

# Mexico aids Aussie wheat

Fairfax Media journalist **NEIL LYON** travelled to Mexico with the assistance of the Crawford Fund and the Department of Foreign Affairs and Trade's Council on Australia Latin America Relations recently. This is the second of a two-part series.



By **NEIL LYON**

**F**OR Australian wheat breeding specialist Richard Trethowan, having access to the largest wheat genebank in the world through the CIMMYT research organisation in Mexico is akin to giving a child free run in a lolly shop.

The University of Sydney Plant Breeding Institute professor, who was a wheat breeder at CIMMYT for 13 years, now heads a team of Australian breeders who travel to Mexico every two years to select potential breeding lines for the Australian wheat industry.

It is a trip Australians have been making since the first wheats from CIMMYT were introduced to Australia in 1973.

Today it is a fine-tuned process run under a partnership agreement called CAIGE which links Australia not only to CIMMYT but to another major wheat centre ICARDA in the Middle East.

On a recent selection trip to Mexico which coincided with the Borlaug Summit on Wheat for Food Security, Prof Trethowan and the team chose promising lines with traits they believe the Australian

## KeyPoints

- Yield first priority
- Diversity crucial to breeding
- Australian focus on quality



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— RICHARD TRETOWAN

wheat industry needs.

"We are looking firstly for yield," he said. "Beyond that we are looking for white-grained, short-statured types, a range of resistance to diseases, and diversity," he said.

"We look carefully at the pedigrees of the different lines. We are after pedigrees that are very different to what we have in Australia because that is new diversity.

"If we pick up a rust-resistant line in the field and take it back to Australia and it may have the same genes for resistance as the lines we currently have, we are not going to make a lot of progress.



**WHEAT INSPECTION:** University of Sydney Plant Breeding Institute Professor of plant breeding Richard Trethowan inspects a wheat trial at the Norman Borlaug Experimental Station, Obregon, Mexico, with AGT senior wheat breeder Meiqin Lu, Narrabri, NSW; Universities of Sydney and Qld's Sandra Micallef, Brisbane, Qld and Edstar Genetics principal Ian Edwards, Perth.

"But if we pick up a line that has a very different pedigree and origin, there is a much higher probability that it will bolster the defence against rust diseases in Australia."

The lines that make it through the selection process will be brought to Australia where they will be evaluated by breeders and provided to breeding companies to cross with other lines.

Professor Trethowan said the reason CIMMYT did not release them directly was because of quality issues.

"Here at CIMMYT the focus is on the developing world where

they need volume in their wheats," he said. "Most people there turn CIMMYT wheats into flat bread so they don't need premium quality.

"In Australia we have a segmented export market and distinct quality classes.

"The basic quality you find in the CIMMYT wheats doesn't fit those quality classes, so there needs to be a cycle of breeding that takes advantage of the yield and disease resistant traits of the CIMMYT material and the quality of the Australian material. That is what the plant breeders do in Australia."

## Partnership aims to boost yields

A NEW international partnership which aims to increase wheat yields by 50 per cent by 2034 was launched at the Borlaug Summit on Wheat for Food Security in Mexico recently.

The International Wheat Yield Partnership brings together research funders, international aid agencies, foundations, companies and wheat research organisations.

CIMMYT Global Wheat Program director Hans Braun said research focused on yield was critical for providing calories and protein to the 4.5 billion people who depended on wheat for their sustenance.

"Wherever breakthroughs are found they will be bred as rapidly as possible into elite, commercially viable seed by CIMMYT or other public-sector breeding programs and also by the private sector," he said.

"The potential of these breakthroughs will then be evaluated in relevant environments across the world and continually developed until those capable of achieving the desired yield gains can be released as finished varieties."

IWYP board of founding partners chairman Steve Visscher said the world's population was estimated to reach 9.6 billion by 2050 and wheat production would have a crucial role to play in food security and the global economy.

"We need a collective global approach to make more wheat available," he said.

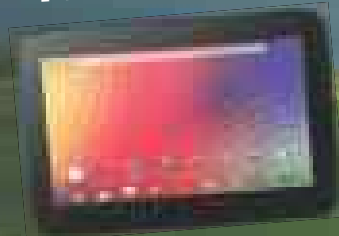
"It is the most widely grown staple food crop and the new varieties with increased yield will be vital to feed the world's growing population."

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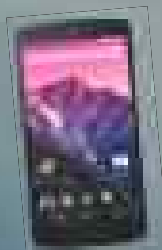
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