

WHEATFIX

Super fibre in bread and cereal closer

Colon cancer rates could plummet

JORDANNA SCHRIEVER, HEALTH REPORTER

ADELAIDE scientists have helped create new strains of wheat that will help consumers significantly reduce their risk of colon cancer.

The CSIRO and the University of Adelaide's Waite Institute are collaborating to use these types of wheat in the development of new foods, including breads and cereals, that can improve bowel health.

The new wheats retain certain types of fibre and starch that are currently lost because of food processing.

Chief research scientist at the CSIRO Dr David Topping said some types of dietary fibre and resistant starch had been lost from the modern diet, increasing the risk of colon cancer and other health concerns.

"We've taken out what we call the soluble fibres and what's called resistant starch," he said.
"The reason that we are putting them back is because they don't feed us, they feed our bacteria."

Dr Topping said there was more bacteria alive in the body, particularly in the bowel, than there were cells in the body.

"These bacteria metabolise the fibre and they produce compounds which promote the health of the bowel, the liver and indirectly the whole body," he said.

Dr Topping said the genetically modified wheat could be as close as two to three years from appearing on our shelves, because rigorous testing and development was still required.

Colon cancer kills about 4500 Australians each year, but Dr Topping said up to 80 per cent of the deaths were preventable. More than 11,000 new cases are diagnosed each year.

"A substantial part of that will be through the production of the grain," he said.

But he said other lifestyle factors, including reduced smoking rates and better exercise, would also help.

He said much of the loss of fibre from modern Western diets had been through processing technologies.

“In the '50s the idea grew that people consuming traditional diets high in unrefined cereal foods did not seem to get diseases that weren't there before,” he said. “So, although they were better fed . . . they had higher rates of coronary heart disease, diabetes, appendicitis, constipation and more.”

People in certain cultures, particularly Africans who ate traditional diets, did not get the diseases at all.

“In fact, the rates were so low, they caused real genuine confusion as to what was going on,” he said.

“These guys were eating whole grains, so everybody said ‘aha, it's the fibre!’”
But he said increasing fibre promoted regularity - it did not lower the risk of these other diseases.
“In this country we've doubled our fibre intake since the late '70s and early '80s and that's certainly fixed constipation, but our rate of colon cancer is now probably the second or third highest in the world - it's certainly among the highest.

“This is all wrong because if the fibre theory was right then the rate of colon cancer should be coming down, but it isn't.”

He said that was why wheat containing certain types of fibre - known as pentosans and glucans and resistant starch - were now being developed.

Similar products, using barley, had already been tested and developed, and were now commercially available.

Dr Topping said some fibre-rich cereals were already being tested on animals at the CSIRO.

He said the research and continued development would allow certain products to be tailored to help prevent various health concerns, including high cholesterol.

However, he emphasised that before these products were used to make consumer foods, there had to be assurance they would work to promote human health.

“If we thought, for one moment, that any of these new cereals would not promote human health we would not be doing it,” he said.

Dr Topping will speak, along with other researchers, at a public forum at the Adelaide Convention Centre at 2.15pm on Sunday ahead of an AusBiotech conference beginning on Monday.

Taking our food for granted

JULIAN SWALLOW

THE reluctance of Australian consumers to embrace genetically-modified food crops only goes to demonstrate a complacency about the security of the country's food supply, a leading food security expert says.

Australian Centre for Plant Functional Genomics chief executive Professor Peter Langridge said that while Australia was a net food exporter, recent extreme weather events, such as Cyclone Yasi, which struck north Queensland in February, along with persistent drought demonstrated our ongoing food needs could no longer be guaranteed.

"I think the community take for granted there will be high-quality supplies of food always available," Prof Langridge said.

Prof Langridge will discuss Australia's food security needs at the AusBiotech 2011 national conference in Adelaide, which opens this Sunday and runs to October 19.

The conference will bring together delegates from across the world to the Southern Hemisphere's largest industry gathering, and includes an invitation-only Australasian Life Science Investment Summit.

The summit will welcome 40 of Australia's best local companies, which will be showcased to international and Australian investors on October 19.

Prof Langridge said the Australian public's attitude now needed to change.

"We have access to some of the highest-quality, safest food in the world," he said.

"That's a capability that shouldn't be taken for granted."

Prof Langridge, who last year led the food security committee of the Prime Minister's Science, Engineering and Innovation Council, said Australia's political leaders had a vital role to play in changing public perceptions.

"Decisions made about food production and processing are being made by people who know nothing about it," Prof Langridge said. "We need politicians who are informed and lead debate rather than following."

He suggested one way to protect the country's food supply was through the increased development of genetically-modified crops that are weather-resistant and provide increased yields.

But he acknowledged public opinion remained divided, and that this was unlikely to change until Australia was confronted with a situation - such as an extreme drought and a food shortage caused by an expanding population - in which the need for more technologically-advanced crops became obvious.

“The majority of Australians are sitting on the fence and don't see any evidence of why we need this,” Prof Langridge said.

“When people see the direct need, they will support the technology.”

Yet Prof Langridge said the window of opportunity was short.

“The decisions we make now will impact on what we can do in 20 years' time,” he said.

