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Welcome to the winter edition of Leading Edge, in which you'll see how busy the team at Forest and Wood Products Australia have been over the past three months. Through our Wood. Naturally Better.™ program, we've overseen a hugely successful second National Carpenters Day and run a popular exhibit at designEX in Sydney.

We've made a host of appointments to our Standards Reference Group, which aims to help streamline the coordination of building codes and standards covering the Australian timber industry. This group will be challenged to ensure FWPA's investment in this role is focused into areas of most benefit and interest to FWPA stakeholders.

In a first, FWPA has provided sponsorship for eight of Australia's leading engineering students to the World Conference on Timber Engineering in Italy between 19-24 June. Students that we hope will be inspired by what they hear and see and so become advocates for timber use in their later careers.

In the last edition of Leading Edge, we announced the launch of the Productivity Commission inquiry into the rural research and development model, under which the Federal government provides funding support to FWPA by matching industry levy contributions. The review is now underway, with initial submissions due in by June 25. For more, visit www.pc.gov.au.

It's also a time of renewal at FWPA. Elsewhere in this newsletter you'll find a call for new members for our four Advisory Groups now that the initial three-year terms have ended. In addition, two of our director positions will be vacated this year.

The call for director nominees was published in the Weekend Australian and a letter was sent to all FWPA members. Applications closed on June 4th and once again we have received a lot of interest in the positions.

Looking further ahead, we are holding the inaugural WoodSolutions 2010 series of forums in September. Leading international and Australian speakers will give presentations to building design professionals aimed at educating and informing them on how they can best use timber in their designs. It is important to note that some of FWPA's funded research will also be profiled at the events.

The wide range of FWPA supported research continues apace, much of which you can read about in this edition of Leading Edge. I hope you find it informative and look forward to providing another update later in the year.

Genetic study of Shining Gums offers hope for accelerated breeding

A new study examining the genetic makeup of plantation trees has identified certain genetic variations (alleles) associated with improved kraft pulp yield, cellulose and growth that could enable plantation managers to breed better trees faster. The Hottest 100 study identified 900 alleles, of which 80 were associated with desirable wood qualities.

The report also isolated 11 alleles that significantly contributed to increased cellulose and kraft pulp yield in the three different climate regions studied. Senior researcher, Simon Southerton, CSIRO Plant Industry said: "The study predicts that if plantation managers select offspring of trees possessing the six superior kraft pulp yield alleles they will improve the profitability of a standard eucalypt pulp mill operation by more than \$40m per year."

What the study looked at

The study examined genes and their alleles from three *Eucalyptus nitens* (Shining Gum) plantations in Tasmania: Meunna (elev. 270m, rain. 1400mm); Tarraleah (elev. 600m, rain. 1700mm); and Loudwater Rd near Hampshire (elev. 520m, rain. 1500mm). The ancestor trees in each plantation originally came from central Victoria.

Based on existing research and literature, The Hottest 100 selected approximately 100 cell-wall genes that control factors such as timber density and how much cellulose is produced for study.

Core samples taken from 420 trees at Meunna were analysed using a Near Infrared Reflectance (NIR) spectrograph, which measured the chemical "fingerprint" of each tree. These "fingerprints" were ranked and compared to the spectrographs of previously measured samples with known properties such as kraft pulp yield.

DNA was also extracted from the samples. A total of 112 candidate cell-wall genes were identified in the Meunna trees with, on average, between 10 and 15 common variations, or alleles, in each gene. Similar measurements were made of more than 900 Tarraleah and Loudwater tree samples to validate the Meunna findings.

The findings

Researchers assessed 850 alleles from 80 genes to determine correlations for seven wood quality traits: density, microfibril angle, kraft pulp yield, cellulose, total lignin, klason lignin and extractives. A total of 42



alleles from 26 genes were associated with one or more of these traits. The study showed that although the effect of each allele is small, the cumulative effect of all significant alleles associated with a trait is large.

The study also considered the effect that different rainfall, elevation and temperature patterns had on how alleles influence a tree's development and characteristics. It found that some alleles associated with increased yield in one location are associated with lower yield in a different climate region. These are called allele reversals.

The largest number of allele reversals occurs in trees from Meunna and Tarraleah, districts with the greatest contrast in climate. This suggests a region's environment has an important impact on how some alleles affect growth.

