



# BEANSTALK

Centre for Legumes in Mediterranean Agriculture Newsletter



**FROM THE DIRECTOR**

**THE FIRST AUSTRALIAN**  
*Medicago truncatula* **WORKSHOP**

**PRIMER PAIRS AVAILABLE FOR**  
**LEGUME RESEARCHERS**

**TRAVEL REPORTS**

**NEW TRANSGENOMIC WAVE**  
**DHPLC FOR AG BIOTECH**

**VISITORS TO CLIMA**

**AWARDS**

**WHAT'S NEW ON**  
**THE CLIMA WEBSITE?**

**NEWSLETTER CREDITS**

## FROM THE DIRECTOR



**Professor  
Kadambot Siddique**  
ksiddiqu@agric.uwa.edu.au

Recent rainfalls throughout the grain belt of Western Australia bring renewed confidence among farmers and the industry after a record drought year in 2002. A number of new pasture and grain legume varieties from the CLIMA Alliance fared well in commercial production and trials during the difficult season of 2002.

In the New Year, a number of our scientists participated and presented CLIMA research in various international conferences (details are in this edition of the Newsletter). CLIMA is well recognised by the international research groups engaged in legume research.

Along with a number of colleagues from the Department of Agriculture WA, I attended the recent pulse breeder's annual meeting in Melbourne. In general, I was impressed with the level of collaboration between various breeders and researchers nationally. CLIMA's research projects of relevance to breeding programs were highlighted. Dr Mark Sweetingham and I discussed with senior managers of various State Departments of Agriculture and GRDC the possibilities of future collaboration with CLIMA. Mr John Cullen, GRDC Program Manager, indicated

that there will be increased funding for core pulse breeding programs and emphasised the importance of delivering improved and high yielding varieties in the shortest time frame.

The CLIMA Program Management Team continues to meet on a monthly basis and provides me with strong support in developing scientific and management strategies for the Centre. We have completed the progress reports for all the GRDC-funded projects and CLIMA's Biennial Research Report is at an advanced stage of preparation. Recently DAWA, CLIMA's major partner, has announced several management changes which include Dr Mark Sweetingham as Manager of Grain Legume Breeding and Dr Clinton Revell as Manager of Pasture Improvement. These changes will strengthen our collaboration with DAWA and grain and pasture legume research in the CLIMA Research Alliance.

I have had meetings with several senior representatives from GRDC, CBH/GPWA and COGGO on the progress of current projects and potential opportunities for new investment in CLIMA. We are developing new project ideas on grain and pasture legumes which I will be presenting to the GRDC Western Panel during a forthcoming meeting with senior members of the Faculty of Natural and Agricultural Sciences (FNAS) at UWA. Several CLIMA scientists and associates participated in the GRDC Pulse Breeding External Review by Ms Marigo Raftopoulos and Mr Ron Storey.

Mr Trevor Flugge, Chairman of the CLIMA Industry Advisory Group (IAG), visits the Centre regularly to discuss Centre activities. At the recent IAG

meeting, the members stressed the importance of identifying major drivers of the grain and pasture legume industries in WA for the next 5 to 10 years. The CLIMA Research Alliance, together with industry partners, must address current and future threats and challenges to the industry in order to develop a sustainable and economically profitable industry in WA. Mr Rory Coffey, CLIMA IAG member, convened an industry information morning on 10 April at UWA in which some 25 representatives from non-traditional sectors of the industry participated. The main purpose of the forum was to update the industry with CLIMA progress, demonstrate how CLIMA can provide a research base for addressing industry issues and identify future opportunities for collaboration on grain and annual pasture legume projects.

Recently the Australian Centre for International Agricultural Research (ACIAR) Policy Advisory Council visited CLIMA. ACIAR provides about 12 % of CLIMA's \$ 5.2 million project budget (2002-03). I gave a brief presentation on CLIMA's progress and highlights of ACIAR-funded projects through CLIMA. The ACIAR Policy Board appreciated CLIMA's efforts and encouraged us to develop new project ideas.

