

on the mark

DECEMBER 2004, ISSUE 9

The Newsletter of Molecular Plant Breeding CRC

Best ARM ever!



Bryan Whan & Gene Technology Regulator Sue Meek

'Research – focussed on delivery' was the theme of the MPBCRC Annual Research Meeting (ARM) held in Ballarat, Victoria, in July.

CEO, Bryan Whan, said the ARM was an excellent opportunity for over 100 participants to learn about the exciting developments in MPB's research and other programs, and to develop a common vision for the CRC.

'The primary objective of the new CRC is to produce tangible products for industry', Bryan said. 'Our entire research portfolio needs to be tailored to this end.'

MPB participants heard presentations from their peers on all aspects of the CRC's research initiatives, as well as education and commercialisation updates.

One of the many highlights of the meeting was a keynote address by Dr Sue Meek, the Australian Gene Technology Regulator, on the regulatory environment for GMOs in Australia.

Dr Meek explained that one of the main barriers to the uptake of GM was a general lack of understanding about farming in the metropolitan based community.

'People know very little about agricultural systems and they want to know even less,' she said. 'The metropolitan community are concerned primarily with quality and price.'

She suggested that as products with more immediate benefit to consumers start to become available, opinions may turn in favour of GM.

Dr Meek also warned about complacency on the part of researchers and institutions working in the field of gene technology. 'There needs to be an ongoing effort in communicating the benefits of this technology, but we cannot afford to fall into the trap of "over hype",' she warned.

In his closing presentation at the conclusion of the ARM, Bryan called the meeting the 'best ever'. 'I know I say this every year, but I genuinely think that this was the best ARM ever!' he said.

'I'm particularly happy with the standard of presentations and the level of group involvement in the discussions,' he said.

Over 100 MPB participants attended the conference, including delegates from Mexico and Syria.

Next year's ARM will take place 20-22 July 2005, and will again be held at the Ballarat Lodge.



Robin Wilson, Fernanda Dreccer and Francis Ogbonnaya grab a quick coffee between presentations



Mark Dieters and Matt Bellgard



Rob Loughman and Rudi Appels at the ARM dinner

www.molecularplantbreeding.com





From the CEO

Welcome to the 'new look' *on the mark*. It's been a long time in between drinks for this newsletter, but we're finally back on track.

It's been a busy year for the CRC.

We welcome German-based company BASF Plant Science (BPS) as a supporting participant to the CRC. An agreement covering all aspects of BPS's involvement has now been reached. BPS will contribute to the CRC by developing a commercially acceptable transformation system in wheat, using *Agrobacterium*-based techniques. They will also assist in the assessment of candidate genes for drought tolerance and disease resistance in transgenic wheats.

The Board has continued its practice of meeting at MPB's various research locations. This year the Board met in Perth at DAWA, in Mexico at CIMMYT, in Melbourne at PBC, and twice at the Plant Genomics Centre in Adelaide. It is important for the Board to see first hand what is happening at each participant location. I know the Board appreciates learning about our work directly from the researchers, and seeing the progress we have made.

In November, MPB was granted an interview for supplementary funding from the Department of Education Science and Training. This is an exciting new venture – an opportunity to commercialise our fructan, lignin and pollen allergen technologies in the most commonly used temperate pasture grass species. The venture involves the participation of a leading agribusiness company, as commercial partner. The assessment panel is currently considering all the applications and we should know whether we have been successful by early January at the latest.

This February/March, the Program Management Committee will meet to review and revise the entire MPB research portfolio. Many of the ideas for our current portfolio are now several years old, and MPB has acquired many new faces since our last review. I am extremely happy with the way MPB has been progressing, but we must continue working to improve our portfolio if we are to harness each new opportunity as it presents itself. I am particularly keen to discuss new ways to stimulate closer involvement with the breeding programs, and to hear from some of our new senior research staff. This is a chance to 'fine tune' our research portfolio, and identify any new opportunities in which we could become involved.

This is your newsletter. I encourage you to contribute articles and announcements for us to publish. If there's something you think the other MPB participants should know about, *on the mark* is a great way to spread the word.

I wish you all a very happy and safe Christmas, and a prosperous New Year.

Bryan Whan CEO

Student retreat a great success



MPB Education Program Team and students



Media training at the student retreat



MPB students sharing a good drop

MPB Honours and PhD students came together for two days of training to enhance their skills as scientists and individuals.

The retreat, which was attended by 18 MPB students, took place immediately prior to the ARM in Ballarat.

Students attended workshops on networking skills, poster presentations, grant writing and handling the media.

'It's important that students are able to come together to share their experiences,' Education Program Leader Amanda Able said. 'In the past we have offered training in the form of multiple workshops based at the different MPB nodes, but this two-day retreat format allows the students to interact with each other and with us, and is much more popular with the students,' she said.

