

We need to double food production by 2050. Here's how genetically tweaking cowpea, soybean, and potato could help meet that target

AZoCleantech speaks to Amanda Cavanagh from the University of Essex about the future of agriculture in a changing climate and how bypassing a photosynthetic glitch could help us to future-proof our food crops.

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[Cavanagh:] In this work, we asked if our transgenic plants with altered photorespiration ([previously published in 2019](#)) would confer thermal tolerance in the field. We grew the plants in controlled experiments in agricultural plots modified to heat the canopy temperature 5 °C above ambient summer growing temperatures.

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We need to double-crop productivity by 2050 to feed a growing population, and we will have to do that in the face of climate change. Our goal is to build better plants that can take the heat today and in the future to help equip farmers with the technology they need to feed the world.

Photorespiration is a problem for most of our main food crops, including wheat, rice, and soybean. We know that Rubisco has even more trouble picking out carbon dioxide from oxygen as it gets hotter, causing more photorespiration. Therefore, strategies like this can lead to plants that are better able to grow under adverse conditions.

[This is an excerpt. Read the original post here.](#)