least in the short term), non-returnable containers can be taken to the **drumMUSTER** collection centres.

The number of containers entering the distribution system will thus progressively fall, but it's a big task because, according to **drumMUSTER** program manager, Mr David Harvest, more than four million non-returnable containers currently enter the community every year. ■

# New projects

Two new projects have been implemented in the Postharvest Technology Program over the past 6–9 months: PHT/1995/134 "Management of phytophthora disease of durian" (see page 1 story); and PHT/1994/106, "Shelf-life extension of leafy vegetables".

The vegetable project aims to improve procedures in the Chinese handling system and thus reduce postharvest wastage of leafy vegetables. The researchers will determine which agronomic and postharvest handling procedures increase shelf life, and identify what physiological factors limit shelf life so that they can focus on them in future biotechnological control and breeding strategies.

The commodities involved are Chinese cabbage, pak choi, broccoli, asparagus, and oriental bunching onions. Savings will occur through reduced wastage and access to further markets, and minimal processing will add value.

Australian agencies participating in the project are the Queensland Department of Primary Industries, the University of Adelaide, and Agriculture Victoria, while the Chinese research partners are in the Beijing Vegetable Research Centre and the Hangzhou Institute of Commerce. ■

## The impact of the post-production sector ... from page 3.

- invest in one or more of the full proposals that result from initial small grant awards;
- strengthen NARS capacity to link to the global knowledge network on post-production; and
- support a stakeholders workshop, including the private sector, to define priorities and strategies for international post-production research.

The ensuing discussion period brought forward a number of issues, viz.

- Sustainable livelihood development as key entry point for increasing support to the postproduction area in the future, rather than continuing the link only to agricultural development.
- Information services should be more decentralised, relevant, participatory and practical for farmer and field-support services (NGO, extension etc.) than is being envisaged in the INPhO model. NGOs need tested and validated results from research to be available for application in the field, not research as conventionally reported.
- NARS are taking the lead in driving the need for attention to this field and in seeking participation of the private sector.
- Interest of the International Fund for Agricultural Development (IFAD) in supporting efforts in this field in order to generate rural incomes, employment, market links, and enterprises specifically through the small grants initiatives.
- The need to learn from other agencies' successes and failures,

such as from the U.S. Agency for International Development (USAID) which has invested heavily in this field in the past.

- The need to include a focus on plant breeding for particular quality traits for product utilisation and marketing.
- Policy constraints may be more important than technical ones, and so attention is needed to both macro and micro issues for progress in post-production development.

Joachim Voss of IDRC closed the meeting by noting the general consensus for increasing support for this field and encouraged donors to make their interests known to those already committed to continued support (IDRC, GTZ, IFAD), so as to permit a coordinated approach to the definition and allocation of resources. ■

# Meeting Asia's future demand for rice

The world's population is expected to increase by two billion in the next 25 years. Much of the increase will be in Asia, where people depend on rice as a staple food. The International Rice Research Institute (IRRI), based at Los Baños in the Philippines, has predicted that, over just the next 10 or so years, the total demand for rice and other cereals in Asia will increase by 30%.

In response to this challenge, IRRI has launched a new three-year plan of research—"Sustaining Food Security Beyond the Year 2000: a Global Partnership for Rice Research"—which will be undertaken in conjunction with farmers' groups, government and non-government organisations, and the private sector. The main issues addressed by the plan are to: (i) raise the yield of rice from existing paddies, as it is likely that very little extra land will become available to expand fields; (ii) reduce the water use requirements of rice crops as water for agriculture becomes scarcer; and (iii) reduce pressure on the natural resource base. In addition, IRRI recognises the need to maintain rice as an attractive, economic crop for future generations of farmers.

In order to understand biodiversity in rice landscapes and allow for better pest management, part of the IRRI project will be implemented at sites in different locations throughout Asia. At some key sites, eco-regional approaches will be directed towards improved natural resource management. The Institute has already made good scientific progress toward increasing rice yields and in developing new methods of rice production which require less water. It is working on new high-yielding rice varieties which it hopes will raise yield by 20–30% and be ready within five years.

For further information, contact:  
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email: <S.Inciong@cgiar.org>. ■

[One hopes too that efforts to reduce the significant crop losses that still occur after harvest in some countries will be given some priority. Ed.]

# Thai postharvest researchers seek APEC support

Thai postharvest researchers in King Mongkut's University of Technology Thonburi have recently applied for support from two of the APEC fora working in the postproduction area, namely the Industrial Science and Technology Working Group and the Agricultural Technical Cooperation Experts Group (see Box: "Introducing APEC..." beginning on next page). The thrusts of the projects proposed are in line with general APEC objectives and with those of the specific APEC fora:

- Development of a network aiming at streamlining research in postharvest in the APEC region (submitted to ISTWG—see Box). This proposal includes representatives from research organisations and the private sector in Australia,

Canada, Indonesia, Malaysia, and Thailand. A coordination meeting of the participants in the proposed project took place in Bangkok on 30 November 1998 (see photograph).

