



Newsletter

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Goat farmers have found the hybrid leucaena KX2, developed in an ACIAR project, an excellent source of quality protein for their animals.

Demand outstrips supply for new legume forage

A vigorous *Leucaena* hybrid that excelled in trials during an ACIAR project is now proving very popular with smallholders in Vietnam. Australian project leader Dr Max Shelton reports that rural communities in northern Vietnam are now benefiting from the technology arising from the ACIAR project through a pilot program funded by AusAID. Farmers have been so impressed with the fast growth, the high quality and excellent palatability of the legume foliage for animals, that demand for seedlings keeps rapidly outstripping supply.

The ACIAR project, 'New leucaenas for Southeast Asia, Pacific and Australian Agriculture', identified the enormous potential of multipurpose leguminous trees in tropical farming systems of Southeast Asia and the Pacific. AusAID followed on through its CARD (Capacity Building for Agricultural and Rural Development) project, which has conducted training courses and distributed hybrid leucaena seedlings to a network of smallholders wanting feed for dairy cows, beef cattle and goats. As an added benefit the leucaena is a ready supply of fuelwood for cooking.

Continued on next page



Demand outstrips supply for new legume forage continued

This CARD project arose from the need to address the longstanding problem of year-round forage quality and acute dry season forage scarcity faced by the smallholder livestock farmers of north Vietnam. Multipurpose tree legumes are a part solution to this problem, provided they are incorporated into the existing farming systems.

Partner agencies

The ACIAR project fostered an excellent working relationship between staff from the University of Queensland and the Vietnamese institutions (the Vietnam National



Vietnamese farmers learn about the benefits of the hybrid leucaena during an extension workshop.

University, Hanoi University of Science (VNU); the National Institute for Animal Husbandry, Goat and Rabbit Research Centre (GRRC); the Forest Science Institute of Vietnam, Research Centre for Forest Tree Improvement (RCFTI)). This relationship has prospered during the CARD project. Each group brought a unique set of skills and ideas to the project, culminating in a synergy for effective project implementation.

Achievements

Because originally the *Leucaena* hybrid (known as KX2) could not be propagated by seed the scientists had to develop a robust technology to produce planting material from cuttings. Vietnamese staff at the RCFTI station at Da Chong developed and refined vegetative propagation techniques for a mass production process to furnish seedlings to farmers. The station has now produced over 25,000 rooted cuttings for distribution. Farmers receive an information package on appropriate management and utilisation along with the KX2 seedlings.

The systems promoted by the project were of particular relevance to smallholder dairy farmers and goat producers. In the dairy districts, fertilised tropical grasses are the major

forage source but they lack the highly digestible protein necessary for high milk yields. Farmers feeding their animals on forage from KX2 and other multipurpose trees (MPTs) with a high content of quality protein have substantially reduced the amount of costly concentrate fed to their animals, without loss of production.

Goat farmers, often located in remote areas and with little experience with animal husbandry, have found that KX2 and other MPTs fitted well with existing agroforestry systems and could be grown as small plots, boundary lines or hedgerows to utilise as required. A component of the project is an information package on goat husbandry, which instructs farmers on the use of MPTs as feed sources.

Hybrid *Leucaena* seed production systems, evaluated and developed at RCFTI as a long-term solution to the problem of vegetative propagation, have produced some hybrid seed, but the systems need further refinement before large-scale seed production is possible.

Contacts

Professor Le Van Khoa
Vietnam National University Hanoi
Email lvkhoa@hotmail.com

Dr. H.M. Shelton
The University of Queensland
Email m.shelton@mailbox.uq.edu.au

ACRONYMS and Abbreviations

AFFA	Agriculture, Forestry and Fisheries - Australia
APEC	Asia-Pacific Economic Cooperation
AusAID	Australian Agency for International Development
CARD	Capacity Building for Agricultural and Rural Development
CIFOR	Centre for International Forestry Research
CIMMYT	International Maize and Wheat Improvement Centre
CSIR	Council of Scientific and Industrial Research (India)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
IARC	International Agricultural Research Centre

IT	information technology
MMAF	Ministry of Marine Affairs (Indonesia)
NACA	Network of Aquaculture Centres in Asia-Pacific
ND	Newcastle disease
NGO	Non-government organisation
NifTAL	Nitrogen Fixation by Tropical Agricultural Legumes
NIPP	National Institute of Plant Protection (Vietnam)
PNG	Papua New Guinea
R&D	Research and Development
USAID	United States Agency for International Development
WA	Western Australia
WTO	World Trade Organisation

ACIAR Newsletter No. 39
ISSN 0813-7234

The ACIAR Newsletter is published twice yearly. Editor: Janet Lawrence

To be placed on our free mailing list write to: ACIAR, GPO Box 1571, Canberra ACT 2601 Australia

E-mail: comms@aciar.gov.au
Website: www.aciar.gov.au

Rebuilding agriculture at East Timor University

The devastated University of East Timor is back in business and its agricultural faculty once more accepting students. When ACIAR Deputy Director **John Skerritt** visited in October 2001 he noted that the University had now completed two semesters of teaching, and he was most encouraged by its progress. At the time of his visit student enrolment and orientation week activities were in full swing.

A major purpose of John's 3-day visit was to attend a meeting to inaugurate the ACIAR project titled 'Rehabilitation of the Agriculture Faculty of the University of East Timor'. The project is funding a 'twinning arrangement' between the Faculty of Agriculture and agricultural faculties from selected Australian Universities, under the leadership of Associate Professor John Janes (Curtin University, WA). It is designed to help with training for staff of the revitalised faculty, agriculture curriculum design and rehabilitation of the University experimental farm.

The project also intends to engage East Timorese academic staff and students in necessary research and development activities as a basis for the establishment of future research programs in East Timor. Such projects could provide a framework for interaction around which many other activities (including student project work and the establishment of international linkages) could be based.

John made the following observations: Already the Agriculture faculty has increased its teaching staff from 25 to 31 (plus three admin staff) and student enrolments are up. Sixteen students completed their theses in 2001, and a graduation ceremony is planned. The project's Australian and East Timorese team members recognise that graduates from the University will serve wider roles in East Timor than agricultural research or production,



At the University farm fourth year honours students built this house for their animals, which were bought from resources pooled together by their families. ACIAR is now helping to restore the University farm.

and they plan to introduce a strong business/agribusiness component in the degree so that many agriculture graduates can find work in the larger economy. At the same time there is the need for technical skills for those who become technicians and extensionists and/or return home to influence their village in practical farming methods.

Finally, there is a need to ensure that a small number of the very best students remain in East Timor in the longer-term to take part with staff in future agricultural research needs of the country. The main research resource will continue to be academics working together with groups of fourth year thesis students on their projects. While there has been no laboratory practical work possible yet, several groups of students have carried out field research for their fourth year honours thesis.

Two of these groups are already using the University experimental farm for livestock nutrition projects (their families pooled resources and bought the goats and cattle) and many more carry out projects in their home villages. Students will be involved in the rehabilitation of the farm as part of their training.

The interest of other donors in the University is also encouraging. USAID has now refurbished the library building on the main campus (as well as the main building). The Portuguese-refurbished economics building is extremely well maintained. The United Nations Development Program has set up a computer training facility with 20 internally networked computers, and IT training is run for staff and senior students. The Japan International Cooperation Agency is to refurbish two buildings next to the field station for use by the Agriculture faculty in farmer training activities and focusing on animal husbandry. And the World Bank, through the Department of Agricultural Affairs, will refurbish a high-level soil, plant and water analytical laboratory and has agreed to make it available for research and teaching by the University.

ACIAR's project will help the East Timorese build better English skills, which are vital for the success of further short-term training in Australia and also ensure that staff can access scientific literature and interact with collaborators in Australia. Good English is also essential for those selected to study in Australia as AusAID or John Allwright fellows in the years to come.

ACIAR and quarantine

ACIAR and many other development assistance agencies have become increasingly aware in recent times of the growing need among partner countries for assistance with quarantine matters. ACIAR Crop Sciences Research Program Manager **Paul Ferrar** writes about his experience at Agriculture, Fisheries & Forestry-Australia (AFFA) from November 2000 to February 2001, when he learnt much about international quarantine and identified possible areas of work for ACIAR.

The importance of quarantine to developing countries

Developing countries are becoming increasingly concerned about quarantine for two reasons—national biosecurity and trade.

