

The Man who Fed the World Nobel Peace Prize Laureate Norman Borlaug

By Leon Hesser

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As you read this sentence now – 800 million people in the developing world are suffering from chronic hunger and twenty children have just been born. Think about this for a while and its implications. How do we ensure we feed those in current need and those who will need food in the future – the world's growing population of another 2.5 billion people within the next forty years? From 1914, in the span of one man's lifetime, the world's population has grown from 1.6 to 6.4 billion, outstripping food supply in many countries of the world. If it had not been for the Nobel Peace Prize Laureate and internationally acclaimed scientist Norman Borlaug, millions upon millions of people's lives would, in less than that lifespan, have been lost to the suffering of malnutrition and starvation. Hence, the very apt title for Norman Borlaug's biography, *The man who Fed the World* – a concisely written and a well balanced account of a modest unassuming man whose achievements have been of global importance.

The story of Norman Borlaug is a remarkable one – a clear case of ability matched with opportunity to enable one man to really change the world. Having recently survived another summer of obsessive navel gazing over GCSE and A-level examination results it is refreshing to read of a man born in 1914, a child of the Iowa prairie, who attended a one-teacher, one-room school; failed the university entrance exam; had an ambition to be a high school science teacher and athletic coach and yet in his 93rd year has obtained more than 50 honorary doctorates from 18 different countries and is acknowledged as one of the hundred most influential people of the twentieth century. It reminds us that ability is not just about exam performance and that some of the world's greatest individuals succeed in spite of apparent disadvantage and their education system.

The story of Norman Borlaug is a great story – a story of scientific endeavour, courage, hard work, personal sacrifice and duty – the stuff with which heroes abound. And Norman Borlaug clearly is one of our 20th Century heroes. As a thirty-year-old US scientist, based in Mexico, Norman Borlaug embarked on three innovations that formed the basis of a wheat revolution in Mexico that ultimately fostered the *Green Revolution* in Asia. First, he painstakingly crossed thousands of wheat varieties to identify those resistant to the devastating fungal rust diseases of wheat. Next, against all the better judgement of his superiors and the prevailing wisdom, he initiated a 'shuttle-breeding' programme that halved the time needed to develop new cultivars, and fortuitously, resulted in the seeds that were globally adaptable. Then, he changed the

architecture of the wheat from gangly tall to a short-stawed, heavy-tillering structure that responded well to fertiliser. The combination of these three innovations caused wheat yields to rocket. If this was all that Borlaug's work had achieved it would have been remarkable enough, however there were further knock-on effects that changed global agriculture.

The principle elucidated by Borlaug of growing dwarf varieties and creating globally adapted cultivars was transferable to other staple crops such as rice. This then formed the basis of a different approach to plant breeding that enabled the *Green Revolution* – averting starvation in Asia and many other countries during the 1960-80s. The Borlaug approach to plant breeding also lent itself to the establishment of internationally funded research centres to complement the national agricultural research and training programmes. Originally the centres were established primarily as plant breeding institutes but they have since diversified and there are now fifteen such centres around the world with an annual expenditure of around \$350 million (which sounds a lot until you consider that the same amount would probably buy you only five Euro-fighters) specialising in tropical, dry-land and semi-arid crop development for cereals, potatoes, pulses and vegetables, but also addressing key research issues in water, forestry, livestock, fish and preservation of genetic resources. The UK supports these institutes through funding from DfID.

Although Norman Borlaug's contribution to the world has been in providing a means of averting starvation and malnutrition, his biographer points out that Professor Borlaug has always recognised that the real battle is with population growth – the 'population monster' as he calls it. Borlaug is right of course to highlight the source of the problem that has been the driving force of his life's work and asking the question of the future, 'Where will the food come from?' Let's hope that those who have failed to include population issues in the Millennium Development Goals and those organisations and governments who fail to prioritise and support continued scientific and technological advance in agriculture know the answer to this question because if they don't, after reading this immensely interesting book, I know a man who does – Norman Borlaug – the man who fed the world!

In the time it has taken you to read this review more than 500 children have been born and 800 million people remain chronically hungry!

David Dent