

## Viewpoint: Non-GMO Project promotes genetically-modified seedless watermelon



s summer grinds on, the Non-GMO Project is here to reassure consumers that seedless watermelon is not genetically modified. “Are those watermelons a GMO? Nope!” the [project tweeted](#) last week. “Let’s clear up a point of confusion: there are no commercially available GMO watermelons. Learn more about how seedless watermelons are made. Enjoy!”

So rest assured: you may chow down on watermelon at your remaining family barbecues without fear of exposure to “GMOs.” Nonetheless, the project’s tweet prompts two intriguing questions. Why do so many people think seedless watermelon is genetically modified? Second, should we actually treat this fruit as a GMO? The short answers are “because watermelon is genetically modified” and “who cares?” Allow me to elaborate on these glib responses.

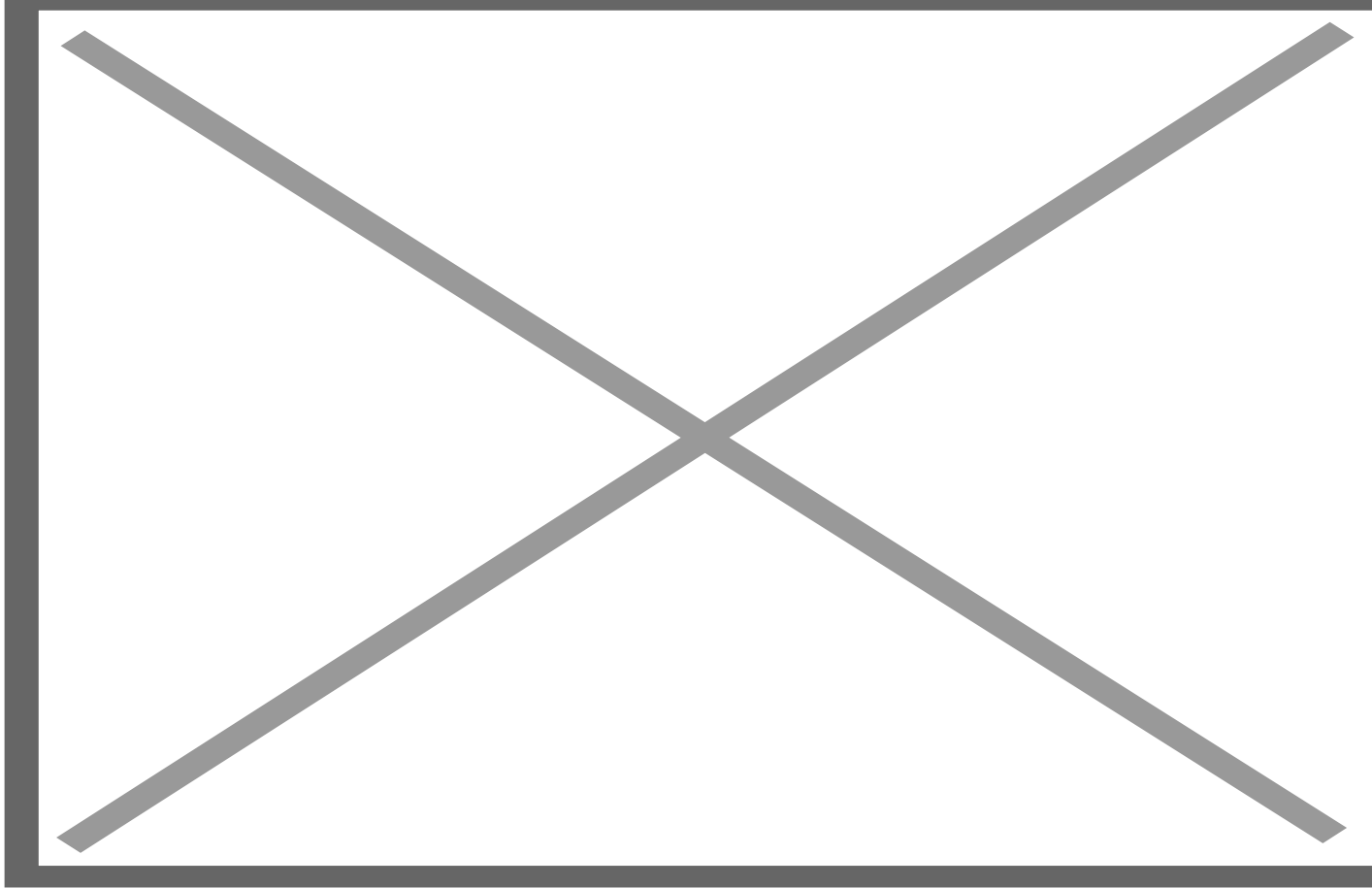
### Lab-created (non-GMO) fruit

Reproduction is [one of the properties](#) we use to separate living from non-living things. When people suspect that seedless watermelon is genetically modified, they’re probably channeling their high-school biology class. It would be odd to see an organism in nature that evolved *not* to reproduce. Indeed, that hasn’t happened in this case. Seedless watermelons exist because scientists treat the young plants they come from with a chemical called colchicine. As NC State [explains](#),

*This causes the eggs in the flowers to develop with two sets of chromosomes ( $2n$ ), instead of one. When the eggs are pollinated, they create triploid cells (because  $2n + 1n = 3n$ ). These cells are capable of maturing into fruit, but the seeds in that fruit are not genetically viable*

Voila—seedless watermelon. [1] This technique is broadly known as “mutagenesis” and it’s given us a [wide variety of foods](#) that we consume without hesitation. The Non-GMO Project linked to [an article](#) that correctly explained the breeding process, though the author didn’t mention the pivotal role colchicine plays in doubling the number of watermelon chromosomes.

