

Alcohol-based hand sanitizer is as effective as soap and water in reducing bacteria on farmworkers' hands

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Study results showed both soap and alcohol-based hand sanitizers (ABHS) were efficacious hand hygiene solutions at reducing concentrations of bacteria on farmworkers' hands.

A new study published in the *Journal of Food Protection* and led by researchers at The Rollins School of Public Health at Emory University and collaborators from the Universidad Autónoma de Nuevo León and GOJO Industries revealed that both soap and alcohol-based hand sanitizers (ABHS) were efficacious hand hygiene solutions at reducing concentrations of bacteria on farmworkers' hands. In the case of ABHS, these products reduced up to 99.5 percent of indicator bacteria on produce handler hands, even when hands are heavily soiled with dirt and organic load from crop handling. Soap-based products had similar efficacy and reduction in indicator bacteria.

Effective [hand hygiene](#) is essential to prevent the spread of pathogens on produce farms and reduce the risk of foodborne illness. In fact, some produce-associated outbreaks have been thought to be caused by infected farmworkers, and, possibly, inadequate sanitation and hygiene.

On Nov. 27, 2015, the United States Food and Drug Administration (FDA) released the Food Safety Modernization Act Produce Rule, which are "groundbreaking final rules that will help produce farmers and food importers take steps to prevent food safety problems before they occur." This study, and past studies conducted by this team, provides new evidence to this rule and demonstrates that alcohol-based hand sanitizers and soap and water are both effective hand hygiene interventions when hands are visibly soiled.

Led by Juan S. Leon, PhD, associate professor in the Hubert Department of Global Health at Emory University's Rollins School of Public Health, the study assessed 181 tomato farmworkers in Nuevo Leon, Mexico. Partners included Universidad Autónoma de Nuevo León, led by Dr. Santos Garcia; GOJO Industries, led by Dr. Jim Arbogast; and North Carolina State University, led by Dr. Lee-Ann Jaykus. After dividing into groups of soap-based and alcohol-based hand hygiene interventions, hand samples were analyzed for the reduction of bacteria.

The goal was to determine the most effective way to reduce microbes such as coliforms, E. coli, and Enterococcus, as well as filth.

"Without any intervention, farmworkers' hands were heavily soiled and contaminated with high concentrations of bacteria after hours of harvesting," explains Leon. "Based on our results, both soap and alcohol-based hand sanitizer can be viewed as good hand hygiene solutions for the fresh produce industry. The performance of hand hygiene interventions can vary and hand hygiene products and recommendations will need to be tailored to meet the unique needs of farms and packing facilities in the US and globally."

"Effective hand hygiene plays a critical role in reducing the spread of illness-causing germs," added Arbogast, who is vice president of hygiene sciences and [public health](#) advancements at GOJO. "At times, access to good quality soap and water is limited and a significant barrier to adequate hand hygiene. This study demonstrates that alcohol-based hand sanitizer may be a viable option for farmworkers, even on heavily soiled hands, in the absence of soap and water."

More information: Anna Fabiszewski de Aceituno et al. Ability of Hand Hygiene Interventions Using Alcohol-Based Hand Sanitizers and Soap To Reduce Microbial Load on Farmworker Hands Soiled during Harvest, *Journal of Food Protection* (2015). [DOI: 10.4315/0362-028X.JFP-15-102](#)

Provided by Emory University

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