Our fortnightly seminar series organised by Dr Janine Croser is progressing well with record attendance. If you would like to present your research results in one of the seminar series please contact Dr Croser. The program of seminars until July 2003 is available on the CLIMA website ([www.clima.uwa.edu.au/news/index.html](http://www.clima.uwa.edu.au/news/index.html)).

We have compiled a list of CLIMA scientific publications and forwarded this to UWA and

Murdoch University. I have had several discussions with Professor Alistair Robertson, the new Dean of FNAS at UWA, and he is very impressed with CLIMA's progress and promised all his support for the future. It is likely that in the new funding model at UWA, CLIMA will receive an increased proportion of infrastructure flow funds (for nationally competitive research projects submitted through CLIMA/UWA) through FNAS. For the first time, CLIMA will also receive funds for scientific publications arising from CLIMA research. I encourage all CLIMA scientists and associates to include the CLIMA name in relevant publications and forward to me two hard copies of the papers when published.

Let us hope for a favourable growing season, good commodity prices and record crop, pasture and animal production in WA and the rest of Australia during 2003. This will enhance support for legume research from funding bodies, industry and CLIMA Research Alliance partners.

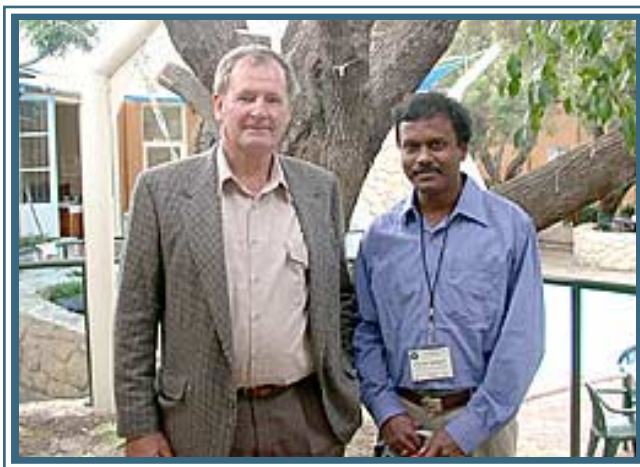
## THE FIRST AUSTRALIAN *Medicago truncatula* WORKSHOP

Dr Geoff Dwyer,  
Murdoch University

In the past few years *Medicago truncatula* (Barrel medic) has emerged as the major model legume for fundamental studies of legume biology. The First Australian *Medicago truncatula* Workshop

was held to showcase the scope and magnitude of international *M. truncatula* genome programs and how this model could be adopted by researchers to improve grain and pasture legumes. The meeting was held on Rottnest Island from 10-13th November 2002 and attracted 74 delegates. It was sponsored by the Grains Research and Development Corporation (GRDC), Murdoch University, The WA State Agricultural Biotechnology Centre (SABC), and The Centre for Bioinformatics and Biological Computing (CBBC) with CLIMA funding attendance by five WA postgraduate students.

After the official opening by the former WA Minister for Commerce and Trade, Mr Hendy Cowan, program leaders from the European Union (Dr Jean Denarie) and United States (Dr Doug Cook) provided an historic overview of the development of *M. truncatula* as a model



*Mr Hendy Cowan (left), former WA Minister for Commerce and Trade, and Dr Sanniyasai Elumalai, a visiting scientist at Murdoch from India*

species. Following symposia included topics covering germplasm development, legume-symbiont associations, nutrition, pests and diseases, functional and structural genomics, and bioinformatics. The themes of afternoon workshops were based around Genetic Resources and Methodologies, Genomics and Bioinformatics Resources, and Legume Synteny and Application to Crops.

The workshop provided a unique opportunity for Australian researchers to meet and develop linkages with scientists from the international *M. truncatula* community, bringing together a diverse group of people involved in legume research including applied researchers, molecular biologists, germplasm repositories, breeders, computational scientists, research students, and grains industry representatives. A highlight on the last day was the lively discussion between the legume breeders and their counterparts in molecular sciences, which provided a clearer picture of the needs of the breeders.

