

THE WORLD FOOD PRIZE

The Dr. Norman E. Borlaug
Memorial Lecture

By

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As the President of the World Food Prize, the international award created in 1986 by Norman Borlaug, it is a great honor for me to have been invited to deliver the Dr. Norman Borlaug Memorial Lecture at the 8th International Wheat Conference here in St. Petersburg.

For the past 10 years, it was my enormous privilege to work closely with Norm, to travel with him, to listen to his stories, to learn from him, and now to preserve and carry on his tremendous legacy. While our backgrounds couldn't be more different – Norm, a farmer and plant scientist and me, a diplomat and political scientist – we share a common experience that joined us together: The power of agricultural innovation and rural roads to transform societies and uplift people out of poverty.

I am so very pleased that Norm's daughter, Jeanie Borlaug Laube, is here in her capacity as the chair of the Borlaug Global Rust Initiative. Jeanie and I were together just two months ago on March 25, Norm's birthday. We were in the Yaqui Valley in Mexico as her father's ashes were placed in a monument with a statue of him, paid for by the farmers in the Yaqui Valley where Norm did his earliest, and most important, work. I am also pleased that others who were there are here as well, including Dr. Ronnie Coffman, Dr. Tom Lumpkin, the Director of CIMMYT, and Dr. Ed Runge.

It is especially appropriate that this conference is being held in conjunction with the NI Vavilov Research Institute of Plant Industry. Norman Borlaug had great admiration for the pioneering work of Professor Vavilov. They also had a slight geographical connection. While Professor Vavilov's global travels are celebrated, it is perhaps not so well-known that during his inaugural trip to the United States in 1922, he visited Norman Borlaug's home state of Iowa. Norm would have only been eight years old at the time, so it is quite unlikely that their paths would have crossed. Eight years later, in 1930, Dr. Vavilov returned to the US and this time stopped in St. Paul, Minnesota, the very city where Norm would begin his university training just two years later.

Although they never met, Nikolai Vavilov and Norman Borlaug, had a number of other things in common:

- They both were inspired by an older professor's breakthrough achievements, which then led to their own magnificent accomplishments;
- They both saw that the most important work they could do was not in the laboratory but in the fields, with poor farmers in remote areas.
- They both traveled extensively to remote places, often apart from their families for long periods of time, in search of greater understanding of science.
- And they both were fascinated by how organisms confronted disease and how immunities could be developed.

In his early research at the Petrovsky Agricultural Research Institute, Vavilov learned about the new science of evolutionary genetics. He was intrigued by the work of a British scientist, R.H.

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Biffen, who, using Mendel's principles of inheritance, had bred resistance to yellow rust into hybrid wheat.

Early in his career, Vavilov wrote, "I am above all a plant pathologist." But, if Norm had been asked what he was at a similar age, his answer might have surprised many.

For one of the most interesting things about Norman Borlaug's life is that he did not start out with the intention to be a plant pathologist, or a wheat breeder or an agricultural scientist. He wanted to be a forester.

In 2001, I traveled with Norm to Norway for the 100th anniversary of the Nobel Peace Prize. As we drove through Oslo, Norm told me the story about how he had actually gone to work at the US Department of Agriculture, as he put it, through the side door of the Forestry Service. He was given a summer job as a forest ranger and said he came to love the solitude and his study of trees. When he returned to the University of Minnesota for his final year of study, he was offered and accepted a permanent job in the Forest Service which he would begin right after he graduated. With the prospect of a paying job, he married his fiancée Margaret Gibson.

And it was Norm's interest in how to fight rust disease on trees that brought him to a lecture by Dr. Evan Stakman at the University of Minnesota. Stakman's explanation of his work as a plant pathologist to detect and defeat rust disease in wheat so thrilled Norman Borlaug that, as he told me, when the lecture was over, he ran after Professor Stakman, to ask him if he would please let him into his PhD program in plant pathology. Stakman agreed, Norman Borlaug then resigned from his position with the Forest Service, and the future of agriculture was changed.

Norm eventually went to Mexico with Dr. Stakman as part of the Rockefeller Foundation program to share the latest agricultural technology with Mexican farmers. You all know that it was during the next twenty years that Norm Borlaug was able to develop his new varieties of wheat that were both disease-resistant and produced amazing increased yields. When he took those new seeds to India and Pakistan in the 1960s, the Green Revolution was born.

But as many of you know, it was seeds from a dwarf variety of wheat, known as Norin-10, developed in a remote part of Japan by a Japanese scientist named Gonjiro Inazuka, that allowed Norman Borlaug to make his final breakthrough achievement. And those Norin-10 seeds came to him only very indirectly and only because a number of scientists were willing to share seeds with each other. This made Norm a great believer in biodiversity.

Like Professor Vavilov, Norm believed deeply in the importance of preserving seeds and germ plasm for the critical genes or characteristics that they could add to a new variety. I know Norm would praise the amazing collection which the Vavilov Institute has here. I remember the encouragement he gave to Cary Fowler when we met at the Norwegian Agricultural Institute in ASE in 2001, when the plans for the Norwegian Seed Bank at the North Pole were just being formulated.

