

How gene editing can tailor crops to consumer preferences

Is there anything better than a perfectly sweet summer strawberry? Alas, many commercial berries look better than they taste.

But molecular biologist Caixia Gao and her colleagues at the Institute of Genetics and Developmental Biology in Beijing have devised a way to tune the sweetness of strawberries using a few simple genetic tweaks.

“We could increase the total sugar content from 20 to 41 milligrams per gram,” she says. “And there are so many different levels, you could choose what you like.”

Biomedical researchers have pounced on these technologies as tools for studying, and potentially repairing, mutations associated with diverse genetic disorders. Sweeter strawberries might seem like small potatoes in comparison, but the same capabilities are being harnessed to generate crops with greater disease resistance, higher nutritional content or more fruit per plant.

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Crucially, these editing systems could one day offer an appealing alternative to adding in genes from other species... which remain the subject of public scepticism and close regulatory scrutiny.

“GMOs have genes from other sources, but for gene-edited plants you can have these plants free from any foreign genes — just some small changes in the plant’s own genes,” says Jian-Kang Zhu, director of the Shanghai Center for Plant Stress Biology in China.

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