

Taking our food for granted

JULIAN SWALLOW



Professor Peter Langridge inside the plant accelerator facility at The University of Adelaide Waite campus. Picture: Brooke Whatnall

THE reluctance of Australian consumers to embrace genetically-modified food crops shows complacency about securing our food supplies, an 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.

SA researchers working on designer wheat to reduce colon cancer

Jordanna Schriever



CSIRO chief research scientist Dr David Topping, in his laboratory. Picture: James Elsby

ADELAIDE scientists have helped create wheat varieties that will reduce the risk of colon cancer in consumers.

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.