Global research efforts are now progressing towards the development of the complete gene inventory of *M. truncatula* through the sequence of its entire genome, currently targeted for 2005. In the long term, this will enable scientists to integrate genetic information across legume species, and thus, identify and compare genes of agronomic importance with related crop and pasture legumes. The workshop's success has set the scene in Australia for future work on this model legume. Improvements in grain and pasture legumes will occur much more rapidly with the knowledge and resources generated through studies of this model legume, than by working on individual grain and pasture legumes in isolation.

## PRIMER PAIRS AVAILABLE FOR LEGUME RESEARCHERS

Professor Richard Oliver, Murdoch University

Those of you who attended the 1st Australian Medicago truncatula meeting at Rottnest Island last November, will have heard a lot about how useful Medicago genomics promises to be in the genetic analysis, not only of Medicago, but also of other legume species. At the meeting, Dr Doug Cook described a set of oligonucleotide primers that amplify sections of DNA that are polymorphic

between two Medicago ecotypes. Interestingly, these primers have been shown to amplify sections of DNA from at least one of lucerne, Lotus and soybean. It seems likely therefore, that the majority of these primer pairs will amplify DNA from all of the legume species of interest to CLIMA. In many cases, the amplified products from other legumes will turn out to be polymorphic between, at least some, accessions and therefore will be useful for genetic mapping. Furthermore, as the map positions of the Medicago amplimers are known, such a study can quickly determine whether any regions in other legumes are colinear (syntenic) with Medicago. This would in turn allow

researchers to select other Medicago sequences that are likely to amplify sequences linked to genes of interest in other legumes, both from the existing dense Medicago genetic map and from the complete genome sequence that will be available next year. Matthew Nelson (UWA, Plant Biology and CBWA) and Simon Ellwood (ACNFP) have organised, with support from CLIMA, the synthesis and aliquoting of these 126 primer pairs for use by the community. If you would like an aliquot of these primers, get in touch with Richard Oliver [roliver@central.murdoch.edu.au](mailto:roliver@central.murdoch.edu.au). To defray the cost of over \$6000, a charge of \$500 will apply.

## TRAVEL REPORTS

### International conferences in India

Professor Kadambot Siddique, UWA

Between 8 and 12 January 2003, I attended the 2nd International Congress of Plant Physiology (ICP) held at the Indian Agricultural Research Institute (IARI), New Delhi, India. The focus of the conference was "Sustaining Plant Productivity under Changing Environment". The scientific program dealt with nine specific areas, including biotechnology, cold tolerance, adaptation to drought, response to elevated atmospheric CO<sub>2</sub>, and the changing scene of plant physiology. CLIMA was well represented at the conference by Adjunct Professor Neil Turner who delivered a key note paper on "Adaptation to drought: Lessons

form studies with chickpea". I gave a lead oral presentation on "Cool season grain legumes in dry land environments: species by environment interaction" in a session on "Abiotic stress: Adaptation and management" which I also co-chaired, and was co-author of two poster papers. Selected papers from the ICP will be published in the Indian Journal of Plant Physiology.

Prior to the conference, I visited the National Bureau of Plant Genetic Resources (NBPGR) in New Delhi where I discussed developing a joint research project between CLIMA and the NBPGR on molecular characterisation of chickpea, lentil and field pea land races and germplasm of Indian

origin, with emphasis on key biotic and abiotic constraints. I also visited the Indian Institute of Pulse Research in Kanpur together with Adjunct Professor Neil Turner, where we inspected the chickpea physiology experiments associated with an ACIAR funded project between CLIMA and the Indian Council of Agricultural Research (ICAR). Future activities of the project, including a forthcoming statistical training program in India, were discussed. After the conference, I visited the Division of Plant Physiology, IARI and presented a seminar on CLIMA research activities. Prospects for collaborative research between IARI and CLIMA were discussed with the IARI Director.



*Professor Kadambot Siddique with postgraduate students from Nagaland Agricultural University (India) at the 2nd International Congress of Plant Physiology*

Between 20 and 22 January, I attended the International Chickpea Conference (ICC) at the Indira Gandhi Agricultural University, Raipur, India. The scientific programs dealt with modern plant breeding approaches, integrated pest management, mechanisation, processing and post-harvest technologies, and socio-economic constraints in chickpea production and marketing. I presented a joint paper with Dr Heather Clarke (CLIMA) on “Chilling tolerance in chickpea – a novel method for crop improvement” and chaired a session on “Biotechnological Approaches” at the conference. The ICC proceedings were published as full papers and book of abstracts.

