

## Biotech key to increasing yields to meet growing global food demands

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.**

The world population is expected to grow to [9.6 billion by 2050](#), and [according](#) to the Food and Agriculture Organization of the United Nations (FAO), if we want to avoid mass malnutrition, we need to increase food production by 70 percent by 2050. Most of the land we can work for food is [already being cultivated](#). That means we're going to have to make large-scale changes to how we farm.

The debate around GMO safety is overshadowed by an even more fundamental question: Will genetic modification help feed 9 billion people? Joel Bourne, agronomist and journalist, says that though herbicide-resistant and pesticide-resistant GMOs have made farmers' lives easier, "We haven't seen significant increases in corn, rice or wheat in the major breadbaskets of the world since around the year 2000, and that's of great concern."

One potential exception is C4 rice, being developed by the International Rice Research Institute in the Philippines. Normal rice has what is known as a C3 photosynthetic pathway, which turns sunlight into energy in a far less efficient way than the C4 pathway. The idea, Bourne explains, is to develop a modified form of rice that uses the C4 pathway; compared with an otherwise-identical paddy of unmodified rice, a paddy of C4 rice would yield 50 percent more crop.

The rice institute has recently started experimenting on the process using CRISPR, a newly developed gene-editing tool —many hope the technology will speed the process of designing and implementing a C4 pathway for rice.

**Read full, original post:** [To Feed Humankind, We Need the Farms of the Future Today](#)