Earlier this year, I was privileged to travel to Chennai, India, to deliver an address honoring Norm at a conference on the Year of Biodiversity at the M.S. Swaminathan Research Center.

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Dr. Swaminathan was a partner with Norm in bringing the Green Revolution to India in the 1960's.

Norm would be so pleased that this sharing of information is what all of you are here at this conference to do.

Norman Borlaug was as humble as he was dedicated and hard-working. Nothing better demonstrates this humility and dedication than the fact that, like Vavilov, he found his greatest satisfaction in working with the poorest farmers in the most remote areas of Mexico. Dr. Ronnie Coffman, Norm Borlaug's only Ph.D. student, told me the story about how Norm learned that he had won the Nobel Peace Prize. A phone call came from Oslo, Norway, to the Borlaug home in Mexico. As you might expect, Norm and Ronnie Coffman were already out in the fields marking crops. Norm's wife Margaret took the call and then drove for over an hour to deliver the news to him and to tell him that he had to come home immediately to return the call. Norm told her that he still had several more hours of work and that he couldn't possibly leave now. It was there, an hour later, that the television camera crews from Mexico City found Norman Borlaug – the Nobel Laureate – still working in the fields with Mexican farmers.

Norman was thrust into the global spotlight when he went to Norway in December 1970, the country from which his ancestors had left in the middle of the 19th century, fleeing from the devastating potato famine. Here he was, the first agricultural scientist ever to receive the Nobel Peace Prize, being honored as the Father of the Green Revolution, as the man who led the effort that pulled India and Pakistan from the brink of famine, saving hundreds of millions from hunger, starvation and death.

Shortly after he received the Nobel Peace Prize, Dr. Borlaug approached the Nobel Committee with what he felt was a very reasonable proposal. While thanking them for the recognition he received, he explained that there were a great many other agricultural scientists who also deserved to be honored. He therefore urged the committee to establish a new Nobel Prize for Agriculture and, in Norm's usual fashion, told them it needed to be done right away.

The Nobel committee explained that they very much regretted that this would not be possible, since it was not provided for in Alfred Nobel's will. Norm was discouraged, but like in everything else he set out to accomplish, he didn't give up. In 1986, with corporate support, he created the World Food Prize.

In 1990, the Prize was moved to Des Moines, Iowa, where it has been endowed and supported by the Ruan family. Over the last 24 years, it has grown in scope and prestige, as Norm hoped it would. Every October, on or about UN World Food Day – October 16 – the eyes of the world turn to Des Moines as the new World Food Prize Laureate receives his or her \$250,000 prize in a very moving ceremony in the magnificent Iowa State Capitol.

Laureates have come from countries around the globe, including Bangladesh, Brazil, China, Cuba, Denmark, Ethiopia, India, Mexico, Sierra Leone, Switzerland, the United Kingdom, the United States and the United Nations. They have been honored for Nobel-like breakthrough achievements in a wide variety of fields, including the development of high-yielding rice in

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China, the Philippines and Africa; the opening of the Cerrado region in Brazil to agricultural production; eradicating animal disease in Africa; enhancing food storage and transportation between continents; providing microcredit opportunities to extremely poor women in South Asia; and delivering food to hungry children and starving refugees from North Korea, to Afghanistan to the Horn of Africa.

One June 16, I will announce the name of the 2010 Laureate at a ceremony in Washington, DC, with US Secretary of State Hillary Clinton as guest of honor. On October 14 in Des Moines, we will present this “Nobel Prize for food and agriculture.” Norm wanted this prize to be both a recognition of past achievements, as well as an inspiration to scientists, experts and farmers to make similar breakthrough accomplishments in the future.

Around this ceremony, Norm built a symposium. He wanted it to be a time when experts from around the world could come together to share information and to build relationships across disciplines. He knew that the future success of scientific efforts to produce more food would only come if scientists were free to work together across national borders and share their information. The Borlaug Dialogue is now a three-day conference attracting participants from more than 65 countries and from an array of disciplines, including plant scientists, hunger advocates, soil experts, government leaders and agribusiness executives.

Norm was so very pleased to see the conference grow and each year attract more and more illustrious and distinguished speakers. Last year, Bill Gates, the co-chair of the Bill and Melinda Gates Foundation, chose the Borlaug Dialogue as the place to give his first ever speech about agriculture and bringing the Green Revolution to Africa. He stressed the importance of focusing on the key role that smallholder farmers play in uplifting developing countries. This year, his Excellency Kofi Annan, the leader of AGRA, the Alliance for a Green Revolution in Africa, and also a Nobel Peace Prize Laureate, will keynote the conference.

There could be no greater tribute to Norman Borlaug than to have such individuals at the conference he created. And the Borlaug Dialogue is providing the kind of results that are most important to you. Last year, the Minister of Agriculture of Egypt was asked about a particular aspect of rust disease by the senior representative of the Ministry of Agriculture of Pakistan. The Egyptian Minister quickly called for his staff, who set in motion the exchange of information about their individual experiences.