Travel funding was provided by GRDC and CLIMA. If you wish to receive a copy of my travel report, please contact me via [ksiddiqu@agric.uwa.edu.au](mailto:ksiddiqu@agric.uwa.edu.au).

## The 8th International Congress of Plant Pathology

Dr Roger Jones, DAWA, and  
Dr Steve Wylie,  
Murdoch University

The International Congress of Plant Pathology, held every 5 years, was this year held in Christchurch, New Zealand between 2 and 7 February 2003. It brings together the two main branches of plant pathologists, i.e. those using “traditional” techniques and the molecular biologists. As well as gathering the latest information on plant diseases and control practices applicable to agriculture and horticulture in Western Australia, CLIMA associates Dr Roger Jones and Dr Steve Wylie were able to showcase WA research and they had the opportunity to attend workshops linked to the conference.

Dr Roger Jones gave oral presentations of WA research findings in controlling virus disease on “Forecasting and decision support for cereal aphids and barley yellow dwarf virus” and on “Devising integrated disease management strategies against plant virus diseases.” He also attended three workshops: “Plant Virus Epidemiology and Control”, “Plant Virus Interactions” and “Plant Disease Diagnostics”. He chaired sessions at the Epidemiology workshop and the main Congress, and co-authored several contributions made by other Department of Agriculture and CLIMA staff. In addition, he visited the New Zealand Crop and Food Research Institute at Lincoln.

## For Dr Jones, specific highlights of the New Zealand trip included:

- Learning how the bio-terrorism issue has been addressed in the USA post-September 11th, regarding possible deliberate introduction of damaging exotic plant diseases that threaten food production.
- A diagnostic network for exotic diseases will be developed in Australia and a laboratory in WA has a good chance of being resourced as part of this network.
- New information was gathered on optimising forecasting and decision support systems in WA, especially for key virus diseases and insect vectors.
- Key information was collected on the latest advances in innovative molecular diagnostics.
- Information was gathered about several exotic pests and diseases of concern for Australian Agriculture and Horticulture, should they get introduced here.
- New Zealand was found to be well ahead of Australia in deploying new chemistry pesticides for pest and disease control.
- Agreement was reached concerning a collaborative joint project funding submission on control of aphid-borne potato virus diseases with the New Zealand Crop and Food Research Institute at Lincoln.
- Dr Makkouk (ICARDA) gave an overview of the incidence of aphid-borne viruses infecting cool-season food legumes in West Asia and North Africa.

### The highlights for Dr Steve Wylie

#### included:

- Dr Steve Ferreira gave an update on the transgenic papaya project in Hawaii which has saved the papaya industry from destruction by papaya ringspot virus.
- Dr Peter Palukaitis from the Scottish Crop Research Institute described how cucumber mosaic virus (CMV) resistance was overcome by infection with a zucchini yellow mosaic potyvirus, the latter of which encodes a protein that interferes with the inherent virus resistance mechanisms of plants. These findings are timely for CLIMA researchers who are developing CMV-resistant pulses that are also

susceptible to the bean yellow mosaic potyvirus.

- Professor Zhangliang Chen from the China Agricultural University in Beijing gave an excellent summary of agriculture biotechnology in China today. There are now more than 200 ag biotech laboratories which applied for 423 field trials in 2000. The main GM crops are cotton, soybean and tobacco. Insecticidal poisoning has significantly dropped as a result of fewer sprays being needed by the GM crop.
- Director of Rothamsted, Professor Ian Cute, described the area on the Rothamsted site that has had no fertilizers or sprays for 150 years and has grown wheat with a consistent yield

of 1 tonne/ha, still the average yield of wheat throughout the world despite all the agronomical advances. He reminded the delegates that there is no sustainability until the world is fed, giving delegates the following challenges:

- o To create predictable and stable disease management of crops and become less dependant on fossil carbon.
- o To use model systems to protect the 250+ crop species against 1000+ pathogens.
- o To encourage governments to provide more financial support for the crops, diseases and regions beyond the horizon of the transnational commercial sector.

