



BGR Borlaug Global Rust Initiative

January 2018



Maricelis Acevedo, associate director of the Delivering Genetic Gain in Wheat project, speaks with participants in the wheat blast workshop held in Bangladesh. Photo by Chris Knight.

## **Celebrating 10 Years of Wheat Research**

This year marks a decade since the Borlaug Global Rust Initiative was launched with the goal of creating a global wheat community working together to reduce the world's vulnerability to wheat rust and make genetic improvements to wheat. In the years since, the founding partners ICAR, ICARDA, CIMMYT, UN-FAO and Cornell University have been joined by scientists and institutions all over the globe, united by a common goal: to ensure a stable, food-secure future for all.

As the threats that face the world and our food supply change and adapt to the environment, so must wheat researchers change and adapt to meet these new challenges head on. As we look to the future of wheat research, we will continue to strive to continue collaborating across the world and overcome adversity together.

## **A Year of Wheat: Highlights of 2017**

2017 was a flagship year for the Borlaug Global Rust Initiative and wheat research. We announced our partnership with the Department for International Development (DFID) backed by UK Aid, participated in the first wheat blast workshop in Bangladesh, launched a seed systems initiative in Nepal, and made materials for a rust pathology course available online. The BGR community raised alerts about disease outbreaks, made advances in phenotyping and developing climate resilient wheat, and showed support for international collaboration and the March for Science.

Here are some of the top headlines from the last year of wheat.



### Cornell receives UK support to aid scientists fighting threats to wheat

UK Aid investment funds international wheat project for four years. ([Read More](#))



### #WheatIsScience

In support of the March for Science, wheat researchers around the world shared photos in the field and at word. ([Read More](#))



### Revolutionizing wheat phenotyping

Wheat breeders may soon be assisted by a system to predict a plant's potential in the field. ([Read More](#))



### The Art & Science of Rust Pathology & Applied Plant Breeding

Online course from top wheat breeders and pathologists. ([Read More](#))



### Sounding the Alarm: Wheat Rusts Incoming

Wheat scientists warn that new wheat rust races could threaten vital wheat growing areas. ([Read More](#))



### DGGW inaugurates new seed systems initiative

New seed processing machinery is set to improve productivity for Nepalese farmers. ([Read More](#))

## New International Borlaug Centre opens in India



Jeanie Borlaug, Ronnie Coffman and many Indian notables were present to unveil the statue of Norman Borlaug and launch the Dr. Norman Borlaug International Center of Agriculture Development at the University of Agricultural Sciences-Dharwad, in India, on January 5, 2018. Photo by Linda McCandless

On January 5, 2018, Jeanie Borlaug visited the University of Agricultural Sciences (UAS)-Dharwad to launch and dedicate the new Dr. Norman Borlaug International Centre for Agriculture Development. Named after her father, known as the "father of the Green Revolution," the centre aims to address the challenges of food security by educating youth and forging collaborations with institutions working on agriculture, nutrition and health in Karnataka and around the world. It will play an important role in connecting UAS-Dharwad with the global community in providing training and research opportunities for international students, faculty and visiting scientists.

[Read about the new Borlaug Centre and UAS-Dharwad's long history of international collaboration at the BGRI blog.](#)

## Breakthrough in the battle against Ug99



Wheat stem rust at important flag leaf stage.  
Photo by Robert Park

*Contributed by Melania Figueroa and Peter Dodds*

A significant breakthrough in combatting wheat stem rust disease caused by the fungus *Puccinia graminis* f. sp. *tritici* was achieved through the work of an international collaborative team led by Dr. Peter Dodds (CSIRO Food and Agriculture and University of Minnesota Adjunct Professor) and Professor Robert Park (University of Sydney and Director of the Australian Cereal Rust Control Program), and involving teams in the UK and the US.

Numerous stem rust resistance (Sr) genes are known, and used to allow more rapid and accurate breeding. The molecules recognized by these Sr genes have been unknown, hampering our understanding of how new strains of *P. graminis* f. sp. *tritici* evolve to escape plant recognition.

[Read more about the protein, AvrSr50, which is recognized by the wheat Sr50 resistance gene, at the BGRI blog.](#)

### REFERENCES:

- Loss of *AvrSr50* by somatic exchange in stem rust leads to virulence for *Sr50* resistance in wheat [\[LINK\]](#)
- Variation in the *AvrSr35* gene determines *Sr35* resistance against wheat stem rust race Ug99 [\[LINK\]](#)
- The wheat *Sr50* gene reveals rich diversity at a cereal disease resistance locus [\[LINK\]](#)

**Surveillance training keeps rust at bay in India and South Asia**



Participants in surveillance training at Ludhiana line up for a group photo.  
Photo Credit: Sathguru Management Consultants

To gear up for the upcoming wheat season in the SAARC region, pre-season surveillance training using the tool box was conducted by Sathguru Management Consultants in India at the Indian Agriculture Research Institution, Indore, and at the Plant Breeding and Genetic department, Punjab Agricultural University, Ludhiana, on December 7 and 12, 2017, respectively. Wheat rust is a severe disease in South Asia that affects productivity, causing 10 to 15 percent in yield losses. By tracking the movement, incidence and severity of rust, surveillance has become an important tool in mitigating its effects.

[Read more about the surveillance training workshop at the BGRI blog.](#)

## Wheat Scientist Profiles

Beginning February 2018, the newsletter will feature profiles of wheat scientists who are part of the BGRI community. These profiles will come with a wide range of experience and backgrounds, and highlight how their work shapes and reflects the future of wheat research.

## Upcoming Events

### 4<sup>a</sup> Conferencia Latinoamericana de Cereales (LACC4) - 4th ICC Latin American Cereals Conference

11-17 March 2018 (*Mexico City, Mexico*)

<http://www.cimmyt.org/event/4a-conferencia-latinoamericana-de-cereales-lacc4-4th-icc-latin-american-cereals-conference/>

### CIMMYT Visitor's Week (*Ciudad Obregon, Mexico*)

19-23 March 2018

<https://www.icc.or.at/node/2870>

### BGRI Technical Workshop

14-17 April 2018 (*Marrakesh, Morocco*)

REGISTRATION IS OPEN: <http://www.globalrust.org/tech-workshop/bgri-2018>

### Wheats & Women International Conference

14-15 June 2018 (*Rome, Italy*)

<https://www.wheatwomen-carlotta2018.com/>

### International Congress of Plant Pathology (ICPP) 2018: Plant Health in A Global Economy

## 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 [Samantha Hautea](#) or [the BGRI](#).

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