

Boosting photosynthesis: GMO soy bean trial demonstrates 25% jump in yield

Genetically modified soya beans designed to absorb light more efficiently produced a 25% greater yield in an advance that could significantly boost global food supplies.

The field trials are the first successful demonstration that genetic engineering can be used to directly target the photosynthesis process in food crops. The improvements seen are almost unprecedented for this kind of intervention and would take decades to achieve through selective breeding.

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The latest work targets genes involved in a process that plants use to shield themselves from bright sunlight, which can bleach leaves if plants absorb more energy than they can use for growth. To avoid this, plants have a protective mechanism called non-photochemical quenching (NPQ) that gets rid of excess energy through heat.

In bright sunlight, quenching kicks in almost instantaneously, like a human eye contracting. But it takes up to half an hour for the process to switch off again meaning that if a cloud passes overhead, plants are needlessly diverting energy they could be using for growth.

The scientists modified three genes that allowed the soya bean plant to become more responsive to lower light conditions. The modified soya beans had an average improved yield of 25% across five large trials, with one trial showing a boost of 33%.

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