

Media Release: November 11, 2009

GM Papaya provides coexistence example

A visiting expert has suggested Australian researchers could learn from the experience of coexistence between GM and non-GM papaya.

Dr Dennis Gonsalves has told delegates at the GMCC-09 conference that the growing of GM papaya saved the Hawaiian papaya industry from devastation from the papaya ringspot virus (PRSV).

"PRSV causes plants to become stunted and produce less fruit. In 1995, the Hawaiian papaya industry was in a crisis situation," explained Dr Gonsalves.

"A transgenic cultivar, Rainbow, was developed which has resistance to PRSV. This was released commercially in 1998 and now accounts for more than 80 per cent of the papaya crop in Hawaii."

"In the decade since the Rainbow variety was released, we have continued to see resistance to PRSV and consistently high yields of papaya crop."

Dr Gonsalves said that although the GM papaya has been successful, there is still a need to grow non-transgenic crop for the Japanese market.

"Japan has different regulations for transgenic products so we have many processes in place to ensure coexistence between the GM and non-GM papaya."

"Non-transgenic papaya must be certified by an independent authority which requires testing for the transgenic reporter gene. The farm must also meet requirements for buffer zones and submit to random testing to ensure the crop is free of transgenic material."

Dr Gonsalves said the Hawaiian transgenic papaya experience shows that coexistence between GM and non-GM crops can be managed.

"The regulations we have in place mean we can provide GM and non-GM papaya for different markets without fear of contamination between crops."

Dr Gonsalves led the research team which developed and commercialised the transgenic papaya, and is now the Center Director for the United States Pacific Basin Agricultural Research Center.

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Media Release: November 4, 2009

GM coexistence experts in Melbourne

More than 200 experts on GM and non-GM coexistence will converge on Melbourne next week as part of the GMCC-09 conference.

Conference chair, Professor German Spangenberg, says GMCC-09 will provide an opportunity to showcase world-leading science on the development and implementation of coexistence frameworks.

"Coexistence between GM and non-GM crops will be considered across the entire agricultural supply chain," said Professor Spangenberg.

"The conference will be a truly international experience, with confirmed speakers from over 20 countries."

"This provides an excellent opportunity for the scientific community working in this area to share best-practice experiences and provide insights into how coexistence is handled across the world."

"The conference will also include presentations from experts on coexistence in anticipation of new GM crop releases."

Professor Spangenberg said that GMCC-09 will include speakers from across research, industry and policy.

"We are particularly excited to have attracted world-leading experts to cover a range of themes including the global status of coexistence, the socioeconomics of coexistence, managing coexistence in farming systems and in the marketplace."

For a full list of speakers or more information, visit the website <http://www.gmcc-09.com/>

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Media Release: August 24, 2009

Paddock to Plate

International experts will converge on Melbourne in November to discuss coexistence between GM and non-GM crops.

Professor German Spangenberg, Conference Chair, says the GMCC-09 conference will highlight best practice examples from around the world.

"GMCC-09 will have a strong focus on challenges for industry. We're excited to announce a workshop on logistical approaches for cost effective GM analysis hosted by Guy Van den Eede from the Institute for Health and Consumer Protection in Italy," Professor Spangenberg said.

"Bernhard Koch will also be leading a session on legal frameworks for coexistence. Dr Koch will discuss the efforts in developing worldwide coexistence legal strategies."

Issues and overlap on technical, economic and regulatory issues involved in coexistence will also be discussed.

"The conference will host speakers from 21 countries worldwide. This is an excellent opportunity for Australian researchers and industry to learn from international experience," Professor Spangenberg said.

"There has been significant growth in the introduction of GM crops in global agriculture. The conference will provide a strong knowledge base that can be used to develop feasible coexistence strategies between GM and non-GM crops."

Key issues will include strategies for coexistence and organisational measures across the supply chain, socio-economics of coexistence and many others, as well as highlighting the progress of the Australian approach in the coexistence of GM canola.

"We also want to address the planning for coexistence measures in advance of other GM crop introductions such as wheat, rice, fruit crops and pastures," said Professor Spangenberg.

More information is available at <http://www.gmcc-09.com/>

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Media Release: July 30, 2009

GM and non-GM crops coexistence conference

Coexistence between GM and non-GM crops will be in the spotlight at the GMCC-09 conference in Melbourne in November.

The conference will share experiences on coexistence across the entire agricultural supply chain, including sessions on managing coexistence in both farming systems and the marketplace. Early bird registrations for the conference close 15th August.

In particular, the conference will offer lessons learnt in Australia from the recent GM canola release.

The GM canola release will be examined from different views across the supply chain, including presentations from Professor Richard Roush (University of Melbourne), James Neilsen (Monsanto), grower Andrew Weidemann (VFF Grains Group) and a market perspective from Robert Green (Australian Oilseeds Federation).

The conference will also provide the opportunity for the scientific community working on GM and non-GM coexistence to discuss future opportunities including GM wheat and case studies on planning for coexistence of emerging GM crops.

