

NBHF Notes 2016

Kendall S. Natvig, 2004 NBHF Educational Resident, developed this study guide. Since the guide was developed, many things have changed. In 2006 he was awarded the Congressional Gold Medal and in 2008, the Padma Vibhushan award from the government of India. Also, there are references in the material to Dr. Borlaug as living. Dr. Borlaug died on September 12, 2009.

The curriculum prepared by Mr. Natvig is a valuable asset for teachers. However, the books and videos recommended are not readily available. The NBHF suggests the addition of the following resources:

Books by Noel Vietmeyer (available on Amazon)

- [Our Daily Bread](#) (A condensed version of the three volume set below)
- [Borlaug; Volume 1, Right off the Farm 1914-1944](#)
- [Borlaug; Volume 2, Wheat Whisperer 1944-1959](#)
- [Borlaug; Volume 3, Bread Winner 1960-1969](#)

Video: [Freedom from Famine](#) from Iowa Public Television

The NBHF also suggests using resources from our [Education page](#). If you would like additional suggestions, or if you would like to explore the possibility of a guest speaker from the NBHF, please contact us via email at <mailto:nbhf@normanborlaug.org>.

STUDY GUIDE

FACING STARVATION

This study guide is a work prepared by Kendall S. Natvig, education resident at the Borlaug Heritage Farm in 2004. This work and the author's residency are part of a grant from the NBHF (Norman Borlaug Heritage Foundation). As such this work becomes a property of NBHF but is meant to be used and distributed to high schools and colleges.

One of the primary frustrations of Dr. Borlaug's work has been the lack of young people showing an interest in world hunger and careers as agronomists. Thus one of the aims of NBHF is to acquaint young people with Dr. Borlaug and his work and encourage their participation in this area of study so that they may further his work and become one of his "apostles of wheat."

As such this study guide is set up for a multi faceted approach both in terms of lengths of usage and depth of study. It also is set up to be applicable to science, agriculture, English and government classes. Dr. Borlaug is a trained scientist but his work involves saving millions of lives and as such concerns itself with the humanitarian as well as scientific realm.

Dr. Norman E. Borlaug

A MAN OF VISION

Dr. Norman Borlaug, born and raised on a farm south of Cresco, Iowa, received the highest international tributes of greatness when he won the Nobel Peace Prize in 1970.

Dr. Borlaug was born on March 24, 1914, in the farm home of his paternal grandparents, Mr. and Mrs. Nels Borlaug.

The "seeds of love and knowledge" for Dr. Norman E. Borlaug, whose efforts to improve wheat production throughout the world prompted his receiving the Nobel Peace Prize on December 10, 1970, were sown in the heart of the nation's farm belt.

His education began in the new Oregon township rural school No. 8 where he completed the eighth grade in 1928. This was followed by his graduation from Cresco High School in 1932. It was on to the University of Minnesota after that. He received his Bachelor of Science degree in 1937 from the University of Minnesota, a master's degree in 1939 and a doctorate in 1942.

But his search for knowledge didn't stop with degrees. Each of his employment associations aided in his education and experience. First employment was in the U.S.

Forest Service's Northeastern Forest Experiment Station at Williamstown, Massachusetts. This was followed by other U.S. Forest Service posts in Idaho later in 1937 and at Gardner, Massachusetts in 1938. Norman Borlaug served as an instructor at the University of Minnesota from 1940 to 1941.

From 1942 to 1944, he served as a microbiologist with E.I. Dupont and Co., at Wilmington, Delaware, where he was in charge of research on industrial and agricultural bactericides, fungicides, and preservatives.

Dr. Borlaug began his interest as a geneticist and plant pathologist with the Rockefeller Foundation, in cooperation with the Mexican government, in 1944 and was assigned to organize and direct the Cooperative Wheat Research and Production Program in Mexico. It involved research in genetics, plant breeding, plant pathology, entomology, agronomy, soil science and cereal technology.

It was in 1959 that Dr. Borlaug was named assistant director of the Rockefeller Foundation and director of the Inter-American Wheat Research and Production program, a post he held until 1962.

Dr. Borlaug was named director of the Wheat Production of the International Center of Maize and Wheat Improvement Center in 1962. During this period, Dr. Borlaug had devoted most of his efforts to wheat research and production problems, and to the training of young wheat scientists on a global basis. He has also, during this period, devoted a large part of his effort to assisting programs in six Latin American countries and in eight Near and Middle East countries, including Pakistan and India. Under one aspect of this program, more than 140 young scientists from these countries have been trained in Mexico under his direction.

In 1970 Dr. Borlaug won the Nobel Prize for Peace which he was awarded in Oslo in December of that year.

From then on the scope of his work has only widened. After his work in Mexico in the 1950s, in Pakistan and India in the 1960s he pursued goals in China in the 1970s. In the 1980s and 90s he joined with President Carter and Ryoichi Sasakawa a Japanese philanthropist to form Sasakawa-Global 2000 which funded work on GE grain production in Sub-Saharan Africa after the Rockefeller Foundation and the World Food Bank began to back off funding this work. He also established the World Food Prize in the 1980s to award a scientist/humanitarian who each year has worked to reduce world hunger. This international ceremony and conference is now held annually in Des Moines, Iowa.