### Progress of BGM-chickpea project in Bangladesh

Mr Bill MacLeod, DAWA

I visited Bangladesh in March this year as part of an ACIAR funded project on “Integrated management of Botrytis Grey Mould (BGM) of chickpea in Bangladesh and Australia”. This international project involves researchers from CLIMA, Bangladesh Agricultural Research Institute (BARI), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India, and Agriculture Departments and Universities in WA, NSW and Victoria. I undertook the project tour with Molecular Plant Pathologist, Dr Paul Taylor, from the University of Melbourne.

This tour provided Paul and I with an opportunity to discuss the project with Bangladesh-based project



From l to r: Mr Shafiqul Islam (BARI), Mr Bill MacLeod (CLIMA), Dr Chris Johansen (consultant), Dr Paul Taylor (University of Melbourne), and Mr Abu Musa (consultant) inspect a chickpea mixed crop with linseed and wheat

staff and to visit research sites throughout the principal chickpea production areas of Bangladesh. During the tour we were accompanied by Dr Chris Johansen and Mr Abu Musa, Agricultural Consultants associated with the project in Bangladesh, and also by Dr Abu Bakr, leader of the Bangladesh component of the project. We also met nine of the Bangladeshi scientists participating in the project as well as many other BARI and Department of Agricultural Extension (DAE) staff who are facilitating the research work undertaken for the project.

As part of this project, BARI and DAE staff, have established demonstrations of a “best bet” integrated crop management package compared to farmer practices in 100 farmers’ fields. In addition there are a number of trials evaluating the impact of seed infection, mixed cropping and canopy structure, on the development of BGM.

The most important component of this project for the Australian chickpea industry is the disease screening nurseries established at the BARI Regional Agricultural Research Stations at Jessore and Ishurdi. These nurseries, located at BGM “hotspots”, are screening nearly 500 breeding lines for resistance to BGM, of which 422 have been supplied by Australian chickpea breeding programs. Potential resistance, or improved tolerance, to BGM has been identified in the nurseries. Further screening will be undertaken in the next two years of the project.

Bangladeshi scientists will visit, and receive training from, CLIMA and other Australian partners in the project during spring this year.

## NEW TRANSGENOMIC WAVE DHPLC FOR AG BIOTECH

Professor Mike Jones, Murdoch University

CLIMA researchers will have access to the latest equipment in DNA analysis, just installed at the WA State Agricultural Biotechnology Centre (SABC).

“Researchers in Ag biotech work on more than a dozen different species of plants and animals” said SABC Director Professor Mike Jones “and that’s much more of a challenge than medical researchers face”. “So we need to develop cost-effective ways for discovery of DNA markers such as single nucleotide polymorphisms (SNPs), without having to sequence more DNA than we need to, and we can do this with the new Transgenomic WAVE DHPLC equipment” he said.

Dr David Berryman, SABC Laboratory Manager added “This new equipment, which cost \$220,000, is a very sophisticated Denaturing High Performance Liquid Chromatograph (DHPLC). It is the first system in Australia complete with

fluorescence detection and fraction collector. The Transgenomic WAVE System is amongst the most sensitive and accurate technologies for detection of unknown genetic mutations and single nucleotide polymorphisms (SNPs). It uses patented DNA binding columns and precise temperature control to separate DNA with single base differences, and will be used for discovery, screening and analysis of genetic variation for a wide range of projects.”

“With this new equipment the SABC continues its remit to provide WA researchers with major equipment and facilities, to underpin high quality research in the latest disciplines and technologies in molecular biology. These include genomics, proteomics and bioinformatics, which provide powerful tools to support development of more sustainable and environmentally friendly agriculture” said Professor Jones.



