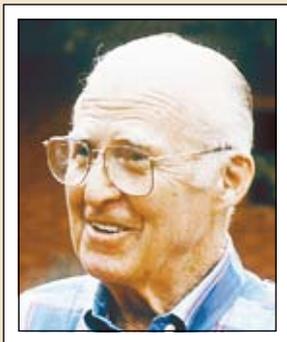


FATHER OF THE GREEN REVOLUTION HAS DIED

Dr Norman Borlaug, the Iowa farm boy who won the Nobel Peace Prize in 1970 for his efforts to feed the world's hungry, died Saturday September 12, 2009 at his home in Dallas, Texas. He was 95.

A self-described "corn-fed, country-bred Iowa boy," Dr Borlaug was called "the Father of the Green Revolution" for his work developing high-yielding strains of wheat that were credited with staving off the starvation of millions of people in Asia in the 1960s.

Dr Borlaug, revered around the globe, was one of five people to have won the Nobel Peace Prize, the US Presidential Medal of Freedom and the Congressional Gold Medal – the others are Martin Luther King Jr, Mother Teresa, Elie Wiesel and Nelson Mandela.



When it was announced in 1970 that Norman Borlaug had won the Nobel Peace Prize, he was working in experimental fields outside of Mexico City.

At first, Dr Borlaug thought the report that he had won the Nobel was a joke, and he had to be persuaded to return to the city for a news conference. When he arrived, he was wearing his work clothes, with dust on his shoes and dirt on his hands.

"I wanted to show the TV men what makes an agricultural scientist – dirty hands," he said. "I washed them later."

Despite ongoing illness, Dr Borlaug maintained an ambitious travel schedule into his 90s. He continued to teach at Texas A&M and with his work for the International Maize & Wheat Improvement Center (CIMMYT) in Mexico – where he did his breeding work that led to the Nobel Peace Prize.

More than 90 per cent of the wheat varieties currently grown in Australia, can be traced back to CIMMYT and the pioneering work of Dr Borlaug.

Acknowledgement: Des Moines Register

AN INSPIRATION IN THE WORLD OF AGRICULTURE

In 2003 Dr Norman Borlaug visited Australia as a guest of the GRDC for Grains Week. At 89 years of age at the time, and going strong, he enlivened young scientists, politicians and growers alike with energetic first-hand stories spanning 70 years of global science, conservation and economics. Dr Borlaug was definitely an antidote to the notion of retiring at age 55.

While in Australia Dr Borlaug met with growers and addressed various meetings including the Grains Week Conference. He noted that in the ongoing debate about genetically modified crops – "the gene for common sense is pretty badly eroded" – and recalled the wall of criticism he faced with an earlier generation of biotechnology applications that supported the life-saving work of the Green Revolution.

Saying "it's up to you young people", he urged scientists to speak out in a biotech debate that is often extreme and perhaps risk-averse in the wrong directions.

His words remain just as relevant today as they were in 2003.

Dr Borlaug's visit to Australia in 2003 was to help raise awareness of the increasing need for global crop production to become more efficient. He believed there were many economic and environmental reasons in developed countries – and even more compelling societal and humanitarian reasons in populous, poor regions – for achieving higher grain production and improved productivity.

Dr Borlaug saw biotechnology – the science that he used to save more lives than arguably any other person in history – as the key.

Dr Borlaug bred high-yielding wheat and rice cultivars in the 1960s, averting chronic famine on the Subcontinent and Southeast Asia.

At the time, the Asian population crisis was considered a lost cause. But Dr Borlaug believed modern plant breeding and agricultural science could make a difference – and it did. His work effectively changed the course of history, allowing countries like India and many Southeast Asian nations to develop stable societies and economies.

In essence, he stopped Asia from following the troubled path of many African nations.

Forty years later in Australia, Dr Borlaug said the world needed another step-change in production efficiencies, which is why he championed the use of biotechnology, including genetically modified (GM) crops.