In 2004 Dr. Borlaug celebrated his 90th birthday by continuing his work and travels to fight hunger.

A MAN OF PEACE

“Borlaug is about peace... When people are starving there is no peace.” This quote from Dr. Charles Muscoplot, dean of the University of Minnesota College of Agriculture, Food and Environmental Science accurately assesses Dr. Norman Borlaug, Nobel Peace Prize winner of 1970.

In the summer 2004 film Troy there is a conversation between Achilles and a captive Trojan woman. This discussion concerned the nature of peace- basically the woman said “peace confuses warriors.” This conversation struck me as particularly apt in our society today and in particular to some of my work in relation to the NBHF (Norman Borlaug Heritage Foundation.)

As the 2004 Educator/Writer in residence of the Norman Borlaug Heritage Foundation and working periodically at the restored childhood farm in Northeast Iowa I am reminded again and again that Dr. Norman Borlaug is one warrior not confused by peace. In contrast to another living Nobel Peace Laureate, Dr. Henry Kissinger, who continues to publicize himself for dollars, Dr. Borlaug quietly works for peace. As winner of the 1970 Nobel Peace Prize and countless other honors Dr. Borlaug has warriored tirelessly for peace through agriculture for six decades.

Unlike the other three living* U.S. Nobel Peace Prize recipients (Borlaug, Pres. Jimmy Carter, and Dr. Henry Kissinger) Dr. Borlaug has maintained such a “below the radar” presence that the tabloid world is not very aware of his struggles. Unlike Dr. Kissinger who became a shill for the media outlets where he is paid huge dollar amounts for his commentary and a member on various corporate boards that reward him handsomely- not to mention murky political dealings that have caused cries of his war crimes in some circles- Dr. Borlaug discreetly traveled the world making sure it is fed and in so doing “hands on” promotes and establishes peace in his current arena- Sub-Saharan Africa. Recent celebrations of his 90th birthday have once again tried to bring much of his work to the world’s attention.

Although controversy continues over use of genetically modified or engineered grains, Dr. Borlaug has responded ferociously to this issue saying that “common sense” must prevail if we are to feed people living on subsistence level. Having spent time in Africa on a Fulbright in 2003 I can attest to the situation he refers to. Families living in their individual huts and homes have pitifully small gardens, much less fields, and similar yields. Bio technology and Dr. Borlaug’s guidance can raise the nutritional level of these people immensely. Recently the United Nations Food and Agriculture Organization published a statement that “finds that with investment of research money, the technology could be used to increase yields and reduce costs of producing subsistence crops for the poor... if safety and environmental concerns are taken into account biotechnology could play an important role in feeding the world’s growing population.” Once again the peaceful warrior, Dr. Bologa and his army of scientists are fighting and winning a victory for peace that does not confuse.

As he was celebrating his 90th birthday he was off to Uganda to do more consultation. Uganda is one of the African countries that is cruelly plagued with the HIV/AIDS epidemic. With Dr. Borlaug warring peacefully there grain production can increase in yield, nourishment along with anti-retroviral drugs have the potential for cleaning up the ravages of hunger and disease/plague- clarity of results will emerge- there is no confusion about Dr. Borlaug as he marches onward in his peaceful endeavor.

The victory and his work clarify the individual's role in society as one who must do something and keep on fighting, but fighting peacefully, to keep getting it done.

Kendall S. Natvig
NBHF Educator in Residence 2004

STUDY GUIDE DIRECTIONS

TIME: The amount of time spent on this unit is entirely at the discretion of the instructor. What follows is a list of the book, Facing Starvation*, videos, possible projects and research papers and topics. It is up to the instructor to decide to what extent the students should read in the book- the entire text, selected portions, etc. Since the book is out of print library copies will need to be used and put on reserve and that will determine to some extent the time allowed for study. The other time consideration applies to the paper and research projects which may be assigned at a center point in the semester but not due until a later time. In other words, there can be some immediate introduction to Dr. Borlaug's life via the videos, assigned readings or handouts and in depth study of his scientific and humanitarian work over a prolonged period of time.

*The NBHF suggests the addition of the following books by Noel Vietmeyer:

- Our Daily Bread (A condensed version of the three volume set below)
- Borlaug; Volume 1, Right off the Farm 1914-1944
- Borlaug; Volume 2, Wheat Whisperer 1944-1959
- Borlaug; Volume 3, Bread Winner 1960-1969

GRADE LEVEL: Due to the structure of this guide this unit can be taught to 11 or 12th grade high school students or college freshmen. The amount of work and difficulty of research would be adjusted by the instructor to fit the level being taught.

CLASSES: As stated within the discussion of time frame the focus classes for the unit would be science, agriculture, English (literature or composition) or government. The possibility also exists for various instructors or departments to team up for an approach to Dr. Borlaug's life.

