



**June 2019**

## **Rust outbreaks threaten European wheat production**



Yellow rust spores released when harvesting triticales for forage in the Huesca province of Spain.  
Photo: Dolors Villegas, IRTA, Spain

Wheat rusts are causing serious damage across Europe. Reports of yellow rust, leaf rust, and stem rust are emerging from several collaborators in the H2020 EU RustWatch project, including the UK, Denmark, Belgium, Italy, and Spain.

**Epidemic-levels of rust swept Europe in 2016.** The spread was caused by unique yellow rust genotypes. Early testing of this season's yellow rust samples from Italy, Belgium, France and Denmark suggest that new races may be involved in the severe attacks of yellow rust.

**[Read the full alert on the RustWatch site.](#)**

## **Gender-sensitive farmer training program transforms Kenya's rural households**



Esther Chelule with her husband, Vincent, in front of their home in Njoro, Kenya. Photo: Chris Knight

Wheat farming is critical for families like Esther Chelule's in East Africa. The region has been ravaged by stem rust, a devastating fungal pathogen that can destroy a farmer's entire harvest. Yet trainings organized by the Kenya Agricultural and Livestock Research Organization (KALRO) to share agricultural knowledge about stem rust were dominated by male farmers, leaving women often ill-informed about new practices and opportunities.

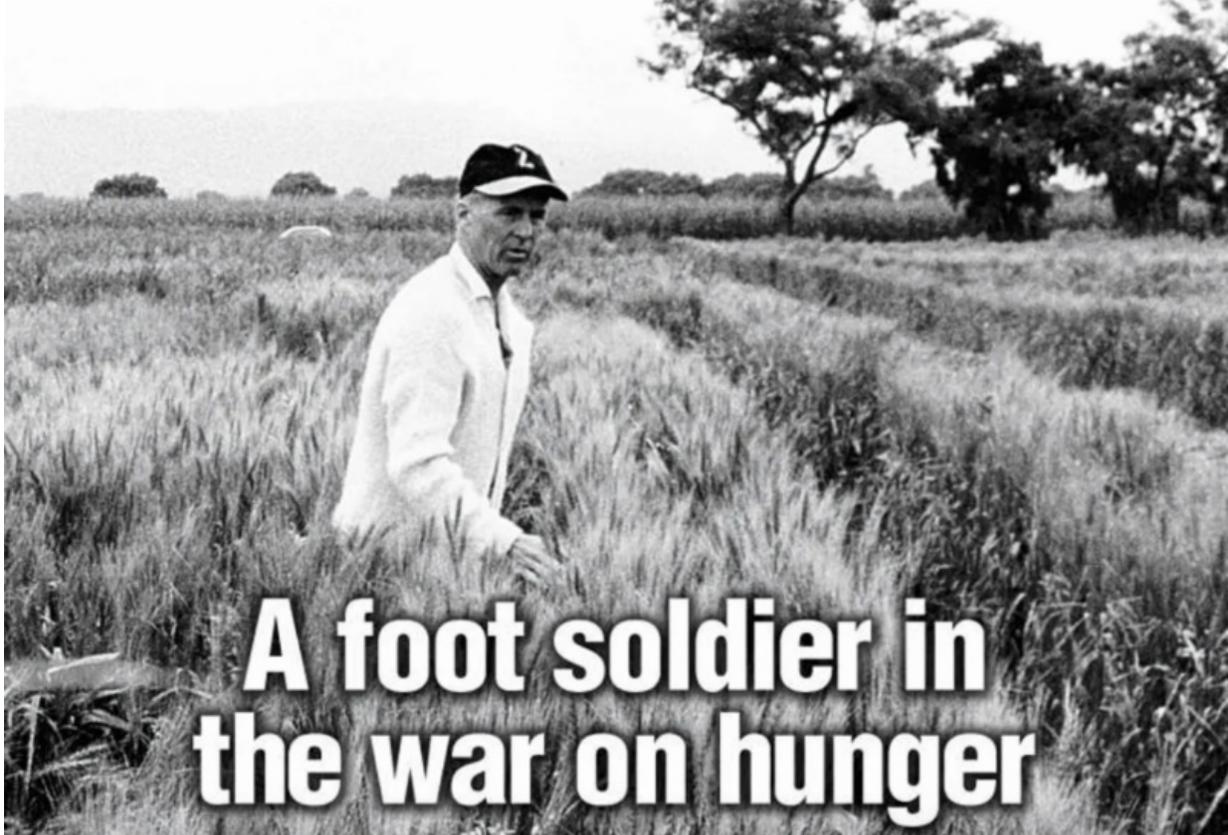
To address those imbalances and increase women's participation in agriculture, gender courses led by Cornell's Gender-responsive Researchers Equipped for Agricultural Transformation (GREAT) program and attended by Cornell's Delivering Genetic Gain in Wheat (DGGW) teams are changing attitudes for a growing number of smallholder farmers in East Africa and empowering women to take on a greater role in household farming activities.

