QUALITY WOOD, HEALTHIER FOOD AND VERSATILE PACKS

A series of breakthrough technologies is on the way to bolster the competitive position of Australia’s manufacturing industries in timber and food.

A WORLD-FIRST technique for drying timber with microwaves has been developed by the CRC for Wood Innovations (CRC WI).

The technology reduces the time needed to dry hardwood from Australian eucalypts from around one year to one day, promising potentially huge savings to the industry.

It also opens the way for timber worth only $70-80 a tonne as woodchips, to be used as high quality furniture sawn wood, worth $2000-3000 a tonne.

CRC director Professor Peter Vinden and his team conceived and developed the microwave system – a piece of equipment 300 times larger than a domestic microwave oven – for drying timber rapidly and without warping, on a conveyor belt system.

“We’ve tested the concept in 60kW devices, and it works beautifully. Now we’re building a full-scale pilot plant with a 300kW microwave to test it under commercial conditions at Creswick in Victoria,” he explains.

“The problem with many plantation hardwoods today is that growth is so fast it sets up stresses in the timber which can deform it when it dries, making it unsuitable for quality end-uses. This technology overcomes that problem, leading to a much higher quality product, in a far shorter time.”

Prof. Vinden says the microwaves heat the timber to around 160 degrees, drying it in a matter of hours. This process creates microscopic channels in the wood radiating from the centre which allow the moisture out, but also allow the timber to be impregnated with preservatives and other treatments.

Recent trials have confirmed that the CRC’s microwave drying system works equally well for both soft woods and hard woods.

More information: Professor Peter Vinden, CRC WI, 03 8344 5250
Nola Wilkinson, CRC WI, 03 8344 5237
FOODS THAT HELP SAVE LIVES are on the way thanks to a special natural substance, extracted from tomatoes with a process developed by the CRC for Bioproducts.

The CRC team has developed a form of the naturally occurring compound lycopene, a carotenoid that endows tomatoes with their rich, red colour.

International research has shown that a diet rich in lycopene reduces the risk of certain killer diseases, including prostate and bowel cancer and coronary heart disease, says CRCB technology transfer manager Jane Evans.

“The problem is you need the equivalent of 10 serves of tomatoes a week to reduce disease risk – and that’s more than most people consume. So, we've come up with a way to help them get the right amount of lycopene without altering their diet.”

The CRC has developed a process which extracts and concentrates the natural lycopene in tomatoes, which can then be used to enrich a wide range of tomato products, including paste, sauces, blends and meals.

“Lycopene is very red, so you’d tend to add it wherever you’d normally use tomatoes.”

Ms Evans says the lycopene technology is well advanced and should shortly be available for commercial use, where it can be used to create premium lines of health-protecting foods based on tomatoes.

More information: Jane Evans, CRCB, 03 8344 5071

STRONGER, greener and more versatile plastic trays for frozen food have been developed in a breakthrough process by Australia’s CRC for Polymers and VisyPak Pty Ltd.

The development, which offers a fresh competitive edge to Australia’s growing processed food industry, is based on a new form of high melt strength polymer, says CRC director Dr Ian Dagley.

The technology was developed over several years by a team from Monash University and CSIRO and has recently been commercialized by VisyPak following extensive customer trials.

VisyPak project leader Mr Kelvin Davies says the technology represents a significant technological breakthrough.
“This novel material and process offers significant technical and commercial advantages over existing alternatives.

“It is much more flexible, and can be tailored for everything from premium products to budget lines and a variety of colours – a complete suite of packaging solutions.”

Mr Davies adds the process is far more energy efficient than conventional polyethylene (PET) fabrication, and at the same time extends the scope for recycling. “This makes it a lot greener, in keeping with modern industry and consumer demand.”

More information: Dr Ian Dagley, CRC for Polymers, 03 9558 8111
Mr Kelvin Davies, VisyPak PL, 03 9247 4963

Julian Cribb, CRCA Media, 0418 639 245