David Berryman demonstrates the new equipment

## VISITORS TO CLIMA

**Distinguished visitor from Vavilov Institute**

Professor Clive Francis and  
Associate Professor Mike Ewing, UWA

Professor Nikolai Dzyubenko, Head of the Forage Department and Deputy Director of the Vavilov Institute of Plant Industry, St Petersburg recently visited CLIMA, the Salinity CRC and associates in SARDI Adelaide. He has been an active participant in recent GRDC and ACIAR funded collection trips to Central Asian Republics and the Caucasus. His knowledge of the local flora and pasture species was a major contribution to the success of these missions.

The importation of new germplasm to support the various programs aimed at the development of new and better varieties of herbaceous plants will be fundamental to solving Australia's salinity problems. Australian scientists do not have a mortgage on knowledge nor the access to collections from parts of the world like the Central Asian Republics, which are afflicted with many of the same salinity threats as land in Australia. Professor Nikolai Dzyubenko has undertaken no less than 33 collection tours through diverse regions of the former Soviet states. Previous to his position in the Vavilov Institute, he headed pasture and forage research in Kazakhstan, then one of the states of the Soviet Union. Professor Dzyubenko's broad knowledge of germplasm as well as the wide range of germplasm in the Vavilov collection that is at his disposal, are very relevant to Australian plant improvement, and

specifically the Salinity CRC, programs.

The Vavilov Institute shares a keen interest in species of potential value in saline or land with high recharge potential. In collaboration with Associate Professor Mike Ewing of the Salinity CRC and Mr Andrew Craig and Mr Steve Hughes of SARDI, plans are in progress to further develop the linkages with the Vavilov Institute. This will build on networks already in place through Professor Clive Francis of CLIMA and Dr Ken Street of ICARDA. The combined expertise will benefit the quest for new and improved pasture species with special potential for adaptation for saline soil, or alternatively as hardy perennials suited to the recharge areas of Australia.

The team are planning a scoping study, to



*Professor Nikolai Dzyubenko collecting germplasm in Turkmenistan*

commence this year, with three major questions:

- 1) What potentially valuable pasture or forage germplasm is available at the Vavilov Institute and, if deficient, where in the world do we find more germplasm?
- 2) What is already available in the Australian collections in terms of number and species relevant to the CRC programs?
- 3) Of the species, which may be of value to Australia, what are the AQIS regulations and likely problems, risks and costs of importation involved with the highest priority material?

The cooperation is likely to lead in the longer term to targeted germplasm collection in Central Asia and the Caucasus with input and support from ICARDA.

**Goliath visits David: Lucerne in Western Canada vs Western Australia**

Ms Sharon Dawson, UWA

Martin Entz, Professor of Agronomy at the University of Manitoba, Canada, recently visited WA following the Agronomy Conference in Geelong. I had the pleasure of showing Martin around the lucerne research sites between New Norcia and Borden, and do some sightseeing along the way. He particularly enjoyed the interaction with collaborating farmers in the Western Australian Lucerne Growers group and shared his experiences with lucerne in Canada - a giant compared to WA!

Compared to WA's fledgling industry (150 000 ha), lucerne is grown on approximately 4 million ha covering the three Canadian prairie provinces - Manitoba, Saskatchewan and Alberta. Lucerne is the dominant hay crop in Canada, who is the world's biggest lucerne exporter. Similar to WA, lucerne is used for dryland salinity management, which affects 20% of the western Canadian landbase. Farmers also appreciate the important benefits of growing lucerne to the soil through N addition, improved structure and management of weed burdens. Martin notes there is growing interest in using lucerne in high performance grazing enterprises and it is grown in rotation with wheat, canola, barley, oats, pulses and even potato.

Martin's research background is lucerne in no-till systems, nutrient cycling under lucerne and between phases, and the concept of "biological tillage". In Canada, lucerne has been successfully adopted into the no-till system, as observed by past WANTFA officer Bill Crabtree on a previous visit. Martin supports no-till establishment since there is more surface moisture for germination, and no-till removal improves utilisation of the legume N. Most farmers use cover crops to establish lucerne and glyphosate mixtures are used at the end of the phase.

Based on his experience, Martin concluded that including lucerne in a phase-farming system is one of the best methods of enhancing the sustainability of Canadian cropping systems. And we agree!