"When we grow this crop of wheat, because [of] the training I know how it is planted and weighed, how much goes into an acre," Chelule said. "Now, even when [my husband] is not there, I can supervise the work very well."

[Read more about the farmer trainings in Kenya on the GREAT website.](#)

Watch Video: "[Making a Difference in Kenyan Rural Households through Gender-Responsive Trainings](#)"

**The man who helped feed the world**



An archival photo of Norman Borlaug in the field. Photo: Des Moines Register.

The Population Bomb, published by Stanford biologist Paul Ehrlich in 1968, predicted that populations would grow more quickly than food supplies and cause mass starvation. The innovations Norman Borlaug introduced to plant breeding that led to the "Green Revolution," helping feed millions of people and ensuring Ehrlich's predictions never came to pass. However, the challenge of feeding the world continues to today -- and scientists are keeping Borlaug's fight against hunger alive.

[Read more about Borlaug's agricultural innovations on BBC's "50 Things That Made the Modern Economy" feature.](#)

Listen: ["Feeding a hungry world - how Norman Borlaug used genetics to tackle predicted famines"](#)

Photo Gallery: [Iowa native, Nobel Peace Prize winner Norman Borlaug, from the Des Moines Register](#)

## **Speed-breeding crops to feed the future**

"We face a grand challenge in terms of feeding the world," said Lee Hickey, a plant geneticist at the University of Queensland in Australia. "If you look at the stats, we're going to have about 10 billion on the planet by 2050 and we're going to need 60 to 80 percent more food to feed everybody. It's an even greater challenge in the face of climate change and diseases that affect our crops that are also rapidly evolving."

To speed up the traditionally slow process of plant breeding, researchers -- including Hickey's lab, which collaborates with partners all over the world -- are

developing techniques to breed more varieties of plants in a shorter period of time. The approach Hickey's team has adopted is "speed breeding," which uses LED lights to induce faster plant growth. The speed breeding technique was previously [detailed in a Nature plants paper](#) and a [Nature protocols paper](#) which were both co-first authored by Women in Triticum winners Amy Watson and Sreya Ghosh.

Speed breeding could be a powerful tool in combination with other plant breeding techniques.

[Read "Grow Faster, Grow Stronger: Speed-Breeding Crops to Feed the Future" in the New York Times](#)

[Read "Breeding crops to feed 10 billion" in Nature Biotechnology](#)



Fast-growing plants in the crop-speed breeding facility at The University of Queensland. The plants featured are barley plants. Photo: The University of Queensland

## BGRI at the first International Wheat Congress



The BGRI looks forward to attending the upcoming 2019 International Wheat Congress in Saskatchewan, Canada, where BGRI Vice-Chairman Ronnie Coffman will be delivering a talk on "Germplasm Exchange Under the Convention for Biological Diversity: Implications for Wheat Research" on Tuesday, July 23. Several DGGW partners will also be speaking and presenting posters at the conference.

## Events and Opportunities

### 1st International Wheat Congress

21-26 July 2019 (*Saskatchewan, Canada*)

<http://2019iwc.ca>

### Wheat Diversity and Human Health Conference

22-24 Oct 2019 (*Istanbul, Turkey*)

<https://www.wheat-health.org/en/>

*Abstract Submission Deadline: 15 June 2019*

## 2020 Borlaug Global Rust Initiative Technical Workshop

1-4 June 2020 (Norwich, UK)

Registration & Program TBA

### Contribute to the BGRI Newsletter and Social Media

If you have any news of interest to the BGRI community, please send us a message and we will try to include it in subsequent BGRI newsletters! We also publish and share stories on our [Twitter](#) and [Facebook](#) accounts. Use [@globalrust](#) to tag any contributions.

Events, career and educational opportunities, photos, and new publications are especially welcome.

Contact BGRI newsletter editor [Matt Hayes](#) or [the BGRI](#).

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