MPB students were very positive about the program. Here are some of their comments.

'The media session made us all feel uncomfortable but showed us our weaknesses in a very real situation. They showed us what we need to work on.'

'I really really enjoyed the interaction of students in workshop. While daunting at times, the involvement in the group sessions was really valuable, stimulating and challenging. I didn't expect to get as much out of it as I did. Well done!'

'I thought the choice of guest speakers and the topics covered were excellent and well targeted. The content and the delivery of the practical workshop were comprehensive and professional.'

Based on the success of this year's retreat the MPB Education team plans to run the event on an annual basis. Possible topics for next year include thesis writing and organisation, oral presentation skills, and tools for project management.

New research facility for





Alessandro Pellegrineschi and German Spangenberg at CIMMYT

CIMMYT wheat project progressing well

by German Spangenberg, Research Director

In mid November Bryan Whan and I visited CIMMYT's research facilities at El Batan in Mexico to see the progress made by Alessandro Pellegrineschi and his team on the project aimed at developing transgenic wheat for enhanced drought tolerance.

The wheat has been modified for the expression in a drought-inducible manner of the *Arabidopsis thaliana* DREB1A, a transcription factor that recognises dehydration response elements and has been shown to play a crucial role in promoting the expression of drought tolerant genes.

The transgenic plants containing the DREB1A gene demonstrated a substantial resistance to water stress under the experimental glasshouse conditions. The trial plants have now been harvested and the results look very promising.

This is an exciting time for CIMMYT and MPBCRC, as this is the first small-scale planned release of transgenic wheat ever to have been conducted in Mexico. Pending approval from Mexican regulatory authorities, Alessandro plans to expand the trial next season, and evaluate the best performing lines more closely.

Alessandro and his team should be proud of their efforts. Drought is one of the major factors contributing to severe yield loss of wheat grown in marginal lands and to significantly reduced yields in temperate areas worldwide.

Victorian node...

It's been some years in the making, but construction of the new Victorian AgriBiosciences Centre (VABC) at the R&D Park of La Trobe University, is finally underway.

In addition to being home to the MPB head office, the building will be the new location for the research facilities of the Victorian Department of Primary Industries' Plant Biotechnology Centre and its associated science consortia and spin-off companies, as well as GE Healthcare Biosciences and Florigene.

The \$19.5 million facility will house researchers working on the improvement of a range of crop species including wheat, canola, pasture grasses and clovers.

German Spangenberg, MPB Research Director and Chair of the Centre Management Committee, said that the establishment of VABC will significantly enhance the science and technology capability of the Australian agricultural biotechnology sector.

'The VABC will act as a Victorian science and business incubator, providing an integrated suite of key platform technologies for academia and industry,' he said. 'The Centre will co-locate academic and commercial R&D groups, allowing close interactions and networks, and the incubation of spin-off companies.'

The facility will occupy 2 hectares of La Trobe's R&D Park, and will feature a number of unique initiatives including a 'Research Hotel' with PC2 standard laboratories.

German and his team are looking forward to moving in to the new facility. 'It really is a very exciting project,' he said. 'We've outgrown our current location. With new glasshouses, new labs, state-of-the-art facilities and enormous floor space, this Centre will really give us the room we need and a basis for further growth. We very much look forward to increasing interactions with R&D partners on site.'

The building is scheduled for completion in October 2005.



Conference report

4th International Crop Science Congress, Brisbane

by Yusuf Genc

One of the many interesting themes covered at the 4th International Crop Science Congress this year was the suggestion that the world needs an 'evergreen' or a 'blue' revolution (biotechnology) in order to meet food demands in this century.

There were a large number of presentations covering major topics such as water scarcity, sustainable agriculture, breeding and biotechnology. The presenters stressed the fact that world population continues to increase and will reach 9 billion by 2050. Thus, the food supply and security are still important challenges facing all of us in this new century. The increasing demand for food will have to be met through better agricultural management practices and breeding varieties with high yield, biotic and abiotic stress tolerance, and quality characteristics.

While the issue of genetically-modified (GM) crops is still being debated, GM technology has found acceptance in a number of countries for crops such as soybean, maize and cotton. In 2003, the global area sown to GM crops was 15% (68 million ha in total), up from 12% in 2002. In China alone, the cultivated area for Bt-Cotton (insect resistant) increased up to 2.7 million ha. One reason contributing to this success may be that it is not a food crop, thus does not pose as great a concern to consumers. However, as farmers and consumers witness the tangible benefits of growing GM crops such as reduced use of toxic agrochemicals, higher yield, low production cost, enhanced nutrition and improved disease resistance, in time attitudes towards GM crops may grow more positive. This, many believe, is especially true in developing countries where food security still remains an issue.