But there is one other aspect of Norm’s life that needs to be emphasized – his role as a teacher. Norm had originally planned to attend a teachers’ training college in Iowa, so that he might pursue a career as a high school science teacher. I’m sure he would have been great in the classroom, but fate – and a hope to play on the football team – took him to the University of Minnesota instead, and eventually to a career in agricultural science.

But Norm remained a teacher at heart. So each year, we welcome 125 high school students and 125 high school teachers to the Borlaug Dialogue. They get a chance to interact with all of the scientists and leaders from around the world and then a chance to present their own papers at a Youth Institute. Norm always said it was his most favorite part of the entire World Food Prize week.

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Each summer, we send 15 of these high school students as Borlaug-Ruan Interns to work at leading international agricultural research centers in Asia, Africa, the Middle East and Latin America. And during my time here in Russia, I will be exploring the possibility that we might create a placement for another one of these Borlaug-Ruan Interns. Dr. Dzuybenko, it would be particularly appropriate if we could place a Borlaug-Ruan Intern at the Vavilov Research Institute. I hope we could discuss this possibility during my time in St. Petersburg.

Shortly before his death, I traveled to Dallas, Texas, to see Norm one last time. He encouraged me to continue to build the World Food Prize. Norm's last words on September 12 were "Take it to the farmer." This is the theme for our Borlaug Dialogue, and the words that best sum up Norm's life, and what I feel certain would be his message to you today.

To honor Norm's memory, my World Food Prize Foundation is engaged in a \$30 million project to restore a century-old historic building in Des Moines, which will be the Norman E. Borlaug Hall of Laureates. It will serve as the home of the Borlaug Dialogue and the Youth Institute, and as an enduring monument to Norm's achievements. Jeanie Borlaug Laube was with us last October as we began construction. The building will be completed in October 2011, in time for the 25th anniversary of the World Food Prize. I invite all of you to come to Iowa to visit it.

Sometimes I am asked by visitors to explain exactly what the World Food Prize is. I often liken it to the "Olympic gold medal in food production and fighting hunger." I know that Russia will soon host the Olympics and so this comparison may have special meaning. And during the Olympics, there are often relay races where one athlete may pass a baton to another. I like to think of Nikolai Vavilov and Norman Borlaug as two of our greatest Olympic competitors in the race for the gold medal for feeding the world: Not as competitors against each other, but rather as members of the same international relay team.

During the first half of the 20th century, Vavilov carried the torch as he made his great achievements and traveled to many countries. And, with his death in 1943, that torch was passed to the young Norman Borlaug, who was just beginning his scientific odyssey in the remote parts of Mexico, working with the poorest farmers in the Yaqui Valley. Although no one would have known it at the time, Borlaug became not only the greatest agricultural scientist of the second half of the 20th century, but of all time. He carried the torch high, to face the new challenges of feeding the burgeoning world population.

With Norman Borlaug's death last September 12, that torch is now passed to this next generation of scientists – to your generation. Who will emerge as that next torch bearer is not yet clear. Perhaps it is one of you here today. One of you who will, like Vavilov and Borlaug, emerge into history as the individual who made that next, critical breakthrough achievement.

Perhaps it is one of you who will fulfill what Norm told me was perhaps his greatest dream – to isolate the gene or that aspect of the rice plant that keeps it from developing rust disease, and transplant it into wheat.

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One of the most interesting things about the World Food Prize is that, while it was created by the most famous wheat scientist of all time, it has never been awarded to one. Norman Borlaug won the Nobel Prize for his work on wheat, but to date not one of the 31 Laureates has been given the World Food Prize for an achievement related to wheat. And yet, there is perhaps, here in this hall, one of you who will someday receive a call from me or from whomever is the President of the World Food Prize, telling you:

- That your amazing research, your years and years of hard work, your breakthrough achievement in dealing with rust disease or in increasing wheat production has meant that the burgeoning world population will have enough nutritious food;
- That you have been chosen to join the pantheon of agricultural heroes – the World Food Prize Laureates; to join those individuals who with Norman Borlaug produced the fifty-year period which was the single greatest period of food production and hunger reduction in the history of the human race;
- That you will be invited to Des Moines to receive the World Food Prize – the prize that Norman Borlaug created and which the President of Mexico and the President of Germany have both called “the Nobel Prize for food and agriculture.”

If Norman Borlaug were still alive, I know he would be here today, speaking to you, encouraging you, maybe even yelling at you. He would be telling you about all the things that he learned on that farm in Iowa, in school in Minnesota, teaching at Texas A&M University, and working with farmers in Mexico, India, Pakistan, China and in Africa. He would be telling you to increase your dedication, to learn from each other, and to continue your struggle against that horrible foe rust disease, that biological enemy that he had confronted and defeated years ago but which has now reemerged as a 21st century threat.

At the conclusion of his speeches, Norm liked to encourage his audience to follow the lessons he learned early in life: he would urge them to reach for the stars and to never give up.

And so, as you begin your work, I hope that you will feel as I do, that the spirit of Norman Borlaug is here with you today in this room, and that he will be with you throughout this conference, and that he will be with you as you return home to continue your work – looking over your shoulder and all the time encouraging you to reach for the stars, and telling you to never give up.

Thank you.