

Consumers like shelved tomato juice more than a refrigerated product

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Tempted by the tangy taste of tomato juice? Consumers may prefer a product sold from grocery store shelves over a minimally pasteurized refrigerated product, but only by a small margin, new University of

Florida research shows.

Researchers at the UF Institute of Food and Agricultural Sciences made four types of tomato [juice](#), combining six UF/IFAS tomato varieties.

In this study, scientists wanted to know how heat treatments impact flavor compounds in tomato juices. Generally, more [heat treatment](#) gets rid of the fresh and fruity characteristics typically found in a high-quality fresh tomato purchased from the produce section of the grocery store, said Paul Sarnoski, a UF/IFAS associate professor of food science and human nutrition and lead author of the new study.

In their attempts to see the degree to which [consumers](#) liked heat-treated tomato juice, researchers made two types of products. One was refrigerated and meant to be sold like fresh orange juice; the other was shelf-stable and would be sold unrefrigerated.

They then tested the tomato juices on about 600 people participating in consumer test panels at the UF Sensory Lab on the main campus in Gainesville. Scientists found that consumers preferred juice stored on shelves over refrigerated juice, by just a tad.

"The result goes to show that consumers really do seem to prefer a more cooked product, and sodium level is an important driver of consumer liking in tomato juices," Sarnoski said. "It also suggests that some consumers prefer 'cooked' aromas—such as nutty, toasted and smoky, rather than fresh and fruity—in their tomato juice."

Last year, Sarnoski led a study that showed that tomato juice made from Garden Gem—a UF/IFAS variety—tasted the best among several types of juices made from UF/IFAS cultivars. Sam Hutton, a tomato breeder at the UF/IFAS Gulf Coast Research and Education Center and a co-author on both studies, said the results from the Gainesville-based

research help guide his program. Consumer tests aid in selecting the right genes for the best-tasting tomatoes.

Meanwhile, Sarnoski said the results of the taste testers of heat-treated tomato juice help steer his lab's future research on [tomato juice](#).

"One of our ideas was to heat the juice less to give it more of a fresh tomato-like flavor, but the results of this study seem to show that the fresh tomato flavor doesn't increase consumers' preference for the juice," he said.

More information: Stephen J. Koltun et al, Effects of thermal processing on flavor and consumer perception using tomato juice produced from Florida grown fresh market cultivars, *Journal of Food Processing and Preservation* (2021). [DOI: 10.1111/jfpp.16164](https://doi.org/10.1111/jfpp.16164)

Provided by University of Florida

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