- APEC institutional linkage for human resources development in postharvest technology (submitted to ATCEG—see Box). This project is orientated towards development of teaching and training materials for continuous education at different levels (vocational, university, and continuing education) for people employed in the postharvest industry. The project will include participants from Australia, Brunei Darussalam, Canada, China, Chinese Taipei, Indonesia, Japan, Malaysia, New Zealand, Philippines, Thailand, USA, and Vietnam. ■



Meeting of the proponents and collaborators at the National Science and Technology Development Agency (NSTDA) Building in Bangkok on 30 November 1998. From left to right: **Dr Sonthai Nanthachai**, Horticulture Research Institute, Department of Agriculture Bangkok (Thailand); **Mr Siripong Pattanavibul**, Thailand Institute of Scientific and Technological Research, Biological Science Research Department, Agrotechnology Laboratory, Bangkok (Thailand); **Dr Aroon Lawanprosert**, Department of Rural Technology, Faculty of Science and Technology, Thammasat University, Rangsit Campus Pathum Thani (Thailand); **Dr George Szrednicki**, University of New South Wales, Department of Food Science and Technology, Sydney (Australia); **Professor Somchart Soponronnarit**, King Mongkut's University of Technology Thonburi, School of Energy and Materials (Thailand); **Dr Sirichai Kanlayanarat**, King Mongkut's University of Technology Thonburi, Division of Postharvest Technology (Thailand); **Dr Yada Mukdapitak**, Ministry of Science, Technology and Environment, Office of Policy and Planning (Thailand); **Professor Peter L. Douglas**, University of Waterloo, Department of Chemical Engineering (Canada); **Professor Dr Ir. Hadi Purwadaria**, Department of Agricultural Engineering, College of Agricultural Engineering and Technology, Bogor Agricultural University (Indonesia); **Mr Gerald G. Dubrick**, The Founders Counsel Corporation, Waterloo, Ontario (Canada); **Mr S.O. Cheah**, President, Grainmaster (M) Sdn. Bhd, Penang (Malaysia)

## Introducing the Asia-Pacific Economic Cooperation forum...

The Asia-Pacific Economic Cooperation forum, more often known by its acronym APEC, was formed in 1989. Its establishment was a response to the increasing interdependence of the economies of the Pacific rim nations. APEC has come a long way from being initially a discussion group to becoming the principal regional vehicle for promotion of trade liberalisation and economic cooperation. The primary goal of the organisation is to stimulate the economic development of the Asia-Pacific region.

Although Southeast and East Asia have been affected by an economic downturn since 1997, the Asia-Pacific region as a whole remains one of the fastest growing parts of the world. Currently, APEC includes all the major economies of the region. At present, 21 countries are full members of the organisation and three organisations have observer status. The latest three countries to join APEC were Peru, Russia, and Vietnam, which were admitted to membership during the 10th APEC Ministerial Meeting, held in Kuala Lumpur, Malaysia in November 1998. They joined Australia, Brunei Darussalam, Canada, Chile, People's Republic of China, Hong Kong China, Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, the Philippines, Singapore, Chinese Taipei, Thailand, and USA, 18 economies whose gross domestic product was estimated at over US\$16 trillion in 1995 and which were responsible for an estimated 44% of global trade. The three organisations with observer status are the ASEAN Secretariat, the South Pacific Forum, and the Pacific Economic Cooperation Council (PECC).

The APEC Chair, which rotates annually among members, is responsible for hosting the annual ministerial meeting of foreign and economic ministers. New Zealand has the Chair for 1999 and will host the Joint Ministerial Meeting and Economic Leaders meeting in Auckland in September.

### Objectives

APEC has a number of objectives that have evolved over time from a growing sense of common interests and cooperation aimed at sustained economic growth in the region and worldwide. Initial objectives were to promote Asia-Pacific economic cooperation and to facilitate the conclusion of the Uruguay Round of GATT negotiations. The focus later changed to building an Asia-Pacific community by stimulating economic growth in the region. This objective was to be achieved by development of trade links and increased economic cooperation.

Successive meetings of the economic leaders have identified further objectives. During the meeting at Blake Island near Seattle in November 1993, the objectives set by the participants for the APEC covered free exchange of goods, services, and investment, sustained economic growth, respect of the natural environment, and higher living and educational standards. At the meeting in Bogor, Indonesia in 1994, the participants elaborated on the mechanisms of achieving their goal of free and open trade and investment. This goal is to be achieved by 2010 in the developed economies of APEC and by 2020 in the developing member economies. The meeting in Osaka in 1994 continued along the same path by recognising the

three pillar activities of APEC: trade and investment liberalisation; business facilitation; and economic and technical cooperation.

