The Importance of Hand Hygiene

in a food processing environment

Another Edu-Article from Best Sanitizers

Introduction

Research suggests that the human hand can harbor over 150 bacteria at one time, underlining the importance of proper hand hygiene in the food industry. The World Health Organization, a preeminent international public health agency, states that hands are the principal vehicle for the transfer of organisms from feces, noses, skin, clothing and other sites to food and food contact surfaces in the processing environment.

It has been estimated that 40% of all foodborne illness outbreaks in the United States are a direct result of hand cross-contamination [1], galvanizing processors to educate workers on the importance of proper hand hygiene in training programs.

Standards and Guidelines

Globally, handwashing with water and soap is widely accepted as the gold standard method to remove soil and transient microorganisms from hands. In the U.S., the FDA Food Code sets handwashing standards and guidelines in food processing facilities. Moreover, various agencies and third-party groups, including the Centers for Disease Control and Prevention (CDC), NSF International and the Global Food Safety Initiative, have also composed best practices for handwashing in food operations [2].

In short, effective handwashing involves scrubbing (with a soap or cleaning agent), rinsing (using suitable water temperatures) and complete drying (via clean towels or air) to minimize the likelihood of microbial cross-contamination. After handwashing, prevailing industry standards and guidelines recommend using chemical hand sanitizers to further reduce the presence of bacteria on hands. By reducing the colony forming units (CFUs) on the hands, it is more difficult for bacteria to transfer on to surfaces, utensils, ingredients, and finished food products from contaminated hands.

Killer Sanitizers

Chemical hand sanitizers, which are registered through the FDA and NSF International for use in food processing facilities, fall into two categories: alcohol-based and alcohol-free which are available in various forms, including sprays, liquids, gels and foam.

The majority of alcohol-based hand sanitizers in the U.S. contain ethanol, isopropanol, or a combination of the two products. The antimicrobial activity of alcohol lies in its ability to denature proteins that are critical to the survival of bacteria and viruses. Sanitizers containing 60-95% alcohol are most effective in killing microbes on hands, according to the CDC [3]. Significant amounts of proteins and fats on hands, however, can decrease their effectiveness, making pre-cleaning of the hands critical to achieve maximum pathogen reduction.

Alcohol-based sanitizers strip away the outer layer of oil on the skin, destroying transient microorganisms on the surface of hands. After use, regrowth of microbes on the skin tends to occur slowly, effectively keeping "residual" microflora that reside in deeper layers of skin from coming to the surface [4].

More recently, chemical manufacturers have created hand sanitizers in the form of a spray, which provides some additional benefits not found in more traditional hand sanitizers, such as gels. A hand sanitizer spray is delivered as an atomized spray which saturates the fingernails, cuticles, creases and crevices of the hands and fingers where pathogens commonly hide. Unlike the viscous properties of a gel, hand sanitizer spray goes on light and covers the entire surfaces of the hands. For consistent users, alcohol-based solutions can have a drying effect on hands, causing painful cracking in the skin. To address this health concern and foster the ongoing use of these products by workers, alcohol-based hand sanitizers commonly contain an emollient to minimize skin cracking, drying and irritation.

The active ingredient in alcohol-free hand sanitizers is benzalkonium chloride, an antimicrobial agent which destructs bacterial cell membranes to inhibit microbial growth. Introduced as an alternative to alcohol-based sanitizers, these products are distinguished by a number of characteristics, such as:

- Alcohol-free hand sanitizers are water-based, causing less skin cracking and irritation than alcohol-based products
- Alcohol-free hand solutions are non-flammable, and low concentrations of benzalkonium, a quaternary ammonium, make it relatively non-toxic

Rule-of-Thumb

When using hand sanitizers, it is imperative to follow manufacturer's instructions. The length of time that the sanitizer stays in contact with microbes is critical. If the sanitizer is not applied for the prescribed length of the time, there is no assurance that microbes will be killed. As a general rule of thumb, sanitation experts recommend rubbing the sanitizer into both hands until they are completely wet. Hands should be rubbed until they are dry.

Chemical hand sanitizers are an essential part of effective hand hygiene practices in food production facilities. Quality assurance and sanitation teams should consider the benefits of choosing a hand sanitizer that meets all FDA (GRAS) and USDA requirements for food handling, is formulated with emollients to keep hands soft, and is manufactured in a cGMP, FDA and EPA/FIFRA compliant facility.

First Line of Defense

Throughout the food industry, it is commonly said that proper hand hygiene is the first line of defense in reducing the risk of cross-contamination from workers' hands. Therefore, the goal of hand hygiene is to reduce the number of pathogens on the hands to the smallest number possible.

Best Sanitizers, Inc. recommends using a quality hand soap like Alpet® Q E2 Sanitizing Foam Soap or Alpet® E1 Fragrance-Free Soap to reduce pathogens. Alpet Q E2 Sanitizing Foam Soap is pH balanced and formulated with emollients to help keep employ-ees' hands soft and healthy, even with repeated use. Alpet E1 is a fragrance-free, foaming hand soap that meets Safer Choice Standards, meaning the product's formula contains ingredients with more positive human health and environmental characteristics than conventional products of the same type.

Additionally, Best Sanitizers recommends using an effective hand sanitizer, such as Alpet® E3 Plus Hand Sanitizer Spray. Its 71% Ethanol formula is 99.9999% effective in killing 26 tested pathogens in 15 seconds, which is one of the highest LOG reductions in the industry. Alpet E3 Plus is formulated with emollients to keep hands soft and healthy, even with repeated use. As a spray, it goes on light and leaves hands feeling silky, not heavy and sticky.

Best Sanitizers, Inc. can help you improve your hand hygiene program with products, solutions and expert training. Best Sanitizers offers food manufacturers free hand hygiene training, guidance and support through onsite training or web-based presentations. Interested companies in the food manufacturing industry can learn more and schedule their training by calling Best Sanitizers at 888.225.3267.

Sources:

- 2. L. Lupo. Hand sanitizers. Retrieved from https://www.qualityassurancemag.com/article/qa0612-proper-hand-sanitation-practices/.
- 3. CDC. Retrieved from https://www.cdc.gov/handwashing/show-me-the-science-hand-sanitizer.html.
- 4. A. Simonne. Hand hygiene and hand sanitizers. Retrieved from https://edis.ifas.ufl.edu/pdffiles/FY/FY73200.pdf.

^{1.} Todd EC, Michaels BS, Holah J, Smith D, Greig JD, Bartleson CA. Outbreaks where food workers have been implicated in the spread of foodborne disease. Part 10. Alcohol-based antiseptics for hand disinfection and a comparison of their effectiveness with soaps. External J Food Prot. 2010 Nov; 73 (11):2128-40.

cated in the spread of foodborne disease. Part 10. Alcohol-based antiseptics for hand disinfection and a comparison of their effectiveness with soaps. External J Food Prot. 2010 Nov; 73 (11):2128-40.

To discuss strategies for improving hand hygiene in your facility using products and guidance from Best Sanitizers products and

using products and guidance from Best Sanitizers products and solutions, contact your account representative, or call Best Sanitizers at 888-225-3267.



Surface Sanitizers







Footwear Sanitizers





PO Box 1360 Penn Valley, CA 95946 888-225-3267 / www.bestsanitizers.com

© 2020 Best Sanitizers, Inc.