

Reconstructing the ‘perfect’ watermelon: Returning ‘lost genes’ from wild relatives to modern fruit

Could farmers soon be growing and harvesting the *perfect* [watermelon](#)? It is no secret — delivering juicy, delicious “summer smiles” is no easy feat, and [producing perfect watermelons from season to season is exceptionally challenging](#). According to [a recent study](#) published in the *Plant Biotechnology Journal*, watermelon growers may soon get a huge assist from science.

Researchers at the [Boyce Thompson Institute recently constructed what they call a “super-pangenome” watermelon](#)—combining the genome of the domesticated fruit and returning “lost” genes from its wild relatives. The researchers say the combination improves the fruit’s taste as well as its resilience during the growing process.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

[SIGN UP](#)

Genes from wild watermelon varieties that researchers were able to isolate within the super-pangenome control things like sweetness, flesh color, and rind thickness that were lost over centuries of domestication. One particularly exciting discovery was their ability to isolate the “tandem duplication of the sugar transporter gene *CITST2* that enhances sugar accumulation and fruit sweetness in cultivated watermelon.”

To create this super-pangenome watermelon, scientists referenced genes from 547 watermelon types spanning four species—cultivated watermelon (*Citrullus lanatus*), and its wild relatives: *C. mucosospermus*, *C. amarus*, and *C. colocynthis*.

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