National biosecurity As trade grows, and ever more tourists cross national borders, incursions of exotic pests, weeds and diseases are increasing. Agriculture and the environment are threatened; crop yields, jobs and wealth diminish when new problems spread in. The incursion of papaya fruit fly into north Queensland in 1996 is estimated to have cost Australia about \$A100 million in eradication costs and value of lost trade. Investment in quarantine to prevent such outbreaks in the first place can therefore be highly cost-effective.

Trade Many developing countries are looking to increase rural development and prosperity by growth of cash crops, especially for export markets. World Trade Organisation agreements, particularly the Sanitary and Phytosanitary (SPS) Agreement, require countries to provide quarantine-related information to enable importing countries to conduct risk analyses. The countries themselves may also need to carry out *risk analyses* on commodities that they import.

These operations must be scientifically validated to be acceptable to SPS, and many developing countries are finding



ACIAR has funded help for developing countries to improve local capacity in pest, disease and weed diagnosis.

that they do not have enough knowledge of their pests, or understanding of risk analysis, to fulfil this condition. The following outlines some specific problems faced by many developing countries.

Lack of knowledge To provide data for risk analyses, countries need: 1) more comprehensive surveys to investigate which pests, diseases and weeds occur where; 2) better

taxonomy to identify what has been collected; 3) better ability to retrieve information that has been collected; 4) better access to reference specimens and world literature; 5) more biological information on the habits of particular target species; 6) better knowledge of how to control or manage the pest species.

These are all subjects on which ACIAR has had many projects, and can develop many more to assist developing countries.

Need for better quarantine working systems and animal and plant health strategies

Some of this need is better answered by development assistance rather than research cooperation through ACIAR. However, ACIAR research and capacity enhancement can: 1) improve technical ability to conduct pest risk analyses; 2) help development of national plant and animal health strategies, and national quarantine policies; 3) assist in developing strategies for monitoring incursions into vulnerable areas; 4) assist in developing incursion management plans; 5) improve local capacity in pest, disease and weed diagnosis.



An Australian scientist at work on the 'front line' in the war against incursions of exotic pests, weeds and diseases. Photo AQIS

Ian Bevege retires after 11 years with ACIAR

The end of 2001 saw the retirement of one of ACIAR's most prominent officers, Dr Ian Bevege. Ian was Principal Advisor and Manager of ACIAR's 'IARC' Program, managing the Australian Government's annual contribution to the International Agricultural Research Centres. His time was occupied leading the program or travelling extensively overseas—in fact at the year's end he received the 'Marco Polo' award as the most travelled ACIAR staff member for 2001.

Ian's career started as a forestry cadet in Queensland, and after graduating with first class honours and completing his PhD he spent the first part of his working life as a forest researcher. In 1981 Ian became involved with the Australian International Development Assistance Bureau (AIDAB—now AusAID) when the Forestry Service won a contract to help grow eucalypts in southern China. Later he joined AIDAB as a Deputy Director General then two years later became Executive Director of the AIDAB Centre for Pacific Development and Training in Sydney.

When Ian was seconded to ACIAR in 1991 by then Director George Rothschild he became instrumental in developing and establishing a new international forestry research entity, CIFOR. Once CIFOR was established



Inveterate traveller Ian Bevege (second right) pauses with Australian High Commissioner Sue Boyd and (L-R) ACIAR Deputy Director John Skerritt, PNG/Pacific Country Manager Bernard Maladina and AusAID Counsellor John Davidson during a visit to Suva, Fiji in May 2001.

he turned his energies to the growth and extension of the ACIAR/IARC Program. He had a strong commitment to the development of agriculture, forestry and fisheries in Papua New Guinea, and also fostered relationships between ACIAR and agencies such as AusAID.

Ian acted as Director of ACIAR in the months between the departure of Dr George Rothschild and the commencement of Dr Bob Clements.

He contributed wise counsel and scientific leadership in many aspects of ACIAR's functions, and has left behind a strong legacy that will continue to influence ACIAR's future.

Ian declares that he intends to take it easy after so many busy years working for forest research and agricultural development. We'll believe that when we see it! All the best, Ian, for a long, healthy and happy retirement.

Australia, like other developed countries, has an obligation under the SPS Agreement to help developing countries in this field of work. ACIAR is well placed to assist, and so too are AusAID and AFFA. With a view to avoiding duplication or working at cross-purposes, and to getting maximum complementarity and synergy between the different efforts, these agencies have formed a Quarantine Capacity Building Network. I represent ACIAR on this network, which meets regularly to exchange information and plan parallel or joint activities.

ACIAR programs relevant to quarantine and biosecurity

Agricultural Development Policy

Policy matters relating to quarantine; studies of impacts of SPS on developing countries' exports and trade.

Animal Sciences Projects to study animal and bird disease and parasite diagnosis and control (includes vaccines and the control of rodents, exotic bees and bee mites).

Crop Sciences All pre-harvest crop protection work—insect pests, plant

nematodes and mites; diseases caused by viruses, phytoplasmas, bacteria and fungi; strong focus on diagnosis, biological studies, biological control and Integrated Pest Management; also on innovative information systems and computer-aided learning systems.

Fisheries Biosafety of movement of breeding material in aquaculture; epidemiology and management of fish and prawn diseases of quarantine significance; spoilage of fresh cured and dried fish products.

ACIAR and quarantine continued next page

Value for ACIAR and personal gain for Youth Ambassador

In 2001, **Brett Nietschke** spent 7 months in Hanoi, Vietnam as part of AusAID's Youth Ambassador for Development Program. During this time he worked at a government research facility, the National Institute of Plant Protection (NIPP) on an ACIAR project. Here he reflects on his experience:

I worked on ACIAR's crops sciences project titled 'Bioherbicide development for cereals in Integrated Weed Management' (CS2/98/018). My role was to assist Institute scientists evaluate a native fungus (*Exserohilum monoceras*) for use as a bioherbicide in controlling barnyard grass (*Echinochloa crus-galli*), the major weed infesting rice crops in Southeast Asia.

At NIPP I was involved in a range of laboratory, screen-house and field experiments. Our aim was to determine the impact of temperature, humidity and barnyard grass plant-age on the efficacy of the bioherbicide. Our trials proved that under optimum lab and screen-house conditions the disease produced a high virulence.

I was soon accepted at NIPP and gained the respect of my colleagues. I felt I was able to share my knowledge



Brett at work with Vietnamese colleagues Mrs Hien and Mr Thanh.

in crop research to help ensure we conducted good quality research. In turn, my NIPP colleagues taught me about tropical agriculture, particularly rice production, which up until then I knew little about. It was therefore a very stimulating environment to be working in.

I also learnt that ACIAR is highly regarded at NIPP. Several ACIAR projects are currently being undertaken at the Institute and it was a highlight to have the ACIAR Board of Management visit us while they were in Vietnam last July.

I truly enjoyed my time in Vietnam. Not only did I grow professionally but I also grew personally from my experience. I thoroughly enjoyed living and working in a developing country and experiencing another culture. I made many new friends at NIPP who no doubt I will see again one day. In fact I enjoyed my time so much that I am currently trying to find work in a developing country to continue in the field of international rural development.

ACIAR and quarantine continued

Forestry Risk assessment and diagnosis of exotic tree diseases such as eucalyptus rust, a tropical American disease threatening eucalypts and other Myrtaceae such as cloves in Asia and the Pacific; technical guidelines for safe movement of germplasm; surveys of forest health and potential threats of insects and fungal pathogens to tree plantations.

Postharvest Postharvest disinfection of grains and fruits; sanitary aspects of processed foods such as microbiological or mycotoxin contamination, or presence of pesticide residues.

Current projects and possibilities for ACIAR

Projects active or under development include:

- Huanglongbing disease (Asian citrus greening) (project under development)
- Fruit flies (under way in PNG and Vietnam; requested by Indonesia)
- Blood disease and other banana diseases (project in early stages of preparation)
- PNG national weed survey and management strategy (project under development)

- Quarantine training and information software package (so far produced in Mandarin; now requested by a number of other countries)

Work is also in progress, in planning or under consideration on surra (*Trypanosoma evansi*), classical swine fever, Nipah virus, and white spot and other prawn diseases.

The need is huge, but if we select important areas of work and make a start, real progress will occur. Our partners are likely to be very receptive, and ACIAR will be able to achieve good practical impacts over a wide area.

Paul Ferrar
ACIAR

New agreements in place

Indonesian fisheries arrangement

On 16 November 2001 ACIAR signed a new Indonesian Fisheries Arrangement with Indonesia's Ministry of Marine Affairs and Fisheries (MMAF). The Australian Ambassador Richard Smith signed on behalf of ACIAR and the Minister Rokhmin Dahuri signed on behalf of MMAF.