TEXT: Facing Starvation: Norman Borlaug and the Fight Against World Hunger by Lennard Bickel, Readers Digest Press, Distributed by EP Dutton & Co., Inc., New York 1974 – (Required in full or part – instructor's discretion)

Norman Borlaug on World Hunger edited by Anwar Dil, Bookservice International and Ferozons (Put) LTD./ 1997 – (Highly recommend due to the direct access it provides to Dr. Borlaug's exact words through his lectures and speeches.)

Selected sections from Facing Starvation (to be used at the instructor's discretion)

Separate Sections for use from Facing Starvation

Chp 1 – Childhood, attitude formation

Chp 3 – University growth

Chp 4 – Intro to Mexico

Chp 9 – Yaqui Valley

Chp 11 – India

Chp 15 – Conflict with Biotech and Environmentalists

Chp 16 – Nobel Prize

The above chapters can be read and studied individually for the indicated perspective on Dr. Borlaug's life up to the early 1970s. It is the instructor's choice as to the selection.

VIDEOS: [Freedom from Famine](#)* (Iowa Public Television)
[Out of Iowa](#) (Iowa Public Television)
[Setting the Grassroots on Fire](#) (The Carter Center)

*Added 2016

Suggested Study Module

Organization (time period flexible)

Day 1 – Lecture on an introduction to Dr. Borlaug, his work and his life. This day includes a talk by the instructor, an examination of the study module and its components and the instructor's assignments

Day 2 – (optional)

Guest lecturer or panel to discuss Dr. Borlaug and genetically modified or engineered grain. (Option: Contact the NBHF for speaker)

Day 3 – Videos: [Freedom from Famine](#), [Out of Iowa](#) or [Setting the Grass Roots on Fire](#) followed by discussion of content.

Possible discussion topics are included on accompanying sheets and may be used or modified as instructor chooses.

FREEDOM FROM FAINE or OUT OF IOWA
Video Guide

1. How is Dr. Borlaug presented in the video? - What does he say, what does he do, what do others say about him?

Give Examples of the above

2. What are two or three lessons you learn about Dr. Borlaug the person and his work in the video?
3. What is your perception of Dr. Borlaug from the video?
4. What are your personal ideas and feelings on GE grains with which he works?

SETTING THE GRASS ROOT ON FIRE
Video Guide

1. How is Dr. Borlaug presented in the video – What does he say, What does he do, What do other say about him?

Give examples of the above

2. The video has segments in that were recorded in the following locales – Ghana, England, Mexico, Oslo, Ethiopia, Benin, Tanzania – What is presented about the places regards to Dr. Borlaug the person and his work?
3. What is SG 2000?
4. What did you learn that was new about Dr. Borlaug?
5. What are the perceptions you get of him after this video?

Day 5 – Optional -Visit to Dr. Borlaug’s Heritage Farm

Day 6 – Discussion of research papers
Possible research projects are listed on accompanying sheets.

Day 7 – Final day of research and conclusion of project work.

RESEARCH PROJECTS

(Formats may vary)

1. Set up an email, Facebook, Twitter or other digital project with students from around the world in countries where Dr. Borlaug has worked. Response about attitudes and awareness of him could be compiled and analyzed.
2. Research various leading scientists work on GE grains and compare them to Dr. Borlaug's results.
3. Set up a panel discussion on the debate over GE grains.
4. Research the results of GE grains in a country Dr. Borlaug has worked and present a demonstration of the outcomes.
5. Do a research paper on the life and work of one of the World Food Prize winners with information about their indebtedness to Dr. Borlaug.
6. Attend the World Food Prize Ceremony in Des Moines and do a follow up on issues discussed and a perspective on them.
7. Do a video or power point presentation for a specific grade level on Dr. Borlaug's life and accomplishments.
8. Do a research paper or website on any of the countries where Dr. Borlaug worked over the last 50 years. Discuss the country and its people and agriculture and the change that has occurred due to Dr. Borlaug. (Could be combined with #4)
9. Attend the annual Borlaug lecture at Iowa State University and report on and comment on the speaker, his/her perspective and the relation to Dr. Borlaug's work. Get involved with the Iowa Youth Institute. [Learn More](#)

10. Do a survey project on Iowan's awareness at various levels about Dr. Borlaug and his work and their views on his philosophy.
11. Write works of fiction or poetry inspired by the philosophy of Dr. Borlaug and his "apostles of wheat."

SUPPLEMENTARY QUESTIONS

1. What did you learn from the seminar/unit on Dr. Norman Borlaug (list two or three items?)
2. What opinions did you hear about him and his work before attending?
3. What are your opinions about him and his work – are you for the kind of genetically modified grains he advocates?
4. Do you feel this is the direction in which scientists, educators, and humanitarians should proceed or do you advocate organic farming and grain production?
5. How will speak about Dr. Borlaug in the future?
6. What was good about the presentation?
7. What would you change about the presentation?

Please give a brief paragraph evaluation of the Dr. Norman Borlaug unit/seminar – material presented, audience, time length, value to your institution and community, success of program's aim of acquainting people with Dr. Borlaug's life and work, anything that should be added or deleted.