Science Societies

# Resistance to wheat rusts identified in chromosome introgressions

May 20, 2020

*Wheat spikes affected by stem rust (left) compared with relatively healthy spikes (right). Photo by Petr Kosina/CIMMYT.*

Cereal rusts are a constant problem in wheat production. New resistant wheat varieties are released each year, but within a few years, rust pathogens overcome the resistance. So, plant breeders are in a constant search for new resistance. Resistance sources are limited in bread wheat, but wild relatives hold the potential as a new genetic pool from which new genes can be found. Unfortunately, many are difficult to cross to wheat because of differences in chromosome number or distance in evolutionary relationship.

*Amblyopyrum muticum* is a wild relative of wheat, and previous work has integrated most of the genome into 28 bread wheat lines. In a new article in *Crop Science*, researchers test these lines for resistance to leaf rust, stem rust, and stripe rust. At the seedling stage, four lines were resistant to leaf rust, six to stem rust, and 15 to stripe rust. As adults, 16 lines were resistant to leaf rust.

Since the genome fragments from *Amblyopyrum muticum* are now in a wheat background, it makes the genetic resource more accessible by breeders. Breeders can now move the genes into lines adapted for their specific region. Field testing in adapted lines could also find other beneficial traits.

**Dig Deeper**

Fellers, J.P., Matthews, A., Fritz, A.K., Rouse, M.N., Grewal, S., Hubbart-Edwards, S., King, I.P., & King, J. (2020). Resistance to wheat rusts identified in wheat/ *Amblyopyrum muticum* chromosome introgressions. *Crop Science*, *60*. **https://doi.org/10.1002/csc2.20120**

More science articles

Back to issue

Back to home