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Killer disease of wheat is lurking close, but India needn't worry yet

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Wheat blast from South America has showed up in Bangladesh, but Indian firewalls are more robust

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BANGLADESH IS grappling with a deadly fungal disease that has devastated about 15,000 hectares of wheat. This is the first time that wheat blast, which originated in South America, has been reported in Asia.

The disease is caused by the *Magnaporthe oryzae* fungus that was discovered in Brazil in 1985, and has since been known to periodically devastate fields in South America, according to studies published in the journal *Nature Science*.

After the infection was confirmed in the first week of March, farmers in Bangladesh began burning the affected crops. Dhaka-based *The Daily Star* reported that the fungus had impacted at least six districts. Temperature fluctuations and continuous rain in the previous month may have contributed to the spread of the fungus, the newspaper reported.

The fungus attacks the leaf of the crop and eats its chlorophyll, thereby affecting the plant's growth.

"This is a disease that originated in Brazil and very quickly spread across the whole of South America," said Prof Tofazzal Islam of the Department of Biotechnology at the Bangabandhu Sheikh Mujibur Rahman Agricultural University in Bangladesh. "Complete fields can be wiped out by this disease. We noticed the infestation in districts close to India, and so there is a chance that wind might spread the infection to India and seeds may find their way across the border into the Indian market," Prof Islam said.

Indian scientists, however, downplayed the threat.

"First of all, our wheat harvesting season is over," said Dr M S Saharan, Principal Investigator, Crop Protection, at the Indian Institute of Wheat and Barley Research (IIWB), Karnal. "Next, our major wheat producing states are Punjab, Haryana and Uttar Pradesh. So, the chances of the disease spreading to our crops are very slim."

Dr Jeet Singh Sandhu, Deputy Director General, Crop Sciences, at the Indian Council



A Bangladeshi wheat farmer shows his crop destroyed by the wheat blast disease.

Picture courtesy Prof Tofazzal Islam, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh

of Agricultural Research (ICAR), said, "Bangladesh was affected after it failed to quarantine the seeds that it received from Brazil."

He added, "Our wheat breeding programmes are robust and we do not need to import such seeds. Of course, this does not mean that we are not vigilant. We will soon be sending some of our lines of wheat to some of the affected areas to test them for resistance. Once we have studied that, we will look to breed wheat that is resistant to this wheat blast too."

A decade ago, the UG99 wheat stem rust had found its way across continents from North America to Iran. "In that case, we took our wheat samples and tested them in affected areas in certain African countries and bred those varieties that showed resistance," said Dr R K Gupta, Director (acting), IIWB. "A similar exercise is likely this time as well."

Asked whether genetically modified (GM) crops could be a possible solution, Dr Sandhu said, "That is unnecessary at this stage. We have a huge germplasm at our disposal and it is very robust. It is only after we have tried conventional methods of breeding that we will think of GM crops."

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