Molecular plant breeding will also play a major role in meeting the agricultural needs of this century. While there was a consensus that marker assisted selection is generally effective in terms of backcrossing for selecting major Quantitative Trait Loci (QTL) or single gene traits, it is yet to be proven useful for complex traits.

The congress was well attended with over 1000 delegates from 65 countries.

In brief

CRC Association awards

Awards for Excellence in Innovation

The CRC Association is calling for applications for the Awards for Excellence in Innovation. Awards will be presented at the CRC Association Conference in Melbourne, May 19th, 2005. Awards will be presented for innovation in application and utilisation of research for:

- national benefit
- established industry
- business development.

Applications close Friday February 18th.

Showcasing PhD students

The CRC Association will also be showcasing the achievements of outstanding early career scientists. Up to eight PhD students will be selected to attend the 2005 CRC Association Conference in Melbourne, with all travel and accommodation costs covered. Students will also attend a free communication and media training workshop. Those selected to attend will present at the plenary conference session, with the chance to win a \$2,000 prize for the best presentation.

Applications close Friday February 25th.

If you know of an area of MPB research or PhD student that might be worthy of recognition then let us know! You can even nominate yourself!

Please contact MPBCRC as soon as possible for nominations. For more information on selection criteria visit www.crca.asn.au.

Diary dates

Annual Research Meeting 2005

After receiving much positive feedback from participants, the Program Management Committee made the decision to hold the ARM at the same venue as 2004.

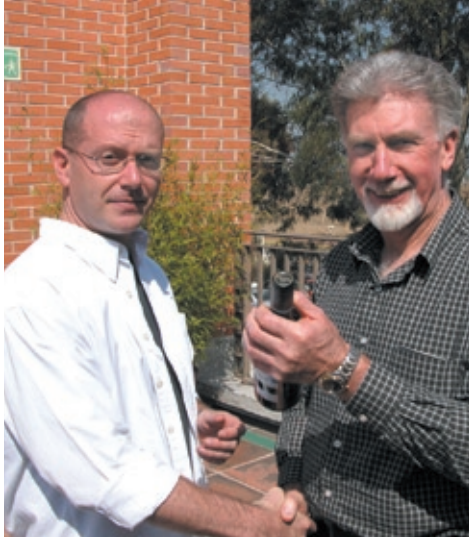
Student retreat: 18-19 July
ARM: 20-22 July 2005

Ballarat Convention Centre, Victoria

13th Australasian Plant Breeding Conference

MPB has just agreed to become a major sponsor for the 13th Australasian Plant Breeding Conference. We will be contributing \$10,000 to one of the major themes for the conference – Plant Gene Technologies.

18-21 April 2006
Christchurch, New Zealand
www.apbc.org.nz



Competition winner Alessandro Pellegrineschi (left) receiving his prize

We have a name!

The bioinformatics and biological computing system currently being developed jointly by MPBCRC and ACPFG finally has a name! The opportunity to suggest a name for the system was opened up to MPB participants at the last ARM. After much deliberation the judges settled on GENICA – the GENomic Integrated Centre Australia. Our thanks go to Alessandro Pellegrineschi of CIMMYT, Mexico for providing the winning name. Alessandro has received two bottles of wine for his troubles.

Congratulations to:

Marcel and Angelina Labandera on the birth of their baby daughter Agustina Sofia in June.

Russel Eastwood and Merrin Spackman on the birth of their baby daughter Skye Elizabeth in June.

John Forster on his appointment to Adjunct Professor in Botany, in the School of Life Sciences, La Trobe University.

Ken Chalmers on his appointment to Associate Professor in the School of Agriculture and Wine, the University of Adelaide.

Kevin Smith on his appointment to the position of Statewide Leader for Molecular Plant Breeding within the Victorian Department of Primary Industries.



on the mark

The Newsletter of Molecular Plant Breeding CRC

On the mark is produced quarterly. All contributions are welcome. If you have news about MPBCRC activities, events, research or international travel please contact us for inclusion in the next newsletter.

Contact:

Michael McLean, Communications Officer
Molecular Plant Breeding CRC
Suite 21, 2 Park Drive
Bundoora Vic 3083
P: 03 9479 1698
F: 03 9479 5022
E: mpb@molecularplantbreeding.com
W: www.molecularplantbreeding.com

Disclaimer

MPBCRC gives no warranty and makes no representation that the information in this document is suitable for any purpose or is free from error. Participant organisations of MPBCRC accept no responsibility for any person acting or relying on the information contained in this document, and disclaim all liability for any loss, cost or expense incurred by reason of any person using or relying on the information contained in this document or by reason of any error, omission, defect, or mis-statement contained therein.



The new look MPB

No self-respecting researcher's wardrobe would be complete this spring without a genuine MPBCRC shirt! Available in ladies' and men's polo and chambray, the shirts feature an embroidered MPB logo, and can be purchased for \$25 (incl GST) from MPB Head Office.