

Rice plants engineered to take up more CO₂ could boost crop yields as much as 27%

A new bioengineering approach for boosting photosynthesis in rice plants could increase grain yield by up to 27%, according to a study [published] January 10 in the [journal *Molecular Plant*](#). The approach, called GOC bypass, enriches plant cells with CO₂ that would otherwise be lost through a metabolic process called photorespiration. The genetically engineered plants were greener and larger and showed increased photosynthetic efficiency and productivity under field conditions, with particular advantages in bright light.

“Food shortage related to world population growth will be a serious problem our planet will have to face,” says senior study author Xin-Xiang Peng of South China Agricultural University in Guangzhou, China. “Our study could have a major impact on this problem by significantly increasing rice yield, especially for areas with bright light.”

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In the new study, the researchers developed a strategy to essentially divert CO₂ from photorespiration to photosynthesis....

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Compared to plants that were not genetically engineered, the GOC plants were consistently greener and larger, with an above-ground dry weight that was 14%-35% higher. Moreover, starch grains grew in size by 100% and increased in number per cell by 37%. In the spring seeding season, grain yield improved by 7% to 27%.

Read full, original article: [Rice plants engineered to be better at photosynthesis make more rice](#)