He said if it hadn't been for the plant breeding technologies developed since the 1960s, a further 1.1 billion hectares of land would need to have been cleared to achieve the current global harvests.

"To me it's more rational to concentrate our food and fibre production in areas best suited for agriculture and preserve as best we can these other areas for habitat, for wildlife and for forest green."

Demystifying biotech

Dr Borlaug spent a lifetime demystify biotechnology, describing it as a tool that essentially produced the same outcomes that could occur naturally, but within a few years rather than a few hundred or few thousand years.

the assistance of the GRDC, investigates recent advances in international grains R&D.



The concern among a group of growers who gathered on John Lush's (far left) SA property in 2003 to meet Dr Borlaug (second from left), was the potential risk that GM crops, such as canola, might pose to existing markets. But Dr Borlaug believed Australian growers stood to lose more by not having GM technologies ready because they wouldn't be able to compete against producers that did have them. (PHOTO: Brad Collis, Coretext)

"It's simply a tool, but an exciting tool that will take to a higher level what we've been doing previously with conventional genetics," he said.

He emphasised that genetic engineering is not a replacement for conventional breeding but a complementary research tool that can quickly and precisely transfer desirable genes from remotely related taxonomic groups to enhance yield and quality.

At a standing-room only public forum in Canberra in 2003, organised jointly by the GRDC and the CSIRO, Dr Borlaug spoke about 'the Green Revolution revisited'. He described the agricultural changes that took place as a coming-together of agronomy, education and economic policies: "It's not just a package of technology. It's also policies such as the availability of production inputs, credit for the small farmers and reasonable prices."

Then, as now with gene technologies, Dr Borlaug said change always came with an abundance of criticism. Addressing young scientists at the forum, he said they were inheriting the job that his generation had started, and criticism of technology was something they would have to cope with.

"But if you stand still with populations growing, there's worse trouble ahead for the world of human beings," he said.

"When I was born, the population was about 1.5 billion. Now it's 6.2 billion and we're adding 80 million more [every year]."

Dr Borlaug said the challenge for young agricultural scientists in countries like Australia was to continue with all aspects of food and fibre research, to make sure developments like biotechnology were used properly, and to ensure that advances in agriculture were moved into those countries that had so far been left behind.

If you can do that, you'll have a better world to live in. "Hunger and misery are dangerous, explosive ingredients."

Brad Collis, Ground Cover/Coretext

WA IN THE SPOTLIGHT FOR GLOBAL PLANT GENETICISTS

Perth will become 'gene central' for the world's leading genome scientists this November, and Australia's grain industry will be among the major beneficiaries.

The GRDC sponsored OECD-GenomeAssociation-OZ09 conference will be held at the University of WA, 9-12 November 2009. The major focus of the conference is on applying the incredible advances in human and animal genome mapping technology to grain crops.

According to conference convenor, UWA Professor Wallace Cowling, major advances are occurring through genome association mapping in humans, animals and some plant species.

"The challenge of this OECD conference is to provide plant breeders with a clear path towards the application of association mapping to plant genetic improvement," Wallace said.

"For this reason, we have speakers from the human genetics field, where genome-wide association is pinpointing genes associated with human disease, as well as scientists involved in animal breeding, where genome-wide association is being exploited to accelerate genetic improvement.

"While emphasising Brassica crops, the conference aims to find ways of applying the new association genetics to all grain crops – by bringing together world leaders in plant breeding, biometrics, and molecular genetics with outstanding visiting speakers from animal breeding and human genetics."

Wallace said this was the first time an OECD international conference had been held in WA and it would provide a major boost for Australia's plant breeders – which would ultimately impact productivity in the national grain industry.

"For the plant breeding community this is a wonderful opportunity to hear from some of the world leaders in genome mapping and associated technology from within and outside plant breeding, and learn new ways of applying that technology in Australia."

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Wallace Cowling says the conference will be a wonderful opportunity to learn new ways of applying human and animal genome mapping to plant breeding.