

Scientists have discovered wheat gene that provides resistance to fungal diseases

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Scientists have sequenced and described a gene that can help wheat to resist four serious fungal diseases, potentially saving billions of dollars in yearly grain losses and reducing the need for farmers to use costly fungicides, once the gene is bred into high-yielding varieties.

A global research team isolated the wheat gene *Lr67*, revealing how it hampers fungal pathogen growth through a novel mechanism.

The study, which was published in *Nature Genetics* on 9 November,* involved scientists from the International Maize and Wheat Improvement Center (CIMMYT), the Chinese Academy of Agricultural Sciences, Mexico's National Institute of Forestry, Agriculture, and Livestock Research (INIFAP), the Norwegian University of Life Sciences and scientists from Australia, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the University of Newcastle, and the University of Sydney.

"With climate change and more intensive cropping, we've observed the emergence and rapid spread of new, highly-virulent strains of various fungi that are able to overcome the genetic resistance in today's widely-sown wheat varieties," said Ravi Singh, CIMMYT distinguished scientist, wheat breeder, and co-author of the new study. "The worst are the three wheat rust diseases, which cause grain losses worldwide estimated at \$2.9 billion every year." . . .

"In developing country wheat-growing regions, these epidemics bring hunger and economic hardship to resource-poor rural communities," said Julio Huerta-Espino, principal researcher at INIFAP and a co-author of the *Nature Genetics* study. "They also require large-scale use of costly fungicides to avoid crop losses, and emergency initiatives to multiply and distribute seed of new, resistant varieties."

Read full, original post: Clone of magic wheat disease-resistance gene sheds light on new defense mechanism