In November 1996 in Manila, the economic leaders adopted the Manila Action Plan for APEC (MAPA), including individual and collective action plans on joint APEC activities aiming at achieving the objectives proposed at the meeting in Bogor. The plan accorded highest priority to six areas of technical and economic cooperation: development of human capital; fostering safe and efficient capital markets; strengthening economic infrastructure; harnessing technologies of the future; promoting environmentally sustainable growth; and encouraging small and medium-sized enterprises.

The economic leaders at the meeting in Vancouver in November 1997 reaffirmed the commitment of individual member economies to the individual action plans. They also promoted the concept of early voluntary sectoral liberalisation (EVSL) in 15 sectors of the economy, and a program to harmonise and simplify customs clearances by 2002. Furthermore, the APEC economies were urged to follow World Trade Organization recommendations in order to be better prepared for the challenges of globalisation of world trade.

The efforts of APEC economies to involve business, academic, and other experts, as well as women and youth, in the implementation of APEC objectives were recognised by the economic leaders at the Vancouver meeting. In particular, the *Vancouver Public-Private Partnership for Infrastructure Development* has been recognised as an important means of carrying forward the forum's goals. At the latest economic leaders meeting in Kuala Lumpur, the emphasis was on ways of dealing with the financial crisis that had spread beyond Southeast and East Asia. The goals of Economic and Technical Cooperation (ECOTECH) to achieve sustainable growth and reduce economic disparities between member economies were also discussed. The leaders strongly affirmed their commitment to work together to support an early and sustained recovery in the Asia-Pacific region. In particular, the emphasis was to be put on "capacity building" across the broad range of APEC activities, including human resources and skills development, technological upgrading, infrastructure improvements, and wider outreach to small and medium enterprises (SMEs) in order to overcome the challenges resulting from the financial crisis and restore stability and confidence to the region. Among those challenges are those related to the financial crisis and to Trade and Investment Liberalisation and Facilitation (TILF). Strengthening the foundations for sustained growth into the 21<sup>st</sup> century becomes another important objective of APEC. The economic leaders "resolved to strengthen social safety nets, financial systems individually and globally, trade and investment flows, the scientific and technological base, human resources development, economic infrastructure, and business and commercial links so as to provide the base and set the pace for sustained growth into the 21<sup>st</sup> century".

Continued at foot of next page

# Implications of reform in China's grain market

Although grain marketing in China has become more competitive during the 1990s, and domestic and international prices have become more closely aligned, some important issues still need to be resolved in the Chinese system.

ACIAR Technical Report No. 43—Grain Market Reform in China: Global Implications\*—documents the reforms in grain marketing so far and identifies some of the forces in the political process in China which is driving these changes. Special attention is paid to the international repercussions of reform. The report also identifies some of the key

\* Findlay, Christopher (ed.) 1998. Grain market reform in China: global implications. ACIAR Technical Report No. 43, 68p.

constraints and issues in the next stages of reform.

One main issue has been the internal transfer system, the essence of which is to make provincial governors responsible for balancing the supply and demand for grain in their area of responsibility, but which is prone to conflict between exporting and importing provinces. Other matters bearing on reform relate to the extent of government support for the marketing system.

Research indicates that China's total demand for grain will continue to grow through to 2020. Within that period, the increasing requirement for feed grain will be the sole driving force in the growth of demand for grain from 2000 onwards; the combined effects of income growth and change in population structure will lead to a fall in the demand for food

grain. Clearly, the rate of change of these two parts will be very sensitive to (i) any change in the efficiency of feed grain use, and (ii) the rate of income growth.

The report also assesses the scope for productivity growth, interactions with international markets and the trade outlook. Scenarios associated with alternative potential policy decisions are explored.

The work reviewed in the report is the output of a joint research program between Australia and China, supported by ACIAR, and funded in part by the Grains Research and Development Corporation (GRDC). The joint nature of the work and access to a wide range of materials have allowed a close and realistic assessment of the outlook.

Copies of the report can be obtained via the ACIAR home page: <[www.aciar.gov.au](http://www.aciar.gov.au)>. ■

## Introducing APEC...cont'd

APEC recognises the important role played by business and the private sector in general in the growth of the Asia-Pacific region. Since 1995, APEC economic leaders have been supported by the APEC Business Advisory Council (ABAC) in their work to promote business participation in APEC activities.