ACIAR has had a strong program of joint research with the Government of Indonesia since 1983. The new Arrangement allows for both

governments to continue cooperating in research for improving marine and fisheries productivity, thus contributing to sustainable economic growth. New technologies and practices will bring benefits to both Indonesia and Australia.

The Ministry and ACIAR are currently working on seven distinct projects, and many exciting results are emerging. In July 2002 they will highlight all of their joint projects in an exhibition in Jakarta. A forum will showcase the excellent work that the two countries have produced together, both in the past and during the current project research.

Stronger links between Australia and India

India and Australia have further strengthened their cooperation in agricultural research with the signing of an agreement between ACIAR and the Indian Council of Scientific and Industrial Research (CSIR). The Australian High Commissioner to India, Ms Penelope Wensley and the Director General of CSIR, Dr Mashelkar signed the memorandum of understanding (MoU) on 18 January.

CSIR and ACIAR have worked together successfully on a number of projects in recent years. The MoU formalises collaboration between the two organisations, and is intended to facilitate further agricultural research projects and exchanges between Indian and Australian scientists.



The Australian Ambassador Richard Smith and Minister for Marine Affairs Rokhmin Dahuri sign copies of the new Indonesian Fisheries Arrangement.

Workshop announcements

- **Training Course on Grouper Hatchery Production**, 1–21 May 2002, Bali Indonesia. This course will be held at the Gondol Research Institute for Mariculture in Bali, Indonesia. It is organised and supported by the Ministry of Marine Affairs and Fisheries, Indonesia, the Network of Aquaculture Centres in Asia-Pacific (NACA), ACIAR and Asia-Pacific Economic Cooperation (APEC). It is one of the activities of the Asia-Pacific Grouper Network. For full details contact the Network at grouper@enaca.org.
- **Second International Conference on Rodent Biology and Management (ICRBM)**, 28 October to 1 November 2002. To be held at the Novotel Coralia Bogor Resort, Indonesia. ACIAR is a sponsor of this conference and there will be major contributions from researchers involved in project AS1/1998/036, *Management of rodent pests in rice-based farming systems in Southeast Asia*. Further details are available at www.icrbm.com or contact grant.singleton@csiro.au
- **International Seminar on herbicide resistance management and zero tillage technology in rice-wheat cropping systems**, 4–6 March 2002. To be held at the CCS Haryana Agricultural University, Hisar, India.

ACIAR is sponsoring this workshop being organised in conjunction with project CS1/1996/013 *Herbicide-resistant weeds of wheat in India and Australia: Integrated management* by the Chaudhary Charan Singh Haryana Agricultural University, the Punjab Agricultural University, Adelaide University and the Australia–India Council. The workshop will focus on building bridges between research and extension and will help participating scientists to scale up research innovations in herbicide resistance management and zero tillage technology. Further details are available from Dr Gurjeet Gill (gurjeet.gill@adelaide.edu.au) or Dr. R.K. Malik (parveen@hau.nic.in).

Progress through people-centred development

ACIAR's Country Manager for Southern Africa, **Ena van Rensburg**, presented a paper titled 'Incorporating the gender perspective into the design and implementation of agricultural research' to the annual country managers meeting held in New Delhi, India last year. The following is a synopsis of her presentation:

Ena defined gender perspective as the socially constructed roles and responsibilities of both women and men in a particular location or culture and the social structures that support them. Her ideal is gender equity, where women and men participate as equals, have equal access to resources and enjoy equal opportunities to exercise control. We are moving towards this as the accepted state in the developed world today, while in the developing world men are generally more visible

and have recognised roles compared to women. Moreover men are paid for productive work. In Ena's words: 'Gender inequalities prevail in developing countries, where women form the major workforce in rural economies, yet they have limited access to productive resources and are usually the poorest. They have little or no influence in the political, economic and social decision-making of their society.'

Efforts were made to counteract the situation when in the mid-1970s the 'women in development' (WID) approach gained ground. It stressed a focus on women and their situation as a specific group, frequently involving only women as the participants and beneficiaries. Meanwhile the bulk of developmental thrust concentrated on economic growth without including

women's views in policy making and planning, with the ironic consequence that women continued to be marginalised.

Thus in the 1980s there arose a move to counter this situation. It came to be known as the Gender and Development (GAD) approach. In other words the roles of both women and men and their interactions with one another are considered. It shifts the focus from women as a group to the socially determined relations between men and women. It is people-centred development, enabling women's participation in the mainstream of development, and thus lessens the risk of marginalising women.

People-centred development has evolved from realisation that the people who are the intended beneficiaries must be fully included

Introducing 'PestNet'

One of ACIAR's goals is to improve the spread of information related to agriculture, and we feel that our partners may be interested to learn of a very successful venture in this—PestNet.

PestNet is an e-mail based service, run by volunteers, that was set up for Pacific Island countries to receive instant information on quarantine and crop pests and diseases. It provides online discussion, and a question and answer service through which international experts assist people in the Pacific at no cost. Since its launch in December 1999, nearly 300 people worldwide (including 22 Pacific Island countries) have joined and posted more than 650 messages. PestNet was registered in Fiji as an NGO on 21 June 2000.

Following this very successful launch in the Pacific, PestNet is now inviting

membership more widely, and particularly from Southeast Asia and other parts of Asia. There are many common interests between these regions, and exchange of news and views could be beneficial to all. PestNet is open to anyone who has a question or wants to share information on issues about plant protection, including quarantine. PestNet aims to assist with:

- information on pests, diseases and weeds and their control
- alerts on new incursions or threats to countries in the region and elsewhere
- facilitating information exchanges and discussions between plant protection practitioners
- inquiries and discussions on pesticides, pests, crops losses, IPM, in relation to good crop husbandry practices
- circulating newsletters and notices
- announcements on workshops, seminars, symposia and conferences

Membership is free, and is open to anyone with an interest in plant protection, both inside and outside Southeast Asia and the Pacific—government research, extension and quarantine services, scientific organisations, academic institutions, universities and schools, and the private sector. To join the group, simply e-mail pestnet-subscribe@yahooogroups.com.

Once you have received a message confirming the subscription of your email address to PestNet, you can send and receive messages. These go first to the volunteer moderators, who screen them for relevance to the network. You can also register yourself at the website www.yahooogroups.com which allows you to access all messages posted earlier on the website.

Please contact ACIAR if you wish to receive any further information on PestNet—or why not just send off your e-mail to the address above to subscribe!

and participating in a project. Care is taken to ensure that the development is not gender biased while taking into account the participation and position of women in the community and ensuring the real outcomes bring benefit to all.

Gender equity and development projects

The ultimate measure of the success of a development project is whether the project has met its goals, specifically in relation to whether the lives of the intended beneficiaries have improved.

In the case of agricultural research it is necessary to ensure that any

technology developed is fully accessible to the designated target group. A truly gender-sensitive development organisation must define its intention in a development project—will outcomes remain gender neutral (which leaves gender roles and distribution of resources and responsibilities between men and women intact), gender-specific (specially targeting either men or women while maintaining the status quo in relation to gender roles) or gender-redistributive (transforming existing distribution of responsibilities and resources between men and women in a more egalitarian direction)? In order to progress to the preferred

gender-redistributive technology, measurable indicators are needed for monitoring developments and benchmarking real outcomes and impacts.

Ena closed with a plea for the participation of more women in agricultural research and development organisations. Encouraging women in research and management would strengthen the internal gender sensitivity of such organisations, in relation to research design, implementation and extension—and this would be reflected in the greater empowerment of women in targeted communities.



People-centred development accounts for the participation and position of women in the community and ensures that real outcomes bring benefit to all.

Reader survey: Thank you

With the last ACIAR Newsletter we included a reader survey so that we can refine our distribution lists. We thank those who responded.

We are now inputting the information gathered.

It is not too late. With a view to serving our readership better we continue to welcome details of changes to your mailing address, email address, phone and fax numbers and an indication of your area of interest – all ACIAR activity, crops, livestock, forestry, fisheries etc.

When we have our new database in place we hope we can provide you with more timely advice of ACIAR activity of specific interest to you. The information we hold of course is used exclusively by ACIAR. We do not make our contact data available to non-ACIAR entities.

ACIAR's address and email details are contained on the back page.

ACIAR-IARC News

News from ACIAR's program with the International Agricultural Research Centres (IARCs)

Format change reflects name change for IARC meeting

The International Centres Week of the CGIAR, held annually in Washington, has changed to become the Annual General Meeting, and there has been an associated change in format. The two major changes are the inclusion of a business meeting for CGIAR members as a decision-making body rather than as a discussion forum, and a considerable shortening of the time for that discussion forum and reporting by IARCs on their work.

