

# New light technology helps improve food safety

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Light-based technologies are emerging as tools to enhance food shelf life and guard against food contaminants but more research needs to be done, warn food scientists at a July 13 panel discussion at IFT15: Where Science Feeds Innovation hosted by the Institute of Food Technologists (IFT) in Chicago.

The use of ultraviolet light, pulsed light and LED lights are being studied by [food](#) technologists as a new way to improve food longevity and assist in eliminating bacteria from such food products as milk and juices. However, scientists warn they need to learn more about how these light rays penetrate foods at varying degrees to ensure [food safety](#).

"Light-based technologies can assist in breaking down bacterial cells in food products and are effective for surface sterilization," said Dr. Kathiravan Krishnamurthy, an assistant professor in the Department of Food Science and Nutrition at the Illinois Institute of Technology. "But the main issue with light-based technology is the penetration depth. We need to make sure every part of the [food product](#) sees the light."

The Centers for Disease Control and Prevention estimates each year roughly one in six Americans—or 48 million people—gets sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. According to 2011 estimates, the most common foodborne illnesses are caused by norovirus and by the bacteria Salmonella, Clostridium perfringens, and Campylobacter. Light technology provides a more cost-efficient and effective new way to process foods to effectively inactivate these

dangerous microorganisms while maintaining product quality.

"Light-based technologies are very powerful for selected applications but more research needs to be done," Krishnamurthy said, adding they've mainly been used in non-food applications. "These technologies are still in their infancy."

Tatiana Koutchma, a research scientist with Agriculture and Agri-Food of Canada, has been exploring a new application by experimenting with UV purification to extend the shelf life of cold-pressed juices as well as iced teas, soft drinks, syrups, milk, cheese and calf milk.

"It's an alternative to pasteurization and ESL [extended [shelf life](#)] method for juices, milk products, liquid sugars, liquid ingredients, raw, and finished food products," Koutchma said. "More research is needed for milk, fresh juices and wines."

**More information:** [am-fe.ift.org/cms/](http://am-fe.ift.org/cms/)

Provided by Institute of Food Technologists

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