## Structure and organisation

To understand how APEC operates, one needs to know a little about its structure and organisation. APEC's decisions are made by consensus on the basis of open dialogue with respect for views of all members. Senior Officials Meetings (SOM) are held before the annual ministerial meetings organised by the APEC Chair. The senior officials of the APEC member economies make recommendations to the ministers and supervise their implementation. After approval by the ministers, they oversee and coordinate the work programs and budgets of the following APEC fora:

- Committee on Trade and Investment (CTI)
- Economic Committee (EC)
- Budget and Administrative Committee (BAC). The BAC was re-designated as the Budget and Management Committee (BMC) in November 1998.
- SOM Sub-committee on Economic and Technical Cooperation (ESC)
- Ad Hoc Policy Level Group on Small and Medium Enterprises (PLGSME)
- Energy Working Group (EWG)
- Fisheries Working Group (FWG)
- Human Resources Development Working Group (HRDWG)

- \* Industrial Science and Technology Working Group (ISTWG)
- Marine Resource Conservation Working Group (MRCWG)
- Telecommunications Working Group (TELWG)
- Tourism Working Group (TWG)
- Trade and Investment Data Review Working Group (TIDWG)
- Trade Promotion Working Group (TPWG)
- Transportation Working Group (TPTWG)
- The Agricultural Technical Cooperation Experts Group (ATCEG).

## Secretariat

In order to support APEC activities, the APEC Secretariat has been established in Singapore since 1993. The Executive Director of the APEC Secretariat is seconded by the country occupying the Chair in the particular year, and his deputy from the country that will hold the Chair the following year. The office of the APEC Secretariat provides the link between different APEC fora and coordinates their activities. Public relations activities, maintenance of the APEC Library, and production and sale of APEC publications are also the responsibility of the Secretariat. Another important activity is the maintenance of the APEC web site: <http://www.apecsec.org.sg>. This article is drawn from the information available on the APEC home page and in APEC publication #98-SE-05.3. For inquiries, the APEC Secretariat can be contacted at 438 Alexandra Road, #14-01/04 Alexandra Point, Singapore 119958; phone: (65) 276 1880; fax: (65) 276 1775. ■

# Consideration of gender issues in project design

There have been many projects undertaken in the postharvest sector which aim to improve conditions for women in particular. At first glance, many of these appear to involve logical and helpful solutions to the specific problems they address, but in practice many fail (see Box below for an example). A common reason for failure is that the specific needs and preferences of the targetted women are too often assumed by researchers, rather than any real consultation taking place.

An extremely useful and insightful manual has been published by GTZ\*, entitled *Gender-Orientation in the Post-Harvest Sector*, which provides clear advice on issues that should be addressed when designing a project of this type.

In the context of the handbook, the term *gender* is cultural—learned through socialisation and hence possible to change—as distinct from *sex* which is biological and cannot be changed.

Although women play a central role in agriculture and in the postharvest sector in particular, compared with men they have less access to material and financial resources (land, means of production, or money/credit) and services (use of labour force etc.). For example, land titles are for the most part issued in the names of heads of households—mostly men—and therefore women frequently have only indirect access to land, through their fathers or husbands.

Issues which should be considered are given in the GTZ manual in the form of inventorial questions relating to three main areas: (i) living conditions of men and women in rural areas; (ii) gender-specific division of labour; and (iii) access to and control over resources. Points are illustrated with pertinent examples of real situations.

The authors stress that this is not a definitive guide, rather the formula-



tions are intended to stimulate the researchers' thinking. Emphasis is placed on the need for sensitive, indirect questioning and methods on the whole—none of the suggested questions should be addressed directly to the target group.

For involvement of women and men in project planning and design, participatory approaches have proven particularly useful. Viewing problems and situations separately from women's and men's perspectives makes it possible to recognise the differences in their interests in the postharvest sector. In this process, handicaps for women come to light which can then be deliberately counteracted in the project, so that, ideally, men and women will profit in equal measure from its activities.

The problems mentioned by women in the postharvest sector—such as lack of capital, energy and time-wasting processing techniques, inadequate transport and lack of markets—are complex and in part interrelated. Hence, the best problem-resolving approaches have proved to be those which do not see individual components in isolation (e.g. reducing legume storage losses), but instead holistically.

For further information regarding this publication, contact Albert Bell, GTZ, Postfach 5180, D-65726 Eschborn, Germany; <albert.bell@gtz.de>. ■

## Rekomendasi yang diusulkan untuk fumigasi biji-bijian di kawasan ASEAN

ACIAR recently published the third part of the Bahasa Indonesia language version of the AFHB/ACIAR "fumigation code"—Buku 3. Fumigasi tumpukan karung dengan fosfin yang disegal dalam plastik tertutup: petunjuk operasional.

Copies can be obtained from:

Publications Manager  
ACIAR  
GPO Box 1571  
Canberra ACT 2601  
Australia  
Fax: +61 2 6217 0501  
Email: <comms@aciarc.gov.au>. ■

### Box

#### Animal-powered mill, for and against

Motorised mills have been introduced into many communities in West Africa with the expectation that these will increase economic benefits while saving time. However, there is one reservation: motorised mills can be employed to advantage only where their full capacity can be utilised. Since this is not the case in most remote rural areas, it is not advisable to install them everywhere. Project officers regarded the animal-powered mill as an alternative to the motorised mill, assuming that, because it saves travel time, it makes women's work easier.