Other speakers will include Phillip Glyde (ABARE), Geoff Honey (Grain Trade Australia), Gary Martin (North American Export Grain Association), Randy Giroux (Cargill Inc), David Anthony (Auscott Ltd), Gerard Barry (IRRI), Dennis Gonsalves (USDA), John Miller (North American Millers Association), and Justus Wesseler (Wageningen University).

More information is available at <http://www.gmcc-09.com/>

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Media Release: July 6, 2009

Beer: Barley to Bottle

A quiz night that's all about beer?

'Beer: Barley to Bottle' is a pub trivia night about the science behind beer - the breeding, the malting, the brewing and of course, the taste.

The quiz night features four short talks that track how barley is made into beer. Each talk will be followed by a quick quiz and the chance to win prizes. There will be fun games, and of course, beer tastings.

Beer: Barley to Bottle is presented by the Molecular Plant Breeding CRC as part of National Science Week.

Come see (and taste!) how far the barley has come.

Cost: FREE! Register your interest with melanie.carew@molecularplantbreeding.com or on 9479 1698.

Dates: 7.00pm, 13th August, LaTrobe University
6.30pm, 20th August, The Foundry, Bendigo.

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Media Release: November 20, 2008

GM CROPS COEXISTENCE CONFERENCE LAUNCHED

An international conference exploring the ways to enable coexistence between GM and non-GM crops will be held in Melbourne in November 2009.

The Genetically Modified Crops Coexistence (GMCC) conference is the only international forum that focuses on coexistence between GM and non-GM crops throughout the entire supply chain. The Melbourne event will cover key issues from production level to the market place or 'paddock to plate'.

GMCC'09 will highlight the progress of the Australian approach to coexistence of GM and non-GM canola. The conference will also address the measures that are being planned for new GM crops including wheat, rice, sugar cane and pastures.

The event will be highly relevant for industry, policy, agricultural biotechnology and agribusiness communities.

GMCC'09 will be held 10-12 November 2009. Calls for abstracts will be made shortly.

Further information on the GMCC'09 conference is available at www.gmcc-09.com

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Media Release: September 18, 2008

MPBCRC SCIENTIST WINS GOLDACRE AWARD

Dr Jason Able has been awarded the prestigious Goldacre award from the Australian Society of Plant Scientists for his work with the Molecular Plant Breeding CRC.

The Goldacre award celebrates research by early career scientists. Dr Able won the award for his work investigating and manipulating genes in wheat that are essential for processes during meiosis.

"Successful reproduction depends on precise timing and coordination of a series of events during meiosis. By studying these processes, we can develop more effective plant breeding programs which can enhance food production," Dr Able explained.

"Cereal crops provide around 70% of the world's food supply. It's essential that we understand what's happening at a basic reproduction level."

Dr Able's research interests lie in understanding the molecular mechanisms that control chromosome pairing and recombination within cereals, specifically bread wheat.

"Jason's achievements in the field of meiosis have been groundbreaking", says Dr Glenn Tong, CEO of the Molecular Plant Breeding CRC (MPBCRC).

"Previous research on meiosis has focused on simpler organisms such as yeast and Arabidopsis. Dr Able's research on bread wheat provides an important knowledge base for one of the most important staple food crops in the world", Dr Tong said.

"This research informs other areas of the MPBCRC's work, helping our breeding programs develop significant improvements in drought, salinity and disease tolerance", Dr Tong explained.

"Dr Able has also played an important role mentoring young scientists within the MPBCRC, supervising a number of post-graduate students. His commitment is helping to establish the next generation of plant scientists", says Dr Tong.

Dr Able will accept the award and present his research in September at ComBio, the Combined Annual Conferences of the Australian Society for Biochemistry and Molecular Biology, the Australia and New Zealand Society for Cell and Developmental Biology and the Australian Society of Plant Scientists. The research will also be published in *Functional Plant Biology*.

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Media Release: May 22, 2008

SUPERGRASS PROVIDES ENERGY BOOST FOR LIVESTOCK

A newly developed 'Supergrass' could help Australian farmers increase productivity for livestock.

Molecular Plant Breeding Cooperative Research Centre (MPBCRC) scientist Yi Tu said their research project may not only improve the livestock industry, but also save the farming industry millions of dollars.

"Pasture plays a vital role in the livestock industry. Even small changes that improve nutrition can greatly increase animal performance. For example, even a 6% unit increase in digestibility can result in a 27% increase in summer milk production. This could translate to millions of dollars in benefits to the dairy industry."

"You are what you eat, as the saying goes, and it's no less true of livestock than it is of people."

Ms Tu said the research has focused on improving the quality and digestibility of pasture grass using biotechnology. By eating grass with improved digestibility, livestock can get more nutrition from eating the same quantity of grass.

"Lignin is a cellular 'glue' of sorts that gives plant tissues their rigidity and strength. We have been working to understand the genetic and biochemical basis for this".

