By NEIL LYON

This world-leading wheat scientist, who has been recognized for his contribution to the Green Revolution, Norman Borlaug, has died at the age of 93. He was known widely as the Father of Modern Agriculture and was awarded the Nobel Peace Prize in 1970 for his work in developing high-yielding, disease-resistant wheat varieties. Borlaug’s work has been credited with saving millions of lives by increasing wheat yields in developing countries.

Borlaug’s research at Mexico’s International Maize and Wheat Improvement Centre (CIMMYT) has been pivotal in the development of high-yielding wheat varieties that are resistant to disease and can be grown in arid environments. CIMMYT’s research has contributed to the production of more than 50% of the world’s wheat and has been instrumental in feeding millions of people around the world.

Norman Borlaug

A statue of Norman Borlaug at the Mexican experimental station.

Wonders of Wheat Abound

By NEIL LYON

This world-leading wheat scientist, 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-1960s.

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 breadbasket 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, 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 Daniel Lusankhu (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 innumerable 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 last 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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Working towards feeding a growing world population

A NEW international partnership with aims to increase wheat yields by 50 per cent by 2050, and wheat production would have a growing world population.”

“The potential of these break-throughs will be 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 is expected 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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