During evaluations, however, in conversations with numerous village women in Senegal, Mali, and Burkina Faso, it turned out that by going once to the motorised mill (5 km at most) they covered the family's milling needs for a whole week. Furthermore, they could make use of this opportunity to buy and sell goods and to visit relatives. These discussions made it clear that a trip to the motorised mill was not regarded as a waste of time. Since, in addition, the animal-powered mill is only partially suited to grinding because it is not economical enough, the women were unable to see any special advantages to its introduction and so reacted with little enthusiasm to this 'innovation' (GTZ 1994). ■

\* Doris Günther in collaboration with Elke Zimprich (no date). *Gender-orientation in the post-harvest sector*. Eschborn, Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Aid—GTZ), 35p.

# Postharvest and marketing activities in CICRTRC\*

The objective of CICRTRC's Postharvest Working Group is to capture the synergies of continuing and enhanced collaboration between CGIAR centres and increase the effectiveness of the research on postharvest processing and marketing of roots, tubers, cooking bananas and plantains (RTCBP). The group was constituted and is currently made up of representatives of CIAT, CIP, IFPRI and IITA.

## Vision and strategy document

One of the initial tasks of the working group has been to prepare a vision and strategy document on the role of the CGIAR in RTCBP postharvest systems research in developing countries. The purpose of the document is to provide the basis on which the centres' strategies and operational plans for research in this area can be elaborated, with clear indication of the benefits to be obtained by working together in certain strategic aspects of the research agenda. In addition, it can serve as an agenda/focal point for more collective collaboration with AROs, donors, and NARS. A draft of this document will be presented at the 1999 meeting of the CICRTRC for comment and suggestions for improvement, followed by a consultation and feedback process with our partners.

## Annual planning meetings

Beyond the interaction that takes place in the normal development of joint activities (see later), the group meets once a year to co-ordinate and plan activities. Since its inception, the group has met twice. The first meeting was held in July 1997 at the Natural Resources Institute in Chatham, England where the outline of the strategy document was prepared and a three-year workplan

elaborated. This was discussed, modified and then endorsed at last year's CICRTRC meeting.

The second meeting coincided with two important international postharvest fora that were held in Rome in June 1998. These were the meeting to present and demonstrate FAO's recently created Information Network on Postharvest Operations, INPhO, and the 10th Executive Seminar of the Group for Assistance on Systems relating to Grain After-harvest (GASGA).

## Information Network on Postharvest Operations

At the INPhO meeting, a useful interaction was held among stakeholders as suppliers and users of the information that will be available through INPhO. Working groups provided suggestions as to the future development and management of the database. The discussion centred around whether INPhO should attempt a near comprehensive collection of postharvest information, or act more as a hub of an electronic network which facilitates links among Internet sites.

The CICRTRC Postharvest Working Group made a commitment to work with INPhO by providing information on its research, lists of publications, and training opportunities.

## Group for Assistance on Systems relating to Grain After-harvest

The 10th GASGA Executive Seminar was titled "CGIAR Postharvest Research and GASGA: Working for Effective Postharvest Systems". This was an important opportunity to initiate a dialogue between the GASGA institutions (ACIAR, CIRAD, FAO, GTZ, and NRI) and those International Agricultural Research Centres (IARCs) most involved in postharvest research. CIAT, CIP, IFPRI, IITA, and IIRRI represented the IARCs. Several resolutions were passed during the concluding session of the meeting. One of these put into motion the organisation of the ICW'98 breakfast meeting which was held on 26 October 1998, co-sponsored by GTZ and IDRC [see separate item in this issue of *PH Newsletter*]. The key theme addressed at this meeting was the impact of postharvest research and mechanisms for promot-

ing investment in postharvest research and development.

It was also agreed in Rome that, in principle, GASGA members should consider "the possibility of expansion to a more inclusive grouping, including those centres with significant postharvest interests and activities, other donor organisations or agents involved in postharvest development, and other organisations active in postharvest issues". The CICRTRC Postharvest Working Group would view this development positively since it could contribute significantly to the capture of synergies among the institutions involved.

Discussions also took place between CICRTRC Postharvest Working Group members and FAO specialists regarding input into the next round of commodity projections. Prospects for closer collaboration here are now being pursued.