The study also identified 11 alleles associated with increased cellulose and kraft pulp yield consistently across the three climate regions assessed. In addition, 16 individual trees were identified that had six of the top nine kraft pulp yield alleles. These trees had 2.2% higher kraft pulp yield compared with the overall tree population that was studied.

This improved kraft pulp yield was also accompanied by a 10% increase in the DBH (Diameter at Breast Height which is 1.3 meters above ground level). This result suggests that allele effects are additive.

Southerton said: "Future work in this field will very likely find more suitable alleles to promote desirable wood qualities that will be of great benefit to the timber industry. By understanding allele reversals tree breeders may also be able to develop trees that give the best yields in specific climate zones."

Click here to download the full research report '*PNC052-0708: Accelerated breeding for high pulp yield in *E. nitens* using DNA markers identified in 100 cell wall genes: The Hottest 100*' by B. Thumma, C. MacMillan, J. George, B. Matheson, C. Bell, R. Meder, S. Southerton, D. Williams, K. Joyce, and I. Ravenwood.

Leading international speakers booked for WoodSolutions 2010

Some of the world's leading architects and timber specialists are taking part in a series of one day forums aimed at building design professionals. The inaugural WoodSolutions 2010 program will tour Sydney, Melbourne and Brisbane during September.

This new initiative by Forest and Wood Products Australia offers the country's architects, design engineers, building designers, builders and developers the chance to attend innovative and inspirational presentations by international and local speakers on the structural and aesthetic use of wood.

Guests from the UK, Canada and Australia will deliver presentations on interesting and relevant topics that will give building professionals a fascinating new look at one of the world's increasingly popular building materials. Today, for environmental, aesthetic and economic reasons, contemporary designs are featuring wood in structures ranging from public buildings to multi-storey residential buildings.

Feedback from Australian architects, engineers and building designers indicates the greatest impediment to using more wood is the lack of access to relevant information on product usage and technical data. With greater knowledge they will have sufficient confidence to specify more wood products in the design and construction of residential and commercial buildings.

This information gap has also been experienced by markets internationally. In the USA, Canada and Europe, the wood products industries



have developed initiatives such as seminars and presentations to facilitate the exchange of information and product knowledge, which have helped guide this FWPA initiative.

Among the architect and engineer speakers invited to attend the WoodSolutions 2010 program are:

- Andrew Lawrence, Associate at Arup London and the Arup International Timber Specialist. He will discuss projects including Metz Pompidou and the Serpentine Pavilion;
- Michael Green, Principal of the major awarding winning practice, McFarlane Green Biggar Architecture, Vancouver, Canada; and
- Australian architect Richard Leplastrier, internationally recognised for his understanding of the true meaning of sustainability.

FWPA managing director Ric Sinclair said: "Forums like this have been instrumental in helping promote the use of timber by building design professionals in other countries so we look forward to seeing the same success here. We're also especially pleased to have secured such a high calibre of speakers for this inaugural event."

WoodSolutions 2010 is on the following dates:

- Sydney 7 September – Dockside, Darling Harbour
- Melbourne 9 September – Melbourne Convention Exhibition Centre
- Brisbane 15 September – State Library of Queensland

FWPA sending top Australian students to World Conference

Eight of Australia's leading engineering students are attending a prestigious global conference as part of a pilot program sponsored by Forest & Wood Products Australia through its Wood. Naturally Better.TM program. They fly to Italy in June for the 11th World Conference on Timber Engineering (WCTE).



With the conference attracting more than 400 speakers and submissions, the students, all of whom attend leading universities and include two PhD candidates, will be exposed to the latest work in timber design and construction from around the world.

Topics being discussed include wood in architecture and civil engineering, wood and multi-storey structures, resources and the global environment, wood engineered products, and advances in timber and earthquake and fire resistance.

The students will then bring their newly acquired knowledge back to their respective universities and update faculty members and peers through a series of presentations.

This Wood. Naturally Better.TM initiative is designed to underscore the importance of timber as a construction material. It is the latest effort in the ongoing campaign to enable professionals and consumers to understand how they can play a part in tackling climate change through the use of wood.