*Lucerne intercropped with rye in Canada*

## Visitor from Saskatchewan

Dr Janine Croser, UWA

Ms Kara Allen from the Crop Development Centre (CDC), The University of Saskatchewan, Canada, has joined the staff of CLIMA for three months. While at CLIMA, Kara is working in the laboratory with Dr Janine Croser on a GRDC funded project aimed at developing doubled haploid (DH) material in chickpea and field pea. Kara has extensive experience within the pulse DH development program at the CDC and brings with her particular expertise in field pea

DH culture. Following her short-term contract here at CLIMA, she will return to work with our CDC collaborators in June. Kara survived a -35 to +35 leap in temperature when she arrived and is now enjoying the warm weather. Please say hi and make Kara feel welcome if you see her around the building. One last thing, if anyone happens to be friends with the crocodile hunter - Kara would very much like to meet him while she is here in Australia!



*Ms Kara Allen (left) and Dr Janine Croser*

## AWARDS

## Science and Innovation Award for Dr Brett Glencross

In August 2002, Dr Brett Glencross (Western Australian Fisheries Department and CLIMA Associate) won the Grains Research and Development Corporation (GRDC) category of the Agriculture Forestry and Fisheries Australia (AFFA) sponsored Science and Innovation Awards, for his innovative research on lupin meal as an alternative aquaculture food source.



*Dr Brett Glencross evaluates trouts fed with lupin meal*

Farmed fish are traditionally fed with expensive imported fishmeal, putting enormous pressure on the budget of aquaculturists and on marine ecosystems. Using meal of locally grown lupins as alternative for fishmeal will reduce the fish feed

costs for aquaculturists, benefit the environment and create new export markets for WA graingrowers. The disadvantage of using lupin meal as a fish feed is its low protein and fat content and its high level of indigestible carbohydrate. As a possible solution to this problem, Brett developed lupin protein concentrates in collaboration with CLIMA. Thanks to the grant he won, Brett was able to travel to Tasmania where he is currently evaluating the nutritional value of the new protein concentrates as feed ingredients for Atlantic salmon, one of the world's most valuable aquaculture species. You can contact Brett via [bgencross@fish.wa.gov.au](mailto:bgencross@fish.wa.gov.au) for more information on his research project.

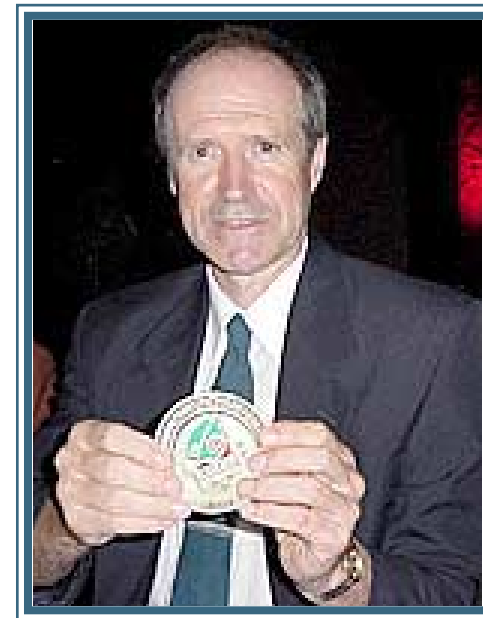
## PhD success for CLIMA student

Congratulations to Yvette Oliver who passed her PhD thesis in December 2002. Yvette worked on "Field measurement and estimation of soil water and chemical transport in deep sands" under the supervision of Associate Prof. Keith Smettem (formerly Soil Science and Plant Nutrition, currently at Centre for Water Research) and Dr Ian Fillery (CSIRO Plant Industries). After her GRDC PhD scholarship ended and prior to the completion of her PhD thesis, Yvette worked for Associate Prof. Smettem for 3 years on a GRDC-funded hostile subsoil project, assisted in teaching the hydrology unit and worked on the "putting trees in their place" project with Dr Richard Harper from CALM. In January this year, Yvette started as a research scientist with CSIRO Sustainable Ecosystems with CLIMA researcher Dr Ted Lefroy. She will be helping to finalise an agroforestry project and

a lucerne intercropping project, both of which are designed to determine the trade-off between recharge control and production. If you would like more information you can contact Yvette via [Yvette.Oliver@csiro.au](mailto:Yvette.Oliver@csiro.au) or 9333 6469.