## On-going collaborative activities

The principal collaborative ongoing activities among the members of the CICRTRC Postharvest Working Group, some of which involve other IARCs, are:

- IFPRI-CIAT, in collaboration with the Postharvest Technology Institute (PHTI), is undertaking a project in Vietnam on the "Potential of the starch industry as a strategy for promoting rural industrialisation and income growth". This is a one-year pre-feasibility project due to conclude in December 1998.
- CIP-IITA-ICRAF-ILRI ran a short training course on "Methods for analysing agricultural markets" from 9 to 15 November 1998 at ICRAF House, Nairobi for collaborators in East and southern Africa. Participants from the CIAT-supported regional bean improvement networks in East Africa also attended the course.
- CIP, with support from CIAT, is undertaking a project with local governmental and non-governmental institutions on "Arracacha processing" in Cajamarca, Peru. This is also a one year pre-feasibility project, which was due to end in December 1998.
- A workshop on "Enhancing postharvest technology generation and dissemination in Africa" was held in Cotonou, Benin on 26-28 October 1998. It was organised by IITA, but with participation by CIP scientists from the region.

\* The Committee on Inter-Centre Root and Tuber Crops Research (CICRTRC) within the Consultative Group for International Agricultural Research (CGIAR) has a working group on postharvest technology and marketing. This report of the activities of the group by its chairman, Rupert Best (r.best@cgiar.org), first appeared in the January 1999 issue of *CICRTRC News*.

# CURRENT AWARENESS

## NEWS

### CA2001 Conference

A "pre-announcement" has been distributed for the 8th International Controlled Atmosphere Research Conference, to be held in Rotterdam, The Netherlands on 8–13 July 2001. The aim of the conference is to present the latest results in postharvest handling of fresh agricultural products—fruit, vegetables, edible mushrooms, and ornamentals. Major topics of the scientific program will include: quality control; postharvest physiology, biochemistry, and molecular biology; modelling product quality; CA technology; MA packaging; insect pest and infection control; and operations and logistics.

For further information, contact:  
Agrotechnological Research Institute (ATO-DLO)  
P.O. Box 17, 6700 AA Wageningen, The Netherlands  
Fax: +31 317 475 347  
Internet: <<http://www.ato.dlo.nl/CS2001>>  
Email: <[CA2001@ato.dlo.nl](mailto:CA2001@ato.dlo.nl)>.

## POSTHARVEST PUBLICATIONS AND INFORMATION

### New Asian aflatoxin newsletter

The first issue of AFTOXNEWS, the newsletter of the Asia Working Group on Groundnut Aflatoxin Management, was published in January 1999. It contains an introduction from the editors; articles on aflatoxin problems, research, and management in India, the Philippines, and Vietnam; details of recent visits and exchanges, and of a forthcoming training course; advance notice of some workshops; a list of recent publications of interest; and an appeal for contributions to this new newsletter.

Editor-in-chief of AFTOXNEWS is Prof. Dr Phan Lieu, Technical Coordinator of the Asia Working Group, and Director of the Oil Plant Institute of Vietnam.

On behalf of the working group, Professor Phan invites contributions for future issues, from scientists in member countries of the group and elsewhere. Topics of particular interest are:

- Enhancing awareness of aflatoxin risk to consumers, farmers, traders, and processors; and involving administrators and policymakers, NGOs etc.
- Surveys conducted to document the occurrence and distribution of aflatoxin in groundnut seed and products.
- Agronomic management options to reduce aflatoxin risk.
- Identification of resistance among local cultivars/land races.
- Other related research activities.

Professor Phan notes that, initially, the newsletter will be published twice a year, in January and June. He therefore requests that items be sent to him, preferably by email, before May and November. His addresses are:

Prof. Dr Phan Lieu  
Director  
Oil Plant Institute of Vietnam  
171–175 Ham Nghi Street  
District 1, Ho Chi Minh City  
Vietnam  
Fax: +84 8 824 3528  
Email: <[opi.vn@hcm.vnn.vn](mailto:opi.vn@hcm.vnn.vn)>.

### Postharvest Biology and Technology ONLINE

*Postharvest Biology and Technology* is an international journal on biological and technological research in the areas of postharvest storage, treatment, quality evaluation, packaging, handling and distribution. Its

publisher, Elsevier Science, has announced several additions to the content of the World Wide Web home page for the journal. The new online features are:

- Tables of Contents now with full abstracts!
- Author Index
- Subject Index
- Search abstracts, keywords and authors
- Guide for Authors—how to prepare and submit your manuscript
- OASIS—online manuscript tracking information for authors

The journal's web site is at <<http://www.elsevier.nl/locate/postharvbio>>.

### Mycotoxin poster

VICAM, a U.S. company making test kits for mycotoxins in foodstuffs, has produced an informative poster covering the occurrence, health effects, and testing for aflatoxins, deoxynivalenol, fumonisins, ochratoxin A, and zearalenone. For copies, contact VICAM at fax +1 617 923 8055, or <email [vicam@vicam.com](mailto:vicam@vicam.com)>.