The meeting held in November 2001 was therefore reduced to three days, but that did not inhibit the pre-meeting and corridor meetings where it was very much business as usual—with intensive interaction among donors and between centres. This meeting remained a very useful event for ACIAR to benchmark and flag its activities and to liaise constructively with IARCs and donors. The summary below contains some of the main issues that arose at the meeting.

1. Formation of an Executive Council

An Interim Executive Council (IEC) was formed at the Durban meeting in May by amalgamating the existing oversight and finance committees and adding chairs of various CGIAR standing committees. ACIAR was a member of the IEC by virtue of its membership of the Finance Committee. The IEC met three times in Durban, Bonn and Washington and established task forces to develop the proposals for the Executive Council (ExCo), to transform the Technical Advisory Committee (TAC) to a Science Council, to develop the Challenge Programmes, and establish a System Office with a subgroup looking at Communications and Resource Mobilisation. ACIAR

(Ian Bevege) served on the task forces on the Executive Council and on Communications.

The task forces used their separate reports to prepare a synthesis paper that formed the basis of discussion and decision-making at the Annual General Meeting (AGM); the work of the Communications task force is ongoing. The AGM decided to disband the IEC and replaced it with the ExCo. Membership of ExCo is drawn from CGIAR members and sponsors with representation of the centres and stakeholders groups. Australia (ACIAR) is not a member, our region is represented by Japan for the time being.

2. Science Council

All but two members and the chair of TAC retired at the end of 2001. The Science Council was formally constituted at the beginning of 2002 under the chairmanship of the current TAC Chair (Emil Javier). The remaining two members will also serve on the Science Council. TAC and the CGIAR Secretariat are actively seeking nominations for the Council. So far there have been no nominations from among the Australian scientific community. The Council seeks balanced membership covering excellence in relevant science, research management and development policy as well as covering gender and industrialised/ developing country representation. Discussions are still under way to define the role of the Science Council vis-à-vis the Executive Council, particularly in regard to strategic planning, evaluation and the Challenge Programmes. The model will take some time to determine as there are elements of the current TAC's responsibilities that have yet to be incorporated in the new structures.

3. Challenge Programmes

There was intense debate around this topic in the stakeholder meeting, repeated in the business meeting and again in the first meeting of the ExCo. Most debate centres on two issues—the extent to which the Programmes should be a natural outgrowth of the recently adopted regional priority setting approach of CGIAR involving active participation of national agricultural research systems (NARSs) and stakeholders, and Programme financing. In response to an expressed wish by the Chair and some members (in particular the World Bank) to fast-track the Programmes, the IARCs have responded by preparing proposals on several topics. There are still issues to be resolved about funding for the new Programmes and their relationship to existing systemwide initiatives.

ExCo has resolved to push ahead with fast-tracking three Challenge Programmes from among the 10 proposals on the table. SC (TAC) will recommend the three to ExCo early this year, and if endorsed will move to full project preparation for decision by the next AGM in November. The CP proposals are: Water & Agriculture; Combating Desertification; Climate Change; Mountain Agriculture; Biofortification for Micronutrient Deficiency; Global Genetic Resources & Genomics; Animal Health & Production; Sustainable Agriculture in Central Asia and Caucasus (CAC); HIV/AIDS, Agriculture and Food Security; Africa.

Minutes of the meeting can be viewed on the CGIAR website: www.cgiar.org

Mrs Heather Crompton has administrative responsibility for ACIAR's program with the International Centres. Contact her at crompton@aciar.gov.au

Newcastle disease control methods adapted for Bhutan

Village chickens are kept throughout Bhutan and make up approximately 86% of the national poultry flock. These chickens are crucial role for the welfare of Bhutan's rural poor, as in many developing countries. They fulfil a wide range of functions, for instance, the provision of meat and eggs, food for special festivals, offerings for traditional ceremonies and petty cash. Local chickens require minimal external inputs, minimal human attention and cause minimal disruption to the environment.

It is generally acknowledged that improved poultry production is the most efficient and cost-effective way to increase the availability of high-protein food. Eggs can be stored under village chickens more easily than most foods of animal origin and are also an acceptable food in Bhutan, where Buddhist traditions are followed.

Newcastle disease (ND) is a major constraint to village chicken production in Bhutan, as is generally the case in developing countries where the disease is endemic. In recognition of this situation ACIAR has supported research into the control of ND since the 1980s. ACIAR has enabled researchers at the University of Queensland (UQ) to work with colleagues in developing countries to develop cost-effective and simple approaches to ND control. This research has supported the development of a commercial thermostable live ND vaccine (NDV4-HR) and another similar vaccine, strain I-2, that can be supplied without cost to developing countries wishing to produce the vaccine locally. Thermostable ND vaccines make possible the development of ND control programs in areas where the cold chain is unreliable or absent.

In addition to the vaccine, the ND control program has assisted in the following ways: development of laboratory techniques associated with the production of the I-2 ND vaccine, serological testing and isolation of the ND virus; recommendations and suggestions for producing information packages for farmers, extension



A woman from Bhutan and her chicken house. Village chickens make up approximately 86% of the national poultry flock.

workers, veterinarians and decision-makers; recommendations concerning the economic sustainability of the program through the implementation of both cost recovery and cost minimisation procedures; suggestions for utilising and marketing surplus chickens and eggs.

With the development of this ND control package, ACIAR has successfully fulfilled its research brief. The package can now be used within a development context and this is exactly what happened with the project in Bhutan. The Australian Agency for International Development



The Minister for Agriculture in Bhutan, the Honorable Dr Lyonpo Kinzang Dorji, launches the locally produced I-2 ND vaccine and an extension package in May 2001.

(AusAID) has provided funding to the Department of Agriculture and Livestock Support Services (DALSS) of the Royal Government of Bhutan and ND project personnel from UQ to implement a ND control project that includes the local production of the I-2 vaccine. The project commenced in September 1999 with a workshop on the production and testing of the vaccine and a separate workshop that dealt with the implementation of ND field trials, vaccination campaigns and an ND control program.

In May 2001, after the scientists had completed in-country testing, the Minister for Agriculture the Honorable Dr Lyonpo Kinzang Dorji launched the locally produced I-2 ND vaccine and an extension package. The Bhutanese DALSS intends to train extension agents and farmers both in the use of the vaccine and simple poultry husbandry practices appropriate for mixed farming systems, moves which should improve the livelihoods of rural and peri-urban farmers throughout Bhutan.

Robyn Alders
ACIAR project leader and AusAID consultant, robyn@tropical.co.mz

Gauging the effectiveness of rhizobial inoculation in Vietnam

For more than 40 years Australian legume farmers have used the technique of inoculating legumes with rhizobium bacteria to increase yields. ACIAR has funded much research in Southeast Asia to test the response of legume crops such as soybean, mungbean and peanut to inoculation with rhizobium bacteria.

A small ACIAR project, undertaken between 1999 and 2001, examined the use in Vietnam of inoculation to increase the fixation of atmospheric nitrogen by crops, then measured the response in terms of increased yield. To wind up the project a workshop was held at the Vietnam Agricultural Science Institute (VASI) in Hanoi, coinciding with the project review. About 25 Vietnamese scientists and managers plus international specialists from Hawaii, Thailand and Australia attended.

The workshop heard that the project had focused on soybean, groundnut and mungbean and had its main activities in the south of Vietnam. Farmer surveys showed that farmers were not using rhizobium inoculation on these crops and were using fairly high rates of nitrogen (70–100 kg N/ha). Nevertheless crops were nodulated and showed around 50% of nitrogen derived from fixation (%Ndfa). On-farm experiments with soybean showed that some crops with no inoculation and no N gave poorer yields while inoculation and no added N gave yields often better than with N fertiliser alone. This was also the case with groundnut on new lands, but on other fields no inoculation + no N gave good yields—presumably rhizobia were surviving in these soils. One particularly pleasing project impact noted at the Workshop was the progress made in training Vietnamese scientists in inoculum preparation.



Vietnamese and international scientists met in Hanoi to discuss the future for bacterial inoculation of legumes to increase nitrogen fixation.

The workshop heard useful papers on inoculation products and marketing from Hawaii-based NifTAL, and on the Thailand success story. A paper also described the system used in Australia, which has involved private production of inoculum of more than 20 types of *Rhizobium* covering over 30 different legumes. The Australian Legume Inoculum Research Unit (ALIRU) at Gosford, NSW administers a public system of quality control.