“It puts a very different perspective on things.”

SA Farmers Federation president Peter White said urban expansion, climate change and continuing political interference had all impacted upon the ability of the state's farmers to meet demand for food, and this was likely to get worse.

“We're going to have to grow a lot more food in less area with less people (to grow it),” he said.

Mr White said SA was the only mainland state with a moratorium against growing genetically-modified crops and this needed to change.

“It's (genetically-modified crops) not a silver bullet but it's a tool to help meet our targets for food production,” Mr White said.

With an expanding global population, Mr White said Australia could not afford to simply rely on food imports as a fall-back.

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Tax credits to boost biotech

JULIAN SWALLOW

A NEW research and development tax incentive will boost the biotechnology sector and benefit the community through the development of better treatments and diagnostics, AusBiotech says.

Chief executive Dr Anna Lavelle said the tax credit, which includes a 45 per cent refundable component, will reduce the cost of eligible research and development activities in Australia by up to 10 per cent.

Dr Lavelle said the reform would make Australia more competitive for biomedical and pharmaceutical research and development.

“For small biotech companies it's going to mean a significant difference to their research and development programs and inject substantial new funds into the industry and that will stimulate new investment,” she said.

“A biotechnology company's research and development program is its fundamental reason for being, and the tax credit speaks to its core business activities - the production of intellectual property - which ultimately flows on to new treatments, diagnostics and other life-changing and saving solutions for the community.”

The tax credit replaces the previous tax concession, which allowed companies to claim back losses incurred on research and development. It also will provide for quarterly payments of cash refunds from January 1, 2014.

PriceWaterhouseCoopers's national research and development partner Sandra Mason said companies needed to be aware of several changes.

“We recommend all companies determine what additional documentation will be required under the new program and revise processes to capture research and development information in real-time,” she said.

“This will ensure they fully benefit now and when the quarterly payments become available.”

Ms Mason said the definition of eligible activities had changed, with research and development activities separated into “core” and “supporting”. She said biotechnology companies also would have an increased ability to claim overseas activities. That was important given Australian limitations on conducting certain activities.

Managing director of Thebarton-based medical cleaning firm Soniclean, Julian Smith, said the tax credit would make "a big difference" to smaller biotech firms as it gave fully-refundable offsets for those with less than \$5 million turnover, and cut paperwork.

Quarterly payments would help ensure ongoing cash flow that might be directed to research and development. "It's more helpful to the smaller companies," Mr Smith said.

Opposition to ban on gene patents

THE biotech industry has welcomed a Senate report that recommends a Bill seeking to ban the patenting of biological material not be passed.

A Senate Legal and Constitutional Committee Inquiry recommended the rejection of the cross-party Patent Amendment (Human Genes and Biological Materials) Bill 2010, which aims to ban patents on human genes and similar materials.

AusBiotech chief Dr Anna Lavelle welcomed the recommendation:

“The Bill does not serve the interests of patients, researchers nor industry,” Dr Lavelle said.

“In fact, (it) threatens the very foundations of scientific research and development of biological therapies and other technologies built on patents.”

Watermark Patent and Trade Marks Attorney Dr John Golding also supported the recommendation.

“This is an important decision for an industry where a company's intellectual assets represent a significant component in value and market capitalisation,” he said.

Dr Golding said the biotech industry did support new patent protection legislation being considered by Parliament that will reform Australia's intellectual property system, encouraging investment in research and technology.

Meeting the challenge

JULIAN SWALLOW

AUSTRALIA'S biotechnology industry has a bright future due to its innovative approach and global outlook, industry body AusBiotech says.

Chief executive Dr Anna Lavelle said Australia now boasts about 400 biotechnology companies and another 500-600 medical technology firms, including global giants such as CSL, Cochlear and ResMed.

Dr Lavelle said Australian biotechnology companies have a total capitalisation of about \$35 billion and this is set to grow as the industry meets the needs of an expanding middle class in emerging markets such as China and India, along with the fundamental challenges of our age.

"Biotechnology is one of the only industries that touches on all the main things the community is concerned about," Dr Lavelle said. These include health, food security, biofuels, and the challenge posed by climate change.

Dr Lavelle said the global focus of the Australian biotechnology industry had helped to make Australia the fifth-largest player in the international biotechnology sector.

"If there was an Olympics in biotech, Australia would be in the medals," she said. But with the cost of developing a new medication in the range of \$1 billion to \$1.5 billion, Dr Lavelle said the Australian biotechnology industry required ongoing financial support.

While much of its funding comes from private sector backers such as "angel investors", venture capitalists and global pharmaceutical giants, she said government support was critical.

"You've got to have both sides working together," she said.

The South Australian Government has established BioInnovation SA to foster the state's biotechnology industry, while Dr Lavelle said a new national research and development tax credit will provide a significant boost.

These are issues that will be discussed at the AusBiotech 2011 national conference in Adelaide, which opens this Sunday and runs until October 19.

It includes the Australasian Life Sciences Investment Summit where 40 of Australia's best local companies are showcased to investors.

While Australia relies on mining and agriculture for much of its wealth, Dr Lavelle said biotechnology will only become more important. "We need to think about what are the industries for the next 20 or 30 years," she said.