### Nonconventional methods for the control of postharvest disease and microbiological spoilage

The COST (Cooperation in Science and Technology) program of the European Commission held a workshop on this topic in October 1997, the proceedings of which are now available. This is a substantial volume which contains 2 keynote papers, 10 papers relating to the control of spoilage of minimally processed fresh fruit and vegetables, 18 papers on biological control of postharvest disease, and 14 papers on physical treatments.

For further information, contact:

Professor Paolo Bertolini  
University of Bologna, Italy  
Fax: +39 051 765 049  
Email: <[bertolini@agrsci.unibo.it](mailto:bertolini@agrsci.unibo.it)>. ■

### CICRTR...from page 9.

- Joint publication by CIP of the French language edition of the marketing methods volume in collaboration with CIRAD and with contributions by social scientists from IFPRI, CIAT, CIP as well as several other CG Centers—Scott, G. and D. Griffon (eds). *Prix, produits, et acteurs. Méthodes pour analyser la commercialisation*

*agricole dans les pays en développement*. 1998. Edition Karthala. 498p. \$23.

### Prospective future collaborative activities

Follow-up projects to those being undertaken in Vietnam and Peru will be prepared.

In Latin America, CIP and CIAT postharvest technology and enterprise

specialists will serve on steering committees and act as resource persons in projects managed by the respective centres and supported by IDRC.

For further information on CICRTR activities, contact:

Greg Scott, CIP,  
Apdo. 1558, Lima 12, Peru  
Fax: +51 1 349 5638  
Email: <[g.scott@cgjar.org](mailto:g.scott@cgjar.org)>. ■

# CURRENT AWARENESS

## NEWS

### Food safety conference

An International Food Safety Conference will be held in Melbourne, Australia on 28–29 September 1999, organised by Food Science Australia. The provisional program includes topics such as a review of current food hazards, effectiveness of control processes, customer/consumer perceptions, food control resources, risk assessment, auditing, state, national, and international perspectives, and new processes.

For further information, contact the conference secretariat: fax +61 3 9742 0201; email <alison.johnson@foodscience.afisc.csiro.au>; or visit the conference home page at <www.foodscience.afisc.csiro.au/conf/conf99.htm >.

### New IRRI External Relations Director

Dr William G. Padolina, a distinguished government leader, scientist, and academic, has been appointed Director for External Relations of the International Rice Research Institute (IRRI), whose headquarters are at Los Baños in the Philippines.

As Director for External Relations, Dr Padolina will lead a number of different units, all of them involved, in one way or another, with IRRI's research partners. These units are responsible for resource mobilisation, relations with the host country, IRRI's research activities in other countries, as well as matters pertaining to intellectual property rights. Also, Dr Padolina will oversee the training of rice scientists from the Philippines and other countries, a large publishing program, the world's most important rice library, and "Riceworld", a museum devoted to rice.

Dr Padolina is a former Cabinet member in the Philippine Government: he was Secretary of the Department of Science and Technology (DOST) from 1995 to 1998. He also served as Assistant to the President of the University of the Philippines (UP) System, Vice Chancellor for Academic Affairs at UP Los Baños (UPLB) and as Director of the National Institutes of Biotechnology and Applied Microbiology at UPLB.

## POSTHARVEST PUBLICATIONS AND INFORMATION

### Disease control and storage life extension in fruit

This is the title of ACIAR Proceedings No. 81\*, recently published. It contains the papers presented at an international workshop organised by the Postharvest Technology Program and held at Chiang Mai, Thailand on 22–23 May 1997.



The proceedings contains some 25 papers giving the results to that time of ACIAR Project PHT/93/13, which ran from January 1994 to the end of 1997. The objectives of the project, which was a collaboration between research groups in Thailand and Australia, were:

- to develop non-chemical control methods for postharvest diseases of tropical fruit, and assess their impact on fruit quality; and
- to investigate the effects of key preharvest variable and postharvest treatments on fruit quality.

In Australia, the work focused mainly on mango with some studies on avocado, while in Thailand a wider range of fruits, including mango, rambutan, mangosteen, longan, and lychee, was investigated during the project.

\* Coates, L.M., Hofman, P.J., and Johnson, G.I., ed. 1998. Disease control and storage life extension in fruit. Proceedings of an international workshop held at Chiang Mai, Thailand, 22–23 May 1997. ACIAR Proceedings No. 81, 166p.

Among the achievements of the project were:

- the identification of effective biological control agents for suppressing anthracnose in mango, avocado, and lychee, stem-end rot in mango, and rambutan and longan fruit rots;
- identification of a range of pre- and postharvest factors affecting fruit quality and disease resistance; and
- much improved understanding of the aetiology of stem-end rots in mango.

Copies of the proceedings can be ordered from:

Bibliotech  
GPO Box 4  
Canberra ACT 2601  
Australia

The cost is \$AU25 per copy, plus airmail postage and packaging charges as follows:

Australia—\$5 first book, \$3 second book, \$1 thereafter

Asia Pacific—\$8 first book, \$5 each additional book

Rest of world—\$12 first book, \$9 each additional book.

