

Common kitchen practices detrimental to tomato aroma

November 30 2015



Researchers analyzed tomato volatiles using Gas Chromatography Mass Spectrometry, and compared the volatile profiles from different sources to determine the effects of cold storage and blanching on tomato aroma. Credit: Jinhe Bai.

Aroma, which is produced by a complex mixture of volatile compounds,

plays an important role in consumers' perceptions of fresh fruits and vegetables. For example, studies have shown that the familiar aroma of fresh tomatoes has diminished during the last 50 years - and less fresh tomato aroma is leading to more consumer complaints. The authors of a recent study say that not only do pre- and post-production practices such as time of harvest, use of plant growth regulators, and storage temperature/atmosphere affect tomato aroma, common kitchen practices such as refrigeration and blanching are also detrimental.

The report in *HortScience* is one of a series on tomato postharvest practices studies led by Jinhe Bai of the U.S. Horticultural Research Laboratory, Agriculture Research Service, U.S. Department of Agriculture. "The previous two publications addressed how hot water and methyl salicylate pre-treatments alleviate chilling induced volatile loss," Bai said. "In this study, we focused on the consumer-end temperature control to provide consumers with information on how their kitchen practices influence tomato flavor quality."

The scientists used ripe red tomatoes that they divided into three treatments: refrigerated at 5 °C for 4 days, kept at 20° C for 4 days and then dipped in 50 °C hot water for 5 minutes (blanched), and the untreated control, continuously kept at 20 °C for 4 days.

Analyses showed that blanching and refrigeration of [tomatoes](#), although common practices in home kitchens and food service operations, have a substantial impact on tomato aroma quality. "Storage of (tomato) fruit in a refrigerator or a short blanching for sanitation substantially influenced volatile profile and reduced key tomato aroma contributors," the authors said. They noted that low temperature storage resulted in a more severe impact on tomato aroma than hot water blanching.

More information: The complete study and abstract are available on the ASHS HortScience electronic journal web site:

[hortsci.ashspublications.org/c ... t/50/9/1358.abstract](https://hortsci.ashspublications.org/content/50/9/1358.abstract)

Provided by American Society for Horticultural Science

Citation: Common kitchen practices detrimental to tomato aroma (2015, November 30) retrieved 12 May 2024 from <https://phys.org/news/2015-11-common-kitchen-detrimental-tomato-aroma.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.