

WONDERS OF WHEAT AROUND

By NEIL LYON

THE world's leading wheat scientists gathered in Mexico at the end of March for a special Borlaug summit, marking the 100th birthday anniversary of renowned international wheat breeder, Norman Borlaug.

Dr Borlaug, who died in 2009, spent much of his working life with the international wheat and maize research organisation CIMMYT, in Mexico, and was credited with developing wheat varieties that saved Mexico, India and Pakistan from famine in the mid-1900s.

He was awarded the Nobel Peace Prize in 1970 and became popularly known as the Father of the Green Revolution. The week-long program of conference sessions and field visits was held at Obregon in the Yaqui Valley in Mexico's north-west, where Dr Borlaug did much of his work.

The Yaqui Valley is one of Mexico's key bread-basket regions, built around a 220,000-hectare, wheat-based irrigation area fringed by desert. It is also the site of a large field station, the Norman E. Borlaug Experimental Station (CENEB), where CIMMYT scientists develop new varieties and farming systems,

Australians tend to be pioneers ... have a can-do attitude.

primarily for the developing world. Australia has had long-standing links with CIMMYT through extensive levels of funding and the involvement of a large contingent of Australian agricultural scientists over many decades.

The majority of wheat varieties grown in Australia have been derived from the CIMMYT program.

CIMMYT director general Thomas Lumpkin (pictured) said Australia contributed to the work at CIMMYT "far and beyond its global per capita size". "Often some of our best scientists come from Australia," he said.

"Australians tend to be pioneers. They are robust and can handle physically uncomfortable situations. They are open-minded and

have a can-do attitude."

The CIMMYT Board of Trustees chairman is South Australian farmer Andrew Barr, who said the wheat germplasm that had flowed out of CIMMYT over the years had brought immeasurable benefits to Australian farming.

"Of all the places around the world where genetic resources have contributed to Australian wheat breeding, CIMMYT has by far the biggest influence," he said.

Dr Barr said the organisation was continuing to expand on the work conducted in the 1970s and 1980s by Dr Borlaug, who developed a 'shuttle breeding' program using high altitude and low country sites that gave researchers in Mexico the opportunity to grow two generations of crop in a year, vastly speeding up research. "In more recent times, CIMMYT has expanded that shuttle breeding program that was previously just in Mexico to include places in other parts of the world that contribute different things now to the genetic base in CIMMYT," he said.

"The change in the past 10 years has been the incorporation of Njoro in Kenya near where the new stem rust race, Ug99, occurred. It is a very virulent rust and knocked over 79 per cent of the world's wheat varieties.

"Australia hasn't had stem rust Ug99 yet, and we don't have some of the stripe rust races that are in Kenya either. But Australian breeders now have had a chance to see how their material would fare against a formidable opponent. It is pre-emptive action."

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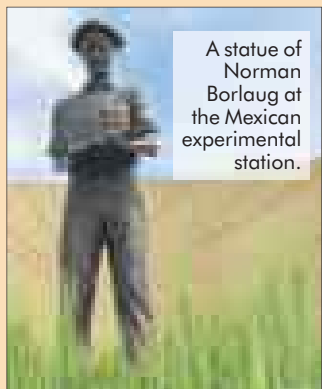
ABOUT CIMMYT

- CIMMYT is the Spanish acronym for the International Maize and Wheat Improvement Centre based in Mexico.
- One of 16 internationally funded research centres around the world supported by the Consultative Group on International Agricultural Research (CGIAR).
- Holds the largest collection of wheat varieties in the world.
- The majority of Australian wheat varieties originated from CIMMYT.
- At the recent Borlaug summit, CIMMYT was presented with the World Food Prize for its work in improving the quality, quantity and availability of food in the world.

CIMMYT Board of Trustees chairman and South Australian farmer Andrew Barr in a wheat field at the Norman E. Borlaug Experimental Station (CENEB), Obregon, Mexico, during the Borlaug Summit.

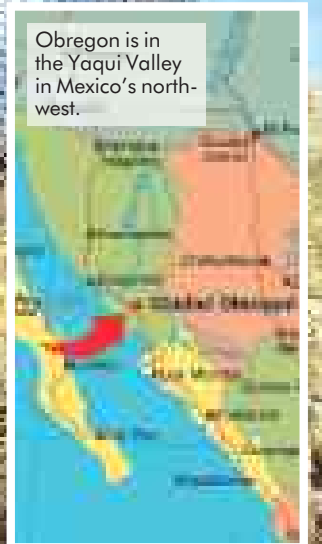
NORMAN BORLAUG

- Born in Iowa in 1914.
- Developed high-yielding, disease-resistant wheat varieties and farming practices.
- Introduced dwarf wheats that helped Mexico, India and Pakistan become self-sufficient in wheat production.
- Credited with saving as many as 1 billion people from starvation.
- Became known as the Father of the Green Revolution.
- Won 1970 Nobel Peace Prize.
- Died in 2009, aged 95.



A statue of Norman Borlaug at the Mexican experimental station.

Obregon is in the Yaqui Valley in Mexico's north-west.



SPECIAL REPORT

MORE stories by Neil Lyon in this special report:

- The future of the world's wheat rests in massive vaults at the CIMMYT research centre just outside Mexico City, where 150,000 lines of wheat seed, from primitive wild races to the latest purpose-bred varieties, are safely stored. - p16
- The Yaqui Valley in north-west Mexico is an oasis of irrigated agriculture surrounded by a vast desert - ideal for breeding and developing wheat varieties suited to Australia. - p17.
- Mexican grain growers trying to run their farms' conservation practices are unhappy about the traditional right of herdsmen to run stock on crop stubble country. - p17



Working towards feeding a growing world population

A NEW international partnership with aims to increase wheat yields by 50 per cent by 2034 was launched at the Borlaug summit on wheat for food security in Mexico.

The International Wheat Yield Partnership (IWYP) 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

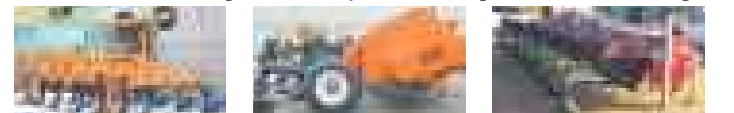
programs, and also by the private sector," he said. "The potential of these breakthroughs will then be evaluated in relevant environments across the world, and continually developed until those capable of achieving the desired yield gains can be released as finished varieties."

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. 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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