

Starch-controlling gene fuels protein

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Credit: ISU photo by Bob Elbert

Researchers from Iowa State University (ISU) have introduced a newly discovered gene, found only in *Arabidopsis thaliana* plants, into soybean plants and increased the amount of protein in the soybean seeds by 30 to 60 percent.

The research was performed by Eve Wurtele, professor of genetics, development and [cell biology](#) at ISU, and Ling Li, an adjunct assistant professor and an associate scientist working in her lab.

When the researchers neutralized the gene, known as QQS, in *Arabidopsis*, they discovered the gene was involved in regulating starch accumulation, called deposition. "Based on the changes in activities of other genes that occurred when we altered QQS, we conjectured that it wasn't directly involved in starch synthesis, but rather it may be involved in altering [the plant's] composition in general," said Wurtele. "We

decided to test this concept by transferring the gene to an agronomically important [plant species](#), soybean, which has a seed and is important as a source of vegetable protein and oil."

"We found that the QQS transgene increased protein production in the soybean seed," she added. "That was the best possible scenario."

The discovery has potential to help people in areas who survive on protein-deficient diets and holds promise for helping meet nutritional needs of a hungry world.

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