Program spokesperson, Ric Sinclair says that, with wood increasingly becoming the material of choice for architects and engineers seeking to meet key environmentally friendly design objectives, attendance at the conference offers future engineers a unique opportunity.

“This is a very important initiative for the industry in the sense that we are assisting engineers of the future to include the latest key concepts around timber construction and design in their studies and careers and this will ultimately have a flow-on effect for the timber industry,” he said.

To win a place among the 500-plus engineers, architects, manufacturers and educators at the conference, participating students had to submit an essay (administered by their university). The winning entries all highlighted the inherent structural properties of timber, its aesthetic qualities, and the importance of better utilising a renewable resource to minimise construction impacts.

“We were struck by the very solid grasp students already have on the benefits of wood as a construction material, from an engineering and environmental perspective,” says Mr Sinclair. “Clearly

this is a strong area of focus in engineering faculties around the country so we are pleased we can help to extend this emphasis and, we hope, excite and stimulate students to further think about timber as a key construction and engineering solution.

“Timber building products come from a renewable resource, they have a low energy requirement for manufacture compared to other materials, and they store significant volumes of CO2. Studying advances in using wood not only in residential dwellings but in commercial buildings and public infrastructure and facilities is a critical part of improving sustainability and environmental efficiencies.”

Mr Sinclair said the strong enthusiasm shown for the WCTE project by participating universities meant sponsorship opportunities would be expanded for the 12th conference, which will be held in New Zealand in 2012.

“We are already asking all major universities around the country to register their interest and we are looking at the feasibility of ensuring selected students from both architectural and engineering faculties have an opportunity to attend,” he said.

In the meantime, FWPA looks forward to receiving feedback from students when they return from this year’s WCTE and viewing their presentations.

Students attending the conference are from the University of Tasmania, Curtin University of Technology, University of South Australia, University of Southern Queensland, University of Adelaide, University of Technology Sydney, and RMIT and Monash University in Melbourne. The conference runs from June 20 to 24 in Trentino, Italy.

Call for new Advisory Group members

Forest and Wood Products Australia is looking for new members to nominate their interest to participate in its various Advisory Groups as the three-year period for which the initial group members were appointed draws to a close.

FWPA operates four groups responsible for delivering recommendations that are used to guide the identification and prioritisation of future R&D projects. They cover Sustainability and Resources, Solid Wood Processing, Engineered Wood Products and Market Access and Development.

The existing advisory groups were created in May 2007 in the lead up to the privatisation of FWPA,



when the organisation restructured its industry advisory network to better encompass the forest and wood products industry value chain and to more closely reflect the expanded group of levy payers represented under the new structure.

They were formed in line with the FWPA’s five-year strategic plan to deliver research outcomes that address identified industry R&D priorities. Recommendations from the advisory groups

are used to prioritise and frame future project opportunities as well as to assist FWPA management in developing technology transfer and industry communication programs that pass the results of these projects back to its stakeholders.

Now that the initial appointments are coming to an end, FWPA is seeking expressions of interest from its Members for the opportunity to nominate individual representatives to participate in any of the groups.

The current FWPA advisory groups, which meet up to four times a year, are:

- Sustainability and Resources Advisory Group – Considers management of native and plantation forests. Will cover topics including tree breeding, silviculture, wood properties, water use, forest operations, pest management and climate change.
- Solid Wood Processing Advisory Group – Includes both softwood and hardwood processing. Has strong interest in segregation technologies for logs and boards, drying, appearance grade value adding, grading and quality assurance as well as optimising water use and energy efficiency in processing operations.
- Engineered Wood Products Advisory Group – Provides advice on research needs in this sector, encompassing plywood, wood panels, laminated veneer lumber and glue laminated products.

- Market Knowledge and Development Advisory Group – Advises on research that provides market analysis and industry information tools. The scope includes research into market attitudes, energy efficiency, building codes and systems, and the value of wood products in reducing the environmental impacts of construction.

FWPA expects that more than 50% of the existing advisory group members will continue in their posts but has begun a process of soft renewal to replace those who choose to step down with further members, incorporating new faces and skills into the groups. Ideally, we are looking for FWPA members to nominate interest in participation, while additionally levy payers can send through an application for membership which would then increase their standing to be considered for the advisory group activity.

Ultimately, FWPA is keen that company members are able to have a say in the strategic direction of R&D that is being supported by FWPA.