Potential to reduce fertiliser imports

It was clear from the workshop presentations that a system for the production and widespread use of good quality inoculum for soybeans and other legume crops would save Vietnam a lot of imported N fertiliser. This is particularly significant for soybeans (currently 130 000 ha grown in Vietnam). The Government of Vietnam plans to expand the areas under soybean cultivation to 500 000 ha by 2005, mostly replacing rice production in these areas. (This policy has been developed in response to the lowering profits from rice growing and the increased reliance on imports of

soybeans—over 500 000 tonnes per year.) Such developments undoubtedly place soybean on new ground in which inoculation with rhizobium would be more clearly beneficial.

There was agreement that the production of quality inoculum in Vietnam for at least soybeans was a high priority. The workshop agreed that one institution already involved in developing this technology in Vietnam must take the lead, and probably pilot a region chosen for a campaign, targeting extension workers and farmers.

ACIAR scientists noted that there were some researchable issues, but what is needed seems to be very much the careful application of known technologies, proven in countries like Thailand and Brazil. ACIAR is publishing the workshop proceedings.

Greg Banova
ACIAR Vietnam Manager

New projects

Program key

- ADP Agricultural Development Policy
- ASEM Agricultural Systems Economics and Management
- AS Animal Sciences (1 & 2)
- CS Crop Sciences (1 & 2)
- CTE Communication, Training and Extension
- FIS Fisheries
- FST Forestry
- IAP Impact Assessment Program
- LWR Land and Water Resources (1 & 2)
- PHT Postharvest Technology

Major projects

ADP/2000/004 International food safety regulation and processed food exports from developing countries: A comparative study of India and Thailand

This study will examine the impact of sanitary and phytosanitary measures on the ability of (agricultural exporting) developing countries to achieve the full benefits of trade liberalisation. Particular emphasis is placed on the role of the Sanitary and Phytosanitary (SPS) Agreement and the related WTO dispute settlement procedure in cushioning exporters of agricultural and food products against trade-retarding effects of SPS measures, with emphasis on the related compliance issues and institutional constraints. The objectives are to examine the trade impact of SPS standards, and to distinguish between the degree to which that impact relates to the nature of SPS measures themselves versus the limited capacity of the governments and exporters in developing countries to comply with such measures. The study will yield important policy recommendations for further improvement of the current WTO procedure for SPS dispute settlement, and for enhancing technical, scientific and institutional capacity in India and Thailand. The issues also have particular relevance to Australia, a key member of the

Cairns Group, in bridging the gap between agricultural exporting developing countries and developed countries in international trade talks.

Commissioned Organisation:

Australian National University

Collaborators: *Australia* University of Melbourne, Department of Economics, *India* Research Information Systems for the Non-aligned and Other Developing Countries; *Thailand* Thammasat University, Faculty of Economics; *International* International Food Policy Research Institute, Market and Structural Studies Division, USA.

AS2/1998/138 Development of a silage based cooperative dairy system

Social change in Zimbabwe is contributing to a decline in milk production. The Government aims to help smallfarmers increase milk production as a means of improving their own and the national wellbeing. This project should assist expansion of dairy production in the semi-arid tropics. In Zimbabwe the project work is structured around two major themes: 1) silage production and management (comprising studies of forage production, quality and management, silage management and silage quality and animal production); and 2) comparison of cooperative dairy systems (studying the socioeconomic impact of forage production systems on smallholder dairying). The project scientists will work with a smallholder dairy community committed to the establishment of a cooperative forage/silage production and distribution system, then compare its results with a comparable development project nearby and a traditional dairying community utilising natural rangeland and crop residues for feed. Project work in Australia will complement this work and involve ongoing study to assist Australian beef and dairy farmers in using summer forage (sorghum in NSW and mixed tropical legumes in Queensland) to make high quality silage.

Commissioned Organisation:

NSW Agriculture

Collaborators: *Australia* University of Sydney, Faculty of Veterinary Science;

Zimbabwe Department of Animal Science, University of Zimbabwe; Zimbabwe Agricultural and Rural Development Authority; Linds Agricultural Services, Zimbabwe; Matopos Research Station, Zimbabwe *International* International Crops Research Institute for the Semi Arid Tropics, Zimbabwe.

AS2/1999/036 Developing profitable beef business systems for previously disadvantaged farmers

The South African beef industry is divided into two sectors, the white commercial farmers and the black community farmers. Collectively, they are unable to meet the demand for beef in South Africa. This project aims to encourage community farmers to be self-sustaining by opening up new markets for their beef. Researchers will first develop an understanding of the socioeconomic circumstances of the farmers who will be introduced to the new technologies. This is a vital strategy for gaining farmer support for the project and thus access to their cattle, and for the development of appropriate technology transfer methods and options. The second thrust involves benchmarking characteristics associated with environmental adaptation, production efficiency and meat quality in indigenous and related breeds. This will enable comparisons with other breeds in both South Africa and Australia. Scientists will also look for superior lines that could be useful in upgrading the community farmers' herds and also provide desirable genetic traits that could be commercially exported to Australia.

Commissioned Organisation:

Cooperative Research Centre for the Cattle and Beef Industry

Collaborator: *South Africa*

Agricultural Research Council.

AS2/1999/063 Tick-borne diseases: delivery of user-friendly and effective vaccine and diagnostics

This project will complete a program of work in Australia and Zimbabwe on the development of improved vaccines against a complex of serious tick-borne diseases, bovine babesiosis and

anaplasmosis, and extend the benefits of the work to Mozambique and other countries. Past ACIAR-funded work has concerned the development of vaccines against two *Babesia* species, and production and distribution issues. In this project the scientists will develop more effective alternatives to the live *Anaplasma centrale* vaccine presently used in Australia and other countries. They will also develop user-friendly methods of cryopreservation of anaplasmosis and babesiosis vaccines in Australia and Africa, and improve the diagnostic capability of support extension services in Zimbabwe, Mozambique, Tanzania and South Africa. There is a significant training and awareness component for front-line regional veterinary staff who will be responsible for the transfer of this technology.

Commissioned Organisation: Animal Research Institute, Queensland Department of Primary Industries

Collaborator: *Zimbabwe* Central Veterinary Laboratory, Department of Veterinary Services.

CS1/1996/025 Physiological and genetic approaches for the development of waterlogging tolerance in wheat on sodic/alkaline and neutral soils in India and Australia

It is difficult to grow wheat in waterlogged soils, and the physical works needed to alleviate waterlogging are often too costly for resource-poor farmers to undertake. Therefore the development of wheat varieties that tolerate waterlogging is a sustainable solution for improving their crop productivity. A multidisciplinary group of scientists will tackle the problems involved. They will characterise waterlogging environments, produce techniques to screen for key aspects of waterlogging tolerance in wheat and barley, and develop wheat and barley germplasm to supply breeders who are developing more waterlogging tolerant cultivars. Training will be a substantial component of the program.

Commissioned Organisation: Department of Agriculture, Western Australia

Collaborators: *Australia* University of Western Australia; Victorian Institute for Dryland Agriculture; *India* Central Soil Salinity Research Institute; ND University of Agricultural Technology; Directorate of Wheat Research.

CS2/1997/079 Integrated control of mango insect pests using green ants as a key element

Mango growers use chemical insecticides to control mango pests, but with increasing environmental and economic problems. Traditionally in Asia the pests were kept under control by manipulation of colonies of predacious green ants in orchards, and this project seeks to reintroduce the old technology, with adaptive research to improve it. Following success with this approach in cashew plantations, this project will survey mango pest populations in the presence and absence of green ants, conduct field observations and laboratory experiments on interactions of the ants with mango insects, and conduct field experiments with transplanted ant colonies. Limited insecticidal treatments will be developed to control sap-sucking insects (which the ants encourage rather than attack), and to prevent the ants stinging humans as the fruit is harvested. Instructional material (printed and video) will be prepared, and some farmer field schools will be organised.

Commissioned Organisation: Northern Territory University, Faculty of Science

Collaborators: *Thailand* Prince of Songkla University, Department of Plant Science; Department of Agricultural Extension, Biological Control Stations; *Vietnam* Southern Fruit Research Institute.

CS2/1998/005 Managing pest fruit flies to increase production of fruit and vegetable crops in Vietnam

Vietnam needs comprehensive information about local fruit fly species in order to develop an export trade in fresh fruits and certain vegetables. Also, in northwestern Vietnam new plantings of temperate and subtropical fruits, established partly for

development of poor areas and partly for opium substitution, are suffering close to 100% fruit fly damage.