Alternatively, copies may be ordered on the ACIAR home page <www.aciar.gov.au>.

ACIAR's distribution policy is to provide complimentary copies of its publications to developing country libraries, institutions, researchers, and administrators with an involvement in agriculture and to any scientist involved in an ACIAR project. Please write to the address below if you believe you are eligible to receive a complimentary copy.

The Communications Manager  
ACIAR  
GPO box 1571  
Canberra ACT 2601  
Australia

### Fruit disease web site

Dr Wojciech Janisiewicz at the USDA's Appalachian Fruit Research Station has started a new web page for displaying information on biological control of postharvest diseases in fruit: go to <http://www.intrepid.net/afrs/afrs.htm>, then click "Link to other sites". Dr Janisiewicz invites those working in this field to send an update on their activities. You can send information which relates to the various sections, or items that you would like to post on the message board. Further information: <WJanisie@afrs.ars.usda.gov>.

More "Current Awareness" on page 10.

# CURRENT AWARENESS

## NEWS

### Fumonisin B<sub>1</sub> report imminent

The findings of the United States National Toxicology Program/Food and Drug Administration studies on fumonisin B<sub>1</sub> will be formally announced on 21 May 1999. The results of the two-year studies on rodent carcinogenicity will enable decisions to be made on regulation of this important mycotoxin. The data will be available on the NTP web site at about that time. On 28–30 June 1999, there will be a meeting to discuss the toxicology of fumonisin organised by the International Life Sciences Institute, the National Toxicology Program and the Food and Drug Administration. The details are on the ILSI web site <[www.ils.org](http://www.ils.org)>.

### World Congress of Food Science & Technology

The 10th World Congress of Food Science & Technology will be held in Sydney, Australia on 3–8 October 1999. The theme of the congress is "An integrated and value-added agri-food chain in a global food industry". The technical program will begin each day with plenary sessions in which speakers address key issues and developments within the industry. These will be followed by four sessions running concurrently focusing on specific broad areas of interest. Apart from invited speakers, there are opportunities for the delivery of proffered papers and for the organisation of workshops on particular

topics. These will be selected at the discretion of the organising committee. The 1999 World Food Expo will be a major component of the congress.

For further information, contact the congress secretariat: fax +61 2 9954 4327; email <[iufost10@aifst.asn.au](mailto:iufost10@aifst.asn.au)> or visit the congress web site at <[www.aifst.asn.au](http://www.aifst.asn.au)>.



### International mycotoxin conference

A joint FAO/WHO/UNEP international conference on mycotoxins was held in Tunis, Tunisia on 3–6 March 1999. This was the third such conference organised by these agencies, and was stimulated by factors such as newly emerging mycotoxins,

progress made in sampling, testing and monitoring programs and in decontamination procedures, the issuing of mycotoxin regulations by a number of countries, and growing concern about the health effects of specific mycotoxins.

The objectives of the conference were:

- to increase the awareness of policymakers about the health risks and potential economic impact of mycotoxin contamination of food products and animal feeds, including its impact on international trade of these commodities;
- to provide a forum for the exchange of current scientific and technical information related to mycotoxins;
- to promote the harmonisation of mycotoxin regulations and control procedures; and
- to make recommendations on strategies and programs for enhancing the assessment, prevention, and control of mycotoxin contamination, thus ensuring the safety and wholesomeness of food supply.

The program for the meeting included presentation of some 15 specialist papers, followed by a roundtable discussion. We hope to bring you a full conference report in the next issue of *PH Newsletter*.

### Agricultural communicator's workshop

The College of Tropical Agriculture and Human Resources, University of Hawaii–Manoa will be running a workshop for agricultural communicators of the Pacific region in Honolulu on 11–14 April 1999. Workshop organiser, Jim Hollyer, says that the overall aim is "to get all of the people in the region who train or support others with software and media needs to get together and learn what we can all do better ('train the trainer' if you wish) for the benefit of the entire Pacific region". "It is becoming obvious", he says, "that many of us have a lot of access to internal information but that information is stuck on the shelf and is hard to share with other places in the Pacific region, thus this workshop." Further information can be found at <<http://www.adap.hawaii.edu/adap/pacw/>> or by contacting Jim Hollyer; email: <[hollyer@hawaii.edu](mailto:hollyer@hawaii.edu)>. ■

## ACIAR Postharvest Newsletter

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The Australian Centre for International Agricultural Research was established in June 1982 by an ACT of the Australian Parliament. The Centre encourages research aimed at identifying agricultural problems in developing countries and finding solutions to such problems. It is empowered both to commission research and to communicate the results of such research to interested persons and institutions.



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