Anyone interested in joining or nominating someone to join one of the above advisory groups should contact Jugo Illic email: jugo.illic@fwpa.com.au or Phone: 03 9927 3200. While nominations will be accepted at any time in the future, the initial call for expressions of interest to participate in the current revisions to the advisory groups will close on 30 June 2010. All members nominations will be recorded in a register of interests to be used to fill casual vacancies as and when they occur.

Wood. Naturally Better.™ campaign latest

The Wood. Naturally Better.™ program continues to go from strength to strength with the second National Carpenters Day proving a resounding success and hundreds of inquisitive visitors drawn to the stand at the recent designEX in Sydney.

Building on the inaugural National Carpenters Day in 2009, this year's event saw more than 100 BBQs held in every state across Australia in honour of the good old chippie. Run by Wood. Naturally Better.™ Program Partners, TAFE / Apprentice organisations and building companies, it was an enjoyable day out for all involved and helped secure widespread media coverage for the event to raise awareness of the benefits and environmental advantages of using wood in building.

Central to the day was the announcement of the 2010 Carpenter of the Year and Apprentice Carpenter

of the Year, with the overall title going to Launceston's Ty Turner, 32, who also won the Tasmanian prize.



"I felt really honoured winning the Tasmanian award but to be recognised nationally is quite humbling," said Ty, whose business, Turner Building Contractors, had already won four Master Builders Association awards and two Housing Industry Association awards.

Award judges said apprentice winner Nicholas Edgerton, from East Bentleigh, Melbourne, stood out because of his volunteer work in rebuilding some of the homes in Marysville, spending weeks away from home to do so.

"Nick is the first to unpack his gear in the morning and the last to pack up. He takes pride in his work and is always eager to learn. I was really impressed

with his extensive knowledge of the trade for his young age," said employer and nominator Matthew Swan, of Swan Homes.

TV personality and carpenter Tom Williams, the official ambassador of National Carpenters Day, added: "As one of the awards' judges, I felt a real connection with some of the finalists who have such a great passion for the trade."

Ty won a Hitachi Power Tools Mega Pack valued at \$2,500 with Nick winning an Irwin Tools Prize Pack worth \$850.

The full list of state winners on National Carpenters Day was:

VIC: Craig Tucker, Winchelsea
NSW: Kelvin Wilson, Cabarita Beach
TAS: Ty Turner, Launceston
QLD: Jason Davies, Camp Hill
SA: Joel Benton, Hallett Cove
WA: Adam McArthur, Midland

The winners of the apprentice carpenter competition are:

VIC: Thomas Harford, Montrose, and Nicholas Edgerton, Bentleigh East
NSW: Alexander Ognjenovski, Monterey
TAS: David Pollington, Legana
QLD: Jay Spletter, Chermside
SA: Nick Richards, Port Lincoln
WA: Darcy Saville, Martin

Just days after National Carpenters Day packed up its tools for another year, Wood. Naturally Better.™ was among the 260 exhibitors showcasing their latest products and design trends at the 2010 designEX at the Sydney Convention and Exhibition Centre from April 22 to 24.

The leading event for the interior design and architecture industry, it attracted 14,500 visitors this year, many of whom were drawn to the Wood. Naturally Better.™ exhibit featuring an attention-grabbing timber go-cart complete with working steering and brakes designed by Richard Crosland. The stand also displayed a timber clock with exposed mechanisms, including timber cogs, by William Mathysen and a structural timber display featuring samples of engineered and solid structural timbers.

It was a great way for people to learn about the environmental benefits of using timber in construction and to see just what can be achieved with wood. It was a great opportunity to meet designers with intriguing ideas. One interior designer loved the appearance of glulam as part of a display of a 'structural timber kit' showcasing solid and engineered timber products. He was fascinated with the idea of using glulam for benchtops while a furniture designer expressed preference for marine ply as a material for outdoor benches.

"We had a great response from our Program Partners with 17 companies coming to designEX to support our exhibit," said Ric Sinclair, managing director of FWPA.

New Industry Group Seeks to Reform Building Codes & Standards

Moves to rationalise the coordination of building codes and standards covering the timber industry have taken another significant step forward with the appointment of a Standards Reference Group (SRG) that brings together a wealth of expertise.