Farmers have become disillusioned and will abandon the development schemes unless solutions are found quickly. This project will ascertain the economically important species of fruit fly in each region of Vietnam, and what are the host fruits of each. It will also measure damage levels of the major species and their seasonality, and will introduce environmentally friendly, pre-harvest control by bait-spraying. Training programs will upgrade skills in identification, biological studies and development and implementation of field control campaigns. The project is being planned to run alongside an AusAID initiative that will implement field control of fruit flies, including the results of the ACIAR work, within the context of their rural development program for Vietnam.

Commissioned Organisation: Griffith University

Collaborators: *Vietnam* National Institute of Plant Protection; Fosters Asia, My tho, Tien Giang, Vietnam; Southern Fruit Research Institute; Aveniris, Vietnam.

FST/1998/118 Planning methods for sustainable management of timber stocks in Papua New Guinea's forests

The native forest resources of Papua New Guinea contribute substantially to the national economy and provide much-needed income to many rural communities. But a lack of basic resource information affects management of the resources. This project will assist the PNG Forest Authority's program to introduce improved forest management and planning systems and technologies. Scientists will review current methods for strategic and operational forest inventory and recommend improvements to current practice, develop new volume and biomass equations for important forest species and adapt the existing forest growth models to the PNG forest estate planning system. They will assess the impacts of alternative harvesting options on residual growing stock and biomass,

using this model to estimate sustainable harvesting levels and develop and test forest planning and management systems. They will also analyse the impact of forest development alternatives on timber yields and carbon stocks. PNG staff will receive training in yield simulation, model development, forest inventory and management planning.

Commissioned Organisation:

Bureau of Rural Sciences

Collaborators: *Australia* Southern Cross University; Queensland Forest Research Institute; Australian National University; *Papua New Guinea* Forest Research Institute.

LWR1/1998/119 Impact of heavy metals on sustainability of fertilisation and waste recycling in peri-urban and intensive agriculture in Southeast Asia

Earlier ACIAR research showed that in parts of Asia peri-urban areas used for crops such as rice, potatoes and peanuts are at risk of metal contamination. Contamination by metals has health implications but the more immediate economic impacts arise from non-tariff trade barriers related to product quality. This project is directed at the growing concern regarding the contamination of soils and crops in Southeast Asia. It will develop research capacity and laboratory facilities for the study of soil and crop contamination in Vietnam and establish training and exchange programs for staff in all the collaborating countries. Scientists will determine maximum allowable concentrations of contaminants in soils of the region, based on their studies of the re-use of wastes on agricultural soils, contamination of produce and measurement of ecotoxic effects of contaminants on soil microbial processes. They will develop criteria to assess the suitability of different wastes and composts for re-use on soils, based on experimentation examining a wide range of industrial and urban wastes commonly used in peri-urban and intensive agriculture. The research will include strategies to minimise adverse impacts of contaminants in agricultural inputs to soils in these sensitive areas.

Commissioned Organisation: CSIRO Land and Water

Collaborating Institutions: *Australia* Queensland Department of Primary Industries; Queensland Department of Natural Resources; *Thailand* Department of Agriculture; Department of Land Development; *Vietnam* Vietnam National University of Ho Chi Minh City; National Institute for Soils and Fertilisers; *International* Asian Vegetable Research and Development Center, Taiwan.

LWR1/1998/130 Water resources and salinity management in agricultural areas of inland northern China and northern Australia

This large project will collect and analyse hydrological, agronomic and soil quality data in the heavily irrigated Songnen and Yinchuan Plains of China and the Ord River Irrigation Area of Western Australia. The aim is to produce management options to avoid the long-term damaging consequences of heavy irrigation and groundwater use. The scientists will also assess new irrigation techniques and will compare crop production under different scenarios so as to develop detailed management options to ensure long-term viability of all resources. Work will take place on determining the mechanisms of water-logging, also quantifying groundwater discharges of salt and nutrients, so as to prepare detailed maps for planning and management.

Commissioned Organisation: CSIRO Land and Water

Collaborators: *China* Changchun Institute of Geography, Chinese Academy of Sciences; Ningxia Bureau of Geology and Mineral Resources.

PHT/1998/137 Integrating effective phosphine fumigation practices into grain storage systems in China, Vietnam and Australia

Phosphine is the major fumigant for stored grains in China, Vietnam and Australia, due to its low cost, ease of use and acceptance as a residue-free treatment. However in earlier project work scientists identified growing resistance by grain pests as a major

threat to its continued use. Thus this project will investigate technical innovations to enhance the efficacy of phosphine, characterise phosphine resistance in new strains of major pests, develop management strategies for a newly emerging pest (book louse (psocids)), and continue to monitor phosphine resistance levels in stored grain insects while formulating fumigation standards for the three countries.

Commissioned Organisation:

Queensland Department of Primary Industries

Collaborating Institutions: *China* Zhengzhou Grain College; State Administration of Grain; Guangdong Institute of Cereal Science Research; Chengdu Grain Storage Research Institute; *Vietnam* Postharvest Technology Institute; Plant Protection Department.

Medium projects

ASEM/2000/107 Future prospects for smallholder poultry producers in the Philippines: ducks and native chickens

Trade liberalisation and market globalisation is occurring worldwide, primarily because of the World Trade Organisation (WTO) agreements among member countries, including the Philippines. This project will investigate whether smallholder producers of poultry (mainly ducks and native chickens) in the Philippines can withstand the effects of trade liberalisation and market globalisation. Although the current production and marketing systems associated with smallholders are under-developed and less efficient in comparison with the commercial broiler and layer chickens, there are strong consumer preferences for ducks and native chickens because of their freshness and unique tastes. Researchers will examine the differences in production and marketing systems of the various Philippine poultry subsectors to identify constraints to, and opportunities for, improving the performance of smallholder poultry production. They will provide information and analysis on the structure of the entire supply chains

of the subsectors—input supply, farm production, processing and manufacturing, and wholesaling and retailing. The outputs will be used to assess the relative competitiveness and the likely future directions of the Philippine poultry subsectors and the likely impact of WTO on smallholder poultry production.

Commissioned Organisation:

University of New England, School of Agricultural and Resource Economics

Collaborator: *Philippines* University of the Philippines at Los Banos, Institute of Animal Science.

ASEM/2000/101 Improving the efficiency of the agribusiness supply chain and quality management for small agricultural producers in Mindanao

This project will examine the factors affecting the performance of the agribusiness supply chain for selected fresh vegetables produced by smallholders in Mindanao, Philippines, with particular emphasis on the potential for farmer cooperatives to perform the agribusiness functions and deliver greater benefits to the farmer. The project will involve rapid appraisal and case study methods to assess the performance of the current marketing arrangements and will identify impediments to the functioning of the supply chain. The researchers will determine whether there is adequate information flow between market intermediaries and the farmer, to reflect the market requirements for quality management. Training programs, workshops and seminars with farmer groups and institutional participants will facilitate the adoption of quality management systems and improve the success rates among agricultural cooperative groups.

Commissioned Organisation:

Muresk Institute of Agriculture, Curtin University of Technology

Collaborator: *Philippines* School of Management, University of the Philippines, Mindanao.

AS1/2000/083 Development of a vaccine for the control of Gumboro in village and small poultry holdings in Indonesia

Very virulent Infectious Bursal virus disease (vvIBD—known locally as Gumboro) in poultry is a relatively recent introduction to Indonesia. Australia does not have vvIBD and AQIS considers it a high quarantine risk. This project builds on an AusAID grant that enabled CSIRO Australian Animal Health Laboratory (AAHL) to work with BALITVET to define the importance and widespread incidence of vvIBD virus throughout Indonesia. Currently, Indonesia relies on imported vaccines and one vaccine made locally under license, but smallholders are reluctant to use vaccine because of variable quality and because of packaging in commercial doses of 1000 when they only require 20 doses. This project aims to develop a master vaccine seed from local very virulent IBD strains, validate the level of protection provided by the attenuated vvIBD vaccine, develop an ELISA test to monitor effectiveness of experimental vvIBD vaccines, and develop an antigen test for differentiating between vvIBD virus and classical IBD virus strains.

Commissioned Organisation:

CSIRO Livestock Industries

Collaborator: *Indonesia* Research Institute for Veterinary Science.