## More award winners...

At the recent International Congress of Plant Pathology in New Zealand, Dr Roger Jones was awarded a **Fellowship** by the **Australasian Plant Pathology Society**. The award recognises Roger's significant contribution to international plant pathology and crop management research through his extensive work on plant viruses in grain and pasture legumes, oil seed and vegetable crops.



*Dr Roger Jones with his Fellowship medal*

## More award winners...

At the recent International Congress of Plant Pathology in New Zealand, Dr Roger Jones was awarded a **Fellowship** by the **Australasian Plant Pathology Society**. The award recognises Roger's significant contribution to international plant pathology and crop management research through his extensive work on plant viruses in grain and pasture legumes, oil seed and vegetable crops.

Professor Kadambot Siddique has recently accepted an invitation to join the **Editorial Advisory Board** of the **European Journal of Agronomy**, a prestigious international journal (Elsevier publishers) specialising in publishing scientific and review articles on agronomy, crop physiology and breeding of field crops. The appointment is initially for a period of 3 years. Professor Siddique was also re-appointed on the Editorial Advisory Board of the **Australian Journal of Agricultural Research** for a second 3 year term.

Professor Siddique encourages CLIMA scientists and associates to publish their relevant papers in both the journals.

## NEWSLETTER CREDITS

### Editors:

Dr Lieve Bultynck      lbultync@cyllene.uwa.edu.au  
Dr Debbie Thackray      dthackra@agric.uwa.edu.au

The University of Western Australia  
35 Stirling Highway Crawley WA 6009  
Email:    clima@cyllene.uwa.edu.au  
Website: www.clima.uwa.edu.au

## WHAT'S NEW ON THE CLIMA WEBSITE?

Over the last couple of months, the following items have been updated and added to the CLIMA website [www.clima.uwa.edu.au](http://www.clima.uwa.edu.au)

- The **seminar schedule** has been updated until July 2003. It can be accessed from the 'News' page and gives information on the speakers' topics, special seminars, the venue and time. Abstracts from the 2002 seminar series are also available on the website.
- The CLIMA **strategic plan** has been added to the information for 'CLIMA associated staff and students' and 'Collaborating researchers'.
- Several new **press releases** have been added to the 'News' page since the beginning of this year: "New chemistry to beat genetic armour", "Pulsating Revolution" and "Lathyrus rises from the dead".

- Check out the new pictures of **pasture cultivars** on the 'Pastures' page.
- **Logos** from all the research partners are now available in eps- and jpg-format through the 'CLIMA associated staff and students' and 'Collaborating researchers' links.

If you have any items you would like to add to the CLIMA website, or ideas on how to improve the website, please contact:

Dr Debbie Thackray  
dthackra@agric.uwa.edu.au

or

Dr Lieve Bultynck  
lbultync@cyllene.uwa.edu.au

### Contributing authors:

Dr Janine Croser      jcroser@agric.uwa.edu.au  
Ms Sharon Dawson      sdawson@agric.wa.gov.au  
Dr Geoff Dwyer      dwyer@central.murdoch.edu.au  
Assoc. Prof. Mike Ewing      mewing@cyllene.uwa.edu.au  
Prof. Clive Francis      cfrancis@cyllene.uwa.edu.au  
Dr Brett Glencross      bglencross@fish.wa.gov.au  
Prof. Mike Jones      mgkjones@central.murdoch.edu.au  
Dr Roger Jones      rjones@agric.wa.gov.au

Mr Bill MacLeod      bmacleod@agric.wa.gov.au  
Prof. Richard Oliver      roliver@central.murdoch.edu.au  
Dr Yvette Oliver      Yvette.Oliver@csiro.au  
Prof. Kadambot Siddique      ksiddiqu@agric.uwa.edu.au  
Dr Steve Wylie      s.wylie@murdoch.edu.au

### Layout:

Emily Lockwood  
DUIT Multimedia      duit@cyllene.uwa.edu.au  
Volume 4, Number 1; April 2003 © CLIMA 2003