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Credit: Venus Fomby via Pixy

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Parenthetically, several prominent organic activist group [oppose](#) mutagenesis breeding. The project has put itself at odds with some of its most powerful allies in the anti-GMO movement. This is striking because mutagenized crops [are indistinguishable](#) from plants modified with new breeding techniques such as CRISPR-Cas9. By endorsing seedless watermelon, the Non-GMO Project has implicitly endorsed crop gene-editing!

In any case, let's return to our first question: why do many consumers think seedless fruit is genetically modified? Because it obviously is. Using harsh chemicals to create mutant plants that yield enhanced seed cannot be described as anything but genetic modification.

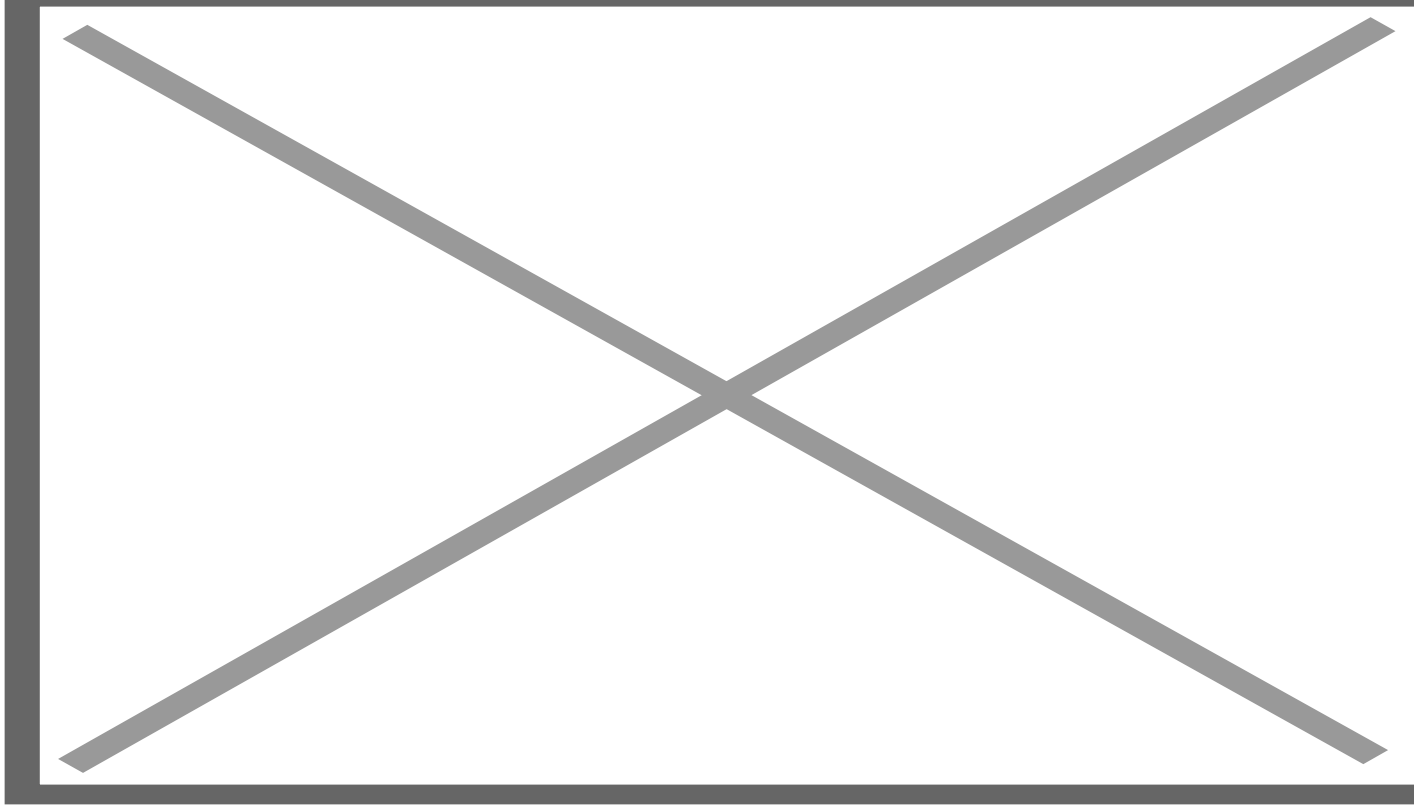


Giovanni Stanchi's 17th century painting reveals how breeding has drastically changed watermelons.  
Credit: Christie Images Limited

## Who really cares?

If you want to nitpick, seedless watermelon aren't transgenic; they don't contain DNA from some other organism. However, this just prompts another inquiry: why is it acceptable to duplicate entire chromosomes in watermelon, but unacceptable to move specific genes between organisms—say sunflower and wheat to breed [drought-tolerant](#) crops? The technical distinction between a transgenic and a chemically mutated plant matters to the Non-GMO Project, because their business model consists of [selling consumers](#) overpriced products with no added benefits.

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At least square watermelons offer novelty. Credit: Toru Yamanaka via AFP

None of this matters to anyone else, though. Almost everything we eat has been genetically modified because [every breeding method](#), whether ancient or modern, induces mutations in the genomes of the plants and animals we eat. So, yes, seedless watermelon is genetically modified. Does this observation point to any health or environmental risks we should care about? Nope.

**Cameron English is a writer, editor and co-host of the Science Facts and Fallacies Podcast. Before joining ACSH, he was managing editor at the Genetic Literacy Project, a nonprofit committed to aiding the public, media, and policymakers by promoting science literacy. You can visit Cameron's website [here](#)**

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