CS1/2001/049 Development of PRSV-P resistant papaya genotypes by introgression of genes from wild *Carica* species

Papaya ringspot virus (PRSV-P), the major disease problem of papaya worldwide, has devastated papaya production in some regions on the island of Luzon, and has also spread to other islands where papayas are produced. In Australia, PRSV-P represents a severe threat to the industry in North Queensland. There is no useful resistance to the disease within *Carica papaya*, and resistance needs to come from production of resistant genotypes. This project follows on from the success of earlier research, which developed fertile,

PRSV-P resistant plants through hybridisation between *Carica papaya* and *Carica quercifolia* and the successful backcross from this hybrid to *C. papaya*. Scientists will continue to backcross the PRSV-P resistant genes to elite *C. papaya* genotypes in both Australia and the Philippines, and to produce and screen other promising lines in both countries. They will develop a DNA marker for virus resistance to facilitate selection of resistant plants in the early seedling stage, and also to evaluate elite resistant papaya lines on grower properties. Scientists expect to produce elite papaya genotypes that are PRSV-P resistant, and plan to trial any genotypes with commercial potential on growers' properties in both countries by the third year of the project.

Commissioned Organisation: Griffith University, School of Biomolecular and Biomedical Science

Collaborators: *Philippines* University of the Philippines at Los Banos, Institute of Plant Breeding; Bureau of Plant Industry, Department of Agriculture.

CS2/2001/032 Impact and management of *Oribius* weevils in Papua New Guinea

Oribius weevils are a group of insects native to PNG (and far north Queensland). They feed on leaves, shoots and fruits of a number of different horticultural crops, and are a widespread and serious agricultural problem. This project aims to discover more about their biology and habits. Scientists will measure in detail the damage levels and overall impact of *Oribius* weevils on citrus, coffee, carrot, tomato, potato and French bean (seedlings or juvenile plants, and mature plants), and study which commercially available insecticides are effective for short-term control while IPM strategies are developed. They will also determine aspects of the biology and habits that might be manipulated, leading to management recommendations, and undertake a preliminary taxonomic revision of *Oribius* and closely related weevils (PNG and northern Australian species) to provide a sound basis for

New publications

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 Communications Manager, ACIAR, GPO Box 1571, Canberra ACT 2601, Australia, (email comms@aciar.gov.au) if you believe you are eligible to receive a complimentary copy.

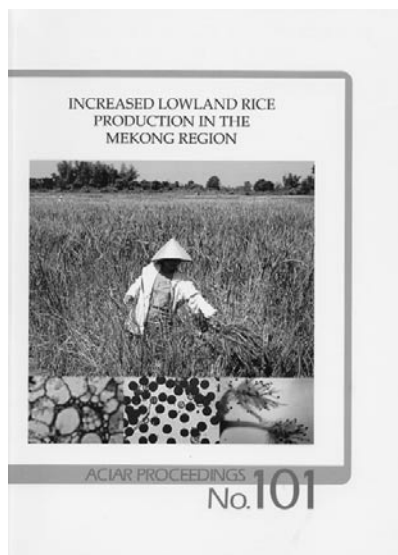
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CSIRO Publications

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Proceedings

Increased Lowland Rice Production in the Mekong Region



These proceedings report the outcome of an International Workshop held in Vientiane, Laos, 30 Oct to 2 Nov 2000 to coincide with the beginning of a new ACIAR project, *Increased productivity of rice-based cropping systems in Lao PDR, Cambodia and Australia*. The main objective of the workshop was to exchange available information that would assist development of rice-based cropping systems in Southeast Asia, particularly in Laos and Cambodia. The workshop focused on the following areas: (a) understanding the impact of environmental constraints and methods to minimise the constraints, particularly for drought and low fertility in rainfed lowland rice and low temperature in dry season irrigated rice; (b) development of rice breeding strategies for stress environments; (c) characterisation of

New publications continued on page 18

understanding biological differences among this group of pests. This is a straightforward biological investigation of a little known pest, with focus on establishing the scope of the problem, recommending practical management practices, and providing knowledge of how to reduce damage in the short-term with insecticides.

Commissioned Organisation:

Griffith University, Australian School of Environmental Studies

Collaborator: Papua New Guinea National Agricultural Research Institute.

FIS/2001/013 Culture-based and capture fisheries development and management in reservoirs in Vietnam

Earlier ACIAR research on reservoir fishery development and management in the northern mid-highland region of Vietnam produced outcomes that led to recommendation for further research in several key areas. This project will extend the work into these key areas. Scientists will look at farmer-managed reservoirs, seeking to develop the best management practices. They will undertake an economic comparison between raising fish fry to fingerlings in cages or ponds. They will also survey four selected reservoirs to determine

whether there are previously unrecognised fish species suitable for culture. The work on capture fisheries in medium to large reservoirs will aid the Government of Vietnam in development of policies to optimise reservoir yields and build a sustainable enterprise for small farmers.

Commissioned Organisation: Deakin University, School of Aquatic Science and Natural Resource Management

Collaborators: Australia Marine and Freshwater Research Institute; Vietnam University of Agriculture and Forestry; Department of Agriculture and Rural Industries, Fisheries Division; Research Institute for Aquaculture No. 1; Research Institute for Aquaculture No. 3.

FIS/2001/079 A review of Indonesia's Indian Ocean tuna fisheries and extension of catch monitoring at the key off-loading ports

Scientists know little about the status of Indonesian tuna fisheries, both in terms of total catch and of key parameters such as catch per unit effort and size distribution of catches. This project will undertake a 15-month pilot study to produce 1) a status report on Indonesian tuna fisheries in the Indian Ocean (including a review of existing

data collection systems), and 2) develop a system for the collection, storage and analysis of all catch data from the longline fleets operating out of Benoa in Bali, and Muara Baru and Cilacap in Java. The outcomes of this study will provide vital information for Indonesia and Australia, and also the two regional fisheries management organisations — the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and the Indian Ocean Tuna Commission (IOTC). Thus the study will assist longer-term planning of research programs to develop and improve Indonesia's capacity to monitor and manage its Indian Ocean tuna fisheries, and to represent itself with the regional fisheries management organisations.

Commissioned Organisation:

CSIRO Marine Research

Collaborators: Indonesia Research Centre for Capture Fisheries; Bogor Agricultural University, Department of Fisheries Resources Utilization.

Small project

FST/2000/003 Evaluation of biologically active extractives from sal (*Shorea robusta*) for use in ecologically benign wood preservatives in India ■



New publications continued

environmental factors that are constraints for rice production in the region, and mapping weather and soil-related factors using crop modelling and geographic information systems.

Fukai, S. and Basnayake, J., ed., 2001. ACIAR Proceedings 101, 327p. Price \$A44.00 (plus postage and handling).

Agrochemical Pollution of Water Resources

This volume records the main research findings of an ACIAR project whose purpose was to better understand the principles by which agrochemicals contaminate surface water and groundwater in agricultural systems with substantial inputs of fertilisers and pesticides. In a collaboration involving Thailand, Malaysia and Australia the researchers determined levels and movements of specific chemicals then employed predictive modelling to devise and evaluate management practices to minimise water pollution. The implicit research question was: How can sustainable intensive agriculture be at its most productive without polluting water resources?

Salama, R.B. and Kookana, R.S., ed., 2001. ACIAR Proceedings No. 104, 158p. Price \$A36.00 (plus postage and handling).

Monographs

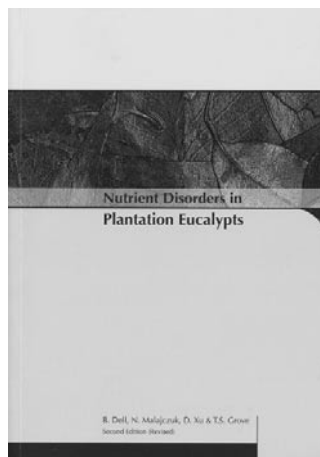
A Visual Guide to Nutritional Disorders of Tropical Tree Timber Species: *Swietenia macrophylla* and *Cedrela odorata*

There is strong interest in producing high-value tropical timbers from plantations, however forestry must compete with other land uses and plantations are frequently planted on infertile or degraded sites that lack one or more nutrients needed for acceptable rates of tree growth. Recent research in the humid tropics has revealed the extent of such nutrient limitations and shown the cost-effectiveness of targeted fertiliser applications to increase growth and wood yield. This book, which has

extensive colour illustration, was written to overcome the lack of information and/or appropriate 'tools' to aid in identifying and treating nutritional problems of two useful tropical trees species.

Webb, M.J., Reddell, P. and Grundon, N.J. 2001. ACIAR Monograph No. 61, iv + 178p. Price \$A54.00 (plus postage and handling).

