

Can GMOs mitigate threats to global food security?

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Crops often already have resistance mechanisms that could stop a new pathogen in its tracks. What they lack is the information that they are under attack and should turn their defences on.

Plants use “R proteins” to detect invading pathogens and trigger their defence responses in a way analogous to our antibodies. An R protein from another variety of the same species or sometimes even from another plant species resistant to the pathogen can be copied into a vulnerable crop by genetic engineering, where it will identify the pathogen and [activate defences](#) against it. In the long run, it may be possible to defeat evolving pathogens by equipping crops with a barrage of different R proteins so that evading one way of detecting them is not enough.

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What if we could make [perennial versions](#) of these key crops [wheat, rice and maize]? It would be a much more environmentally-friendly way to grow food. Some think it could be achieved [within two decades](#), but bringing all of the characteristics we want together in time may well require [genetic modification](#).

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [Four threats to global food security and what we can do about them](#)