

‘Major breakthrough’: Genetic modification of single gene could reduce crops’ water use by 25 percent

Researchers on Tuesday [March 6] unveiled a genetic modification that enables plants to use a quarter less water with scant reduction in yield.

By altering a single gene, scientists coaxed tobacco plants — a model crop often used in experiments — to grow to near normal size with only 75 percent of the water they usually require.

If major food crops respond the same way, they said, the first-of-its-kind genetic “hack” could help feed the growing population of an increasingly water-starved world.

“This is a major breakthrough,” said senior author Stephen Long, a professor at the Institute of plant biology at the University of Illinois.

“When water is limited, these modified plants will grow faster and yield more.”

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Long and his team tweaked the gene that codes a protein — known as PsbS — crucial to photosynthesis, the process by which plants convert light into nutrients.

PsbS plays a key role in relaying information about the quantity of daylight, which triggers the opening and closing of microscopic leaf pores called stomata.

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In the genetically engineered plants, increased levels of PsbS caused the tiny leaf pores to close earlier than they normally would, allowing the plant to retain more precious liquid.

Editor’s note: Read the [full study](#)

Read full, original post: [Genetic tweak makes plants use 25% less water](#)