Nutrient Disorders in Plantation Eucalypts (Second Edition)



This manual is an extensive revision and expansion of an earlier ACIAR monograph of the same name. ACIAR funded the research needed to undertake revision of the manual. Its purpose is to illustrate the symptoms associated with essential nutrient deficiencies of those species of eucalypts now widely established in plantations. The manual focuses on three tropical/subtropical species (*Eucalyptus grandis*, *E. pellita* and *E. urophylla*) and one temperate species (*E. globulus*). Other plantation species are included where illustrations were available. Techniques for identifying nutritional disorders are explained and deficiency symptoms are described in detail for twelve elements. These symptoms can be used to help determine deficiencies in nurseries or young plantations. However, symptoms are a guide to nutrient deficiencies and should be used with other diagnostic tools. For this reason leaf analysis standards are included.

Dell, B., Malajczuk, N., Xu, D. and Grove T.S. 2001. ACIAR Monograph No. 74, vii + 188p. Price \$A30.00 (plus postage and handling).

Classical Biological Control of Arthropods in Australia

This monograph records attempts at biological control of arthropod pests in Australia. It comprises 98 pests or groups of pests, totalling around 150 species—most of which are exotic. There is a summary table of results, and a short dossier on each pest species or group provides (a) a précis of the outcomes, together with basic data on biology and pest status, (b) information on native natural enemies and (c) an account of attempts at biological control together with the biology of the most important natural enemies.

Waterhouse, D.F., and Sands, D.P.A. 2001. ACIAR Monograph No. 77, 560p. Price \$A60.00 (plus postage and handling).

Biological Control of Water Hyacinth 2

ACIAR has made a substantial commitment to the biological control of the highly invasive water hyacinth, *Eichhornia crassipes*. This manual is a companion volume to a monograph published in 1999. The first monograph details distribution, habitat and control of water hyacinth with a focus on water hyacinth weevils. This second volume examines the moths *Niphograpta albiguttalis* and *Xubida infusellus*—their biologies and host ranges, and rearing, releasing and monitoring techniques for biological control of the water hyacinth.

Julien, M.H., Griffiths, M.W. and Stanley, J.N. 2001. ACIAR Monograph No. 79, 91p. Price \$A30.00 (plus postage and handling).

ACIAR Titles on CD

ACIAR has recently released two of its titles on CD. These are:

Quality Assurance in Agricultural Produce. ACIAR Proceedings No. 100

Australian Trees and Shrubs: Species for land rehabilitation and farm planting in the tropics. ACIAR Monograph No. 24.

Special awards to ACIAR's Jakarta officers

Congratulations to Mirah Nuryati and Pardiyo of the ACIAR Jakarta Office, who are the first of ACIAR's overseas staff to receive a Recognition Award for excellence. They were jointly honoured for service 'Beyond the Call', one of only four ACIAR staff awards given in 2001. The award acknowledges the superb service they provided from the Jakarta Office over many months between the departure

of the previous Country Manager and the appointment of Rhonda McLellan. They received an unprecedented number of nominations for this award from their colleagues elsewhere in ACIAR.

Mirah and Pardiyo received news of this recognition via a conference call during an official ceremony held at ACIAR in Canberra in November 2001, and were congratulated at that time by ACIAR Director Bob Clements. Then in early January Australian Ambassador to Indonesia Ric Smith formally

presented the Award at a gathering at the Embassy, amongst their colleagues in the Embassy's Overseas Aid Development section.

Deputy Director has audience with President Jiang Zemin

Dr John Skerritt, Deputy Director (R&D), had the distinction of a personal meeting with China's President Jiang Zemin when he was Australia's senior representative at Beijing's International Conference on Agricultural Science and Technology in November 2001.

John presented two keynote addresses at the conference and also chaired a plenary session, but a large part of his time was spent with the concurrent Government/Ministerial Forum. He was one of 12 members of the forum who took part in a meeting with President Jiang in the Great Hall of the People. John described ACIAR's China Program for the President, emphasising the benefits that had arisen for China from the collaboration and the high levels of adoption of some of the results. In response the President expressed satisfaction with these achievements and expressed the hope of ongoing growth in the ACIAR-China collaboration. In a speech to the whole group he presented views on future trends in the rural sector in China.



Mirah Nuryati (right) & Pardiyo display their awards following the presentation by Ambassador Ric Smith. Also pictured is Indonesia Country Manager Rhonda McLellan.

New publications continued

Research Notes

Rodent research note more accessible

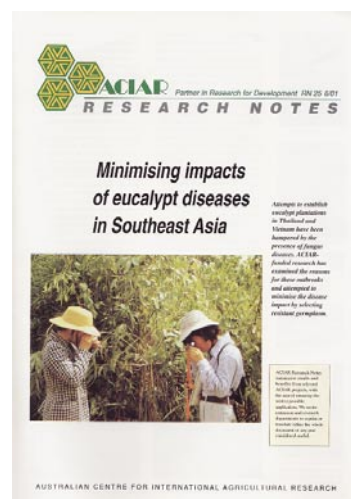
The ACIAR Research Note No. 26 *Non-chemical control of rodents in lowland irrigated rice crops* is now available as a downloadable PDF file at <http://www.cse.csiro.au/research/program4/rodents/>

Write to ACIAR for hard copies in English, (or place orders for Vietnamese and Bahasa Indonesia editions currently in press).

Minimising impacts of eucalypt diseases in Southeast Asia

Attempts to establish eucalypt plantations in Thailand and Vietnam have been hampered by the presence of fungus diseases. ACIAR-funded research has examined the reasons for these outbreaks and attempted to minimise the diseases impact by selecting resistant germplasm.

ACIAR Research Note No. 25. Available free on request from ACIAR.



Zhanjiang honours CSIRO/ACIAR eucalypt scientist

The Chinese city of Zhanjiang has honoured CSIRO eucalypt specialist (and ACIAR project leader) Stephen Midgley for his work on eucalypt breeding programs in China. The award as 'Honorable Citizen of Zhanjiang' was bestowed on Stephen by the Zhanjiang Municipal People's Government in November 2001.

Zhanjiang City is in the tropical south of China and home to seven million people. It is a harbour city and one of China's original 'open cities'. It is also a focus for China's expanding resource of commercial eucalypt plantations and associated industry and is the base for the China Eucalypt Research Centre.

Stephen has worked with Chinese research institutes for almost 20 years. He also lived in Zhanjiang and assisted with the establishment and development of the China Eucalypt Research Centre in 1992.

Since that time he has fostered a number of collaborative research links with support from ACIAR, the Australian Agency for International Development (AusAID) and CSIRO. This work has offered training to research partners and has introduced new species of eucalypts and assisted in breeding programs that have increased productivity from eucalypt plantations.

Beijing honours project leader

Dr Jeff Tullberg, project leader for ACIAR conservation tillage projects in western China, has received the Beijing Government's 'Great Wall Friendship Award' from Mayor Liu Qi. This award, established in 1999, is made annually to a foreign expert who has made an excellent contribution to the economic and social development in areas designated important by the Beijing Government.

Fifteen awards were made this year from a field of 20 000 foreign experts living in Beijing. He was recognised for the environmental benefits of the

project, in which wheat and maize is grown with less water and lower energy use (through reduced ploughing). From Beijing's viewpoint the reduction of soil erosion means reduction in wind-blown dust reaching the city.

R&D Award

Members of the ACIAR project titled 'Molecular strategy to develop long shelf-life papaya by genetic engineering' were delighted to receive the 2001 PCASTRD Outstanding R&D Award presented on December 13, 2001 at a function in Pasay City, Philippines. PCASTRD is the Philippine Council for Advanced Science and Technology Research and Development, one of the councils of the Department of Science and Technology.

Australia Day honour to Dr Bob Dalgliesh

Congratulations to former ACIAR Research Program Manager (and project leader) Bob Dalgliesh, who received the Medal of the Order of Australia (AOM) in the Australia Day Honours List. Bob was cited for his contribution to the research and development of vaccines against tick-borne diseases affecting cattle in tropical areas.

Ministerial recognition for ACIAR's 'Queensland connection'

Congratulations also to Michelle Robbins of the Queensland Department of Primary Industries, who won the department's Outstanding General Service and Support award for 2001. Michelle currently supports a network of 36 project leaders throughout Queensland working on ACIAR-commissioned projects undertaken by QDPI. She coordinates meetings that draw ACIAR's Australian and overseas project leaders together to report their progress and to share experiences. Michelle has worked hard to develop a close and positive relationship between the DPI and ACIAR, and to boost the awareness of the many excellent outcomes from collaborative projects. She received her award from Queensland's Minister for Primary Industries and Rural Communities, Henry Palaszczuk.

Michelle Robbins displays her award, flanked by the Minister for Primary Industries and Rural Communities Henry Palaszczuk (l) and QDPI Director General Warren Hoey.