"Currently, two genes are considered as the key lignin producing genes. Using a biotechnological tool that works much like a genetic 'switch', we have been able to turn down the amount of lignin produced in perennial ryegrass plants."

"With ongoing research in this field this new Supergrass could provide Australia's livestock producers with substantial cost savings and productivity increases, enhancing Australia's reputation as a premium producer of meat and dairy".

MPBCRC is a Cooperative Research Centre established under the Australian Government's Cooperative Research Centres Program.

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Media Release: May 22, 2008

WHEAT BREEDING IN THE FAST LANE

Molecular Plant Breeding CRC (MPBCRC) has been awarded an Award for Excellence in Innovation from the Cooperative Research Centre Association.

The *Cross Outcome Prediction* project is a new technology that is saving wheat breeders millions of dollars by speeding up the process.

Developed by researchers at MPBCRC, the award-winning technology allows breeders to quickly assess the success of crossing different varieties of wheat.

"Wheat breeding is a expensive process which tries to use genetics to improve grain yield, disease resistance and the processing quality of wheat. Our technology allows plant breeders to do this in a shorter amount of time, saving both time and money", explains Dr Glenn Tong, CEO of MPBCRC.

"Over ten thousand combinations of genes can be predicted using this tool. This allows breeding programs to focus on improving the international competitiveness of Australian wheat".

The technology uses genetic information and complex mathematics to generate information on the success of cross breeding plant varieties. Traditional plant breeding could take as long as 15 years between the initial cross and the final release to farmers. The new technology reduces the need to perform as many crosses cutting the time required.

The tool is now used regularly by many of Australia's largest wheat breeding programs. Dr Tong says the research provides significant benefits to farmers.

"Improvements in yield and disease resistance will be delivered sooner thanks to this tool. This will help out farmers secure food production in the future".

Information used in the technology was gathered from plant breeders and research groups using MPBCRC's collaborative partners. Dr Howard Eagles, MPBCRC research leader, says this sharing of information is crucial to achieving the best outcomes.

"There is huge potential to expand our accuracy and extend the prediction to more and more genes. We're only limited by our capacity to access new sources of genetic information. Being part of MPBCRC means that we have these relationships already established, and so we can make advances faster," Dr Eagles explained.

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Media Release: April 1, 2008

COWS COME HOME TO CLIMATE CHANGE FRIENDLY GRASS

Australia–NZ partnership awarded Aus\$1.8 M for pasture research

An Australia–New Zealand partnership has won a Aus\$1.8 million grant to develop new pasture grass varieties that are better adapted to climate change.

The funding will help develop a path to market for new pastures produced by Gramina Pty Ltd, a joint venture of the Molecular Plant Breeding Cooperative Research Centre (MPBCRC) and New Zealand's leading rural services group PGG Wrightson.

The grant was awarded by the Australia New Zealand Biotechnology Partnership Fund – a New Zealand Trade and Enterprise initiative designed to encourage trans-Tasman collaboration in the biotechnology industry.

'We'll be using our technology to help the Australian dairy industry adapt to future climate changes,' says MPBCRC CEO Dr Glenn Tong.

Currently, the dairy farming pasture grass of choice is perennial ryegrass, a high quality, highly digestible grass that cows love to eat – and a happy cow is a good milker.

Unfortunately for the dairy industry, perennial ryegrass grows well only in temperate areas — areas that climate change is beginning to turn warmer.

And although growing grasses that thrive in hotter climates, so-called warm season grasses, might seem the obvious solution, they are poorly suited to grazing.

The problem is related to lignin, the stiff wiry component of plants that supports their structure and makes the plant cell walls waterproof.

'Warm season grasses tend to be high in certain kinds of lignin, making them much less digestible than the temperate varieties,' says Dr Tong.

'Low digestibility equals a low energy intake, which drops milk production. Plus, the longer cows take to digest these grasses, the more they burp out methane — a major greenhouse gas.'

Dr Tong says that to solve these problems, Gramina will develop new grass varieties with less of the indigestible type of lignin. These grasses would increase cows' energy intake, leading to higher levels of milk production.

'You increase the digestibility — you get fewer burps!'

Gramina's proprietary technologies alter lignin content by changing the activity of specific genes involved in its production. Developed by MPBCRC Chief Scientist Prof German Spangenberg and team, the technology is like a 'dimmer switch' for specific types of lignin.

Using warm season grasses will not only lower methane emissions and increase milk production. These grasses grow faster at the higher temperatures found in warmer climates.

They are also adapted to higher levels of the greenhouse gas carbon dioxide, which is predicted to increase substantially over the next 30 years. Plus, they are also more water efficient, which is good news for Australia's drought-prone environment.

'This grant will kick start the process of developing warm season grasses by modifying the activity of relevant genes, and will defray some of the substantial commercialisation costs,' Dr Tong says.

However, there's still a long way to go. 'It takes about \$50 million to commercialise such a product,' he explains. 'So, this is only the start of a very long road.'

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