The group, which will be responsible for communicating and consulting with industry on reform of codes and standards, is made up of 13 industry members from across Australia.

They are Kim Harris (Carter Holt Harvey Woodproducts), David Marlay (Hyne), Simon Dorries (Engineered Wood Products Association of Australia), Peter Juniper (Australian Plantation Products and Paper Industry Council), Rod McInnes



(Timber Queensland), Craig Kay (Tillings), Richard Schaffner (Wespine), Peter Robson (Boral), Gary Demby (McCormack Demby), John Harrison (Harrison's Timber), Frank Moretti (Gunnarsens), Vince Corlett (Nannup Timber Processing) and David Gover (Gunns Timber Products). It follows the recent appointment of Neil Evans as FWPA Standards & Codes Manager.

FWPA Managing Director, Ric Sinclair said: "Since the outcome of the standards workshop held in July 2009, the Board and Management have prioritised the industry's view that FWPA should take a greater role in the standards development process.

“Standards will play an important role in the coming years and discussion between FWPA and Standards Australia will include finding ways to deliver more timely and cost effective standards. The next part of the strategy seeks to streamline existing processes.”

Initial meetings with Standards Australia have been very positive but it is accepted that the high number of standards on timber (150) is not sustainable and that a system is needed to prioritise their workload. In a board endorsed strategy, a four-stage process of analysis, consultation, development and adoption was outlined that aims to streamline these standards.

The SRG will hold its first meeting in early June to discuss objectives and develop a work program for the development of new codes and standards over the next 12 months. Outcomes will be circulated to

those that expressed interest in being part of the Industry Network, which will become the engine room for proposing work activities.

“FWPA needs feedback on standards development to improve performance and market growth of forest and wood products,” said Neil Evans, Standards & Codes Manager, FWPA.

- Individuals wishing to participate can register for the network by contacting Lorraine Reyes at lorraine.reyes@fwpa.com.au or 03 9927 3222.
- Anyone wishing to view the Strategy Paper for the coordination of building codes and standards for the forest and wood products sector can visit the Corporate Publications section of the FWPA website: www.fwpa.com.au

Project Reports Posted on Website November 2009 – February 2010

Project No.	Project Title
PRC115-0809	Methods to accurately assess water allocation impacts of plantations (Info Sheet)
PNB034-0506	The durability of isocyanate-based adhesives under service in Australian conditions. The results from a 3 year exposure study and accelerated testing regime (Literature Review)
PNB034-0506	The durability of isocyanatebased adhesives under service in Australian conditions. The results from a 3 year exposure study and accelerated testing regime (Research Report)
PNA012-0708	Innovative engineered timber building systems for non-residential applications, utilising timber concrete composite flooring capable of spanning up to 8 to 10m
PNC052-0708	Accelerated breeding for high pulp yield in <i>E. nitens</i> using DNA markers identified in 100 cell wall genes: The Hottest 100
PNB158-0910	Green Adhesives: Options for the Australian industry - summary of recent research into green adhesives from renewable materials and identification of those that are closest to commercial uptake

New Projects November 2009 – February 2010

Project No.	Project Title	Provider	FWPA budget	Total budget
PNC175-0910	Forest industry cooperative pesticide research, chemical registration, industry and community education and chemical use and application regulation advice consortium	A3P	\$500,000 ¹	\$1,000,000

¹ Maximum project budget contribution matching industry contributions dollar for dollar

Upcoming events

Title	Date	URL
Working With Wood Shows Brisbane, Sydney, Canberra, Adelaide & Melbourne	May – June, 2010	www.eee.net.au
Built Environment Meets Parliament (BEMP) Canberra, ACT	15-16 June, 2010	www.bemp.com.au
11th World Conference on Timber Engineering (WCTE), Riva del Garda, Trentino, Italy	20-24 June, 2010	www.wcte2010.org
Frame Australia Melbourne, VIC	June 21-22, 2010	www.frameaustralia.com
MBA Home Show Melbourne, VIC	July 9-11, 2010	www.masterbuilders.com.au
Wood Manufacturing 2010 New Zealand & Australia	September 15-16, 2010	www.forestscience.unimelb.edu.au
AFG National Conference Mount Gambier, SA	Oct 10-13, 2010	www.afg.asn.au

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