As temperatures rise, gene editing helps climate proof the global food supply

“The largest single global change that threatens food security is high temperature,” said Donald Ort, a professor of plant biology and crop sciences at the University of Illinois who is working on a project called RIPE — Realizing Increased Photosynthetic Efficiency — to enhance photosynthesis in food crops, which would also help beat the heat.

The problem is being seen throughout the world. In 2010 and 2012, for example, Russian wheat growers saw their yields decline dramatically because of a combination of hot weather and drought.

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There is a concerted global effort to help agriculture adapt to the new climate reality as warming continues apace. The most urgent adaptation initiatives, experts say, involve the world’s main food crops — especially wheat, rice, corn, and soybeans, which together provide two-thirds of human caloric intake. In a study released last year, the Intergovernmental Panel on Climate Change (IPCC) warned that without fundamental changes in agriculture, the world risks increasing food insecurity.

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…. [A] team of U.S. researchers are editing the genome of rice in tests to add disease resistance or edit out genes that make the plant susceptible. They look for a plant that might have poor yield but has good disease resistance and then remove the resistant genes and place them in a high-yielding commercial variety “Genome editing allows us to do that with speed and accuracy,” Adam Bogdanove, a professor of plant pathology at Cornell University, said.

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