

# **New UGA invention effectively kills foodborne pathogens in minutes**

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University of Georgia researchers have developed an effective technology for reducing contamination of dangerous bacteria on food. The new antimicrobial wash rapidly kills Salmonella and E. coli O157:H7 on foods ranging from fragile lettuce to tomatoes, fruits, poultry products and meats. It is made from inexpensive and readily available ingredients that are recognized as safe by the U.S. Food and Drug Administration.

The new technology, which has commercial application for the produce, poultry, meat and egg processing industries, is available for licensing from the University of Georgia Research Foundation, Inc., which has filed a patent application on the new technology.

The Centers for Disease Control and Prevention estimates that, in the U.S. alone, foodborne pathogens are responsible for 76 million illnesses every year. Of the people affected by those illnesses, 300,000 are hospitalized and more than 5,000 die. These widespread outbreaks of food-borne illnesses are attributed, in part, to the fast-paced distribution of foods across the nation. Recently, raw tomatoes caused an outbreak of salmonellosis that sickened more than 300 people in at least 28 states and Canada.

Currently, a chlorine wash is frequently used in a variety of ways to reduce harmful bacteria levels on vegetables, fruits and poultry, but because of chlorine's sensitivity to food components and extraneous materials released in chlorinated water treatments, many bacteria

survive. Chlorine is toxic at high concentrations, may produce off-flavors and undesirable appearance of certain food products, and it can only be used in conjunction with specialized equipment and trained personnel. In addition, chlorine may be harmful to the environment.

"We can't rely on chlorine to eliminate pathogens on foods," said Michael Doyle, one of the new technology's inventors and director of UGA's Center for Food Safety. "This new technology is effective, safe for consumers and food processing plant workers, and does not affect the appearance or quality of the product. It may actually extend the shelf-life of some types of produce."

Doyle is an internationally recognized authority on food safety whose research focuses on developing methods to detect and control food-borne bacterial pathogens at all levels of the food continuum, from the farm to the table. He has served as a scientific advisor to many groups, including the World Health Organization, the Food and Drug Administration, the U.S. Department of Agriculture, the U.S. Department of Defense and the U.S. Environmental Protection Agency.

The new antimicrobial technology, developed by Doyle and Center for Food Safety researcher Tong Zhao, uses a combination of ingredients that kills bacteria within one to five minutes from application. It can be used as a spray and immersion solution, and its concentration can be adjusted for treatment of fragile foods such as leafy produce, more robust foods such as poultry, or food preparation equipment and food transportation vehicles.

"The effectiveness, easy storage and application, and low cost of this novel antibacterial make it applicable not only at food processing facilities, but also at points-of-sale and at home, restaurants and military bases. The development of this technology is timely, given the recent, sequential outbreaks of foodborne pathogens," said Gennaro Gama,

UGARF technology manager in charge of licensing this technology.

Source: University of Georgia

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