

### ***Bio Tech Liquid Hand Soap***

Keeping hands clean through improved hand hygiene is one of the most important steps we can take to avoid getting sick and spreading germs to others. Many diseases and conditions are spread by not washing hands with soap and clean, running water. If clean, running water is not accessible, as is common in many parts of the world, use soap and available water. If soap and water are unavailable, use an alcohol-based hand sanitizer that contains at least 60% alcohol to clean hands.

#### When should you wash your hands?

- Before, during, and after preparing food
- Before eating food
- Before and after caring for someone who is sick
- Before and after treating a cut or wound
- After using the toilet
- After changing diapers or cleaning up a child who has used the toilet
- After blowing your nose, coughing, or sneezing
- After touching an animal, animal feed, or animal waste
- After handling pet food or pet treats
- After touching garbage
- Ultimately when your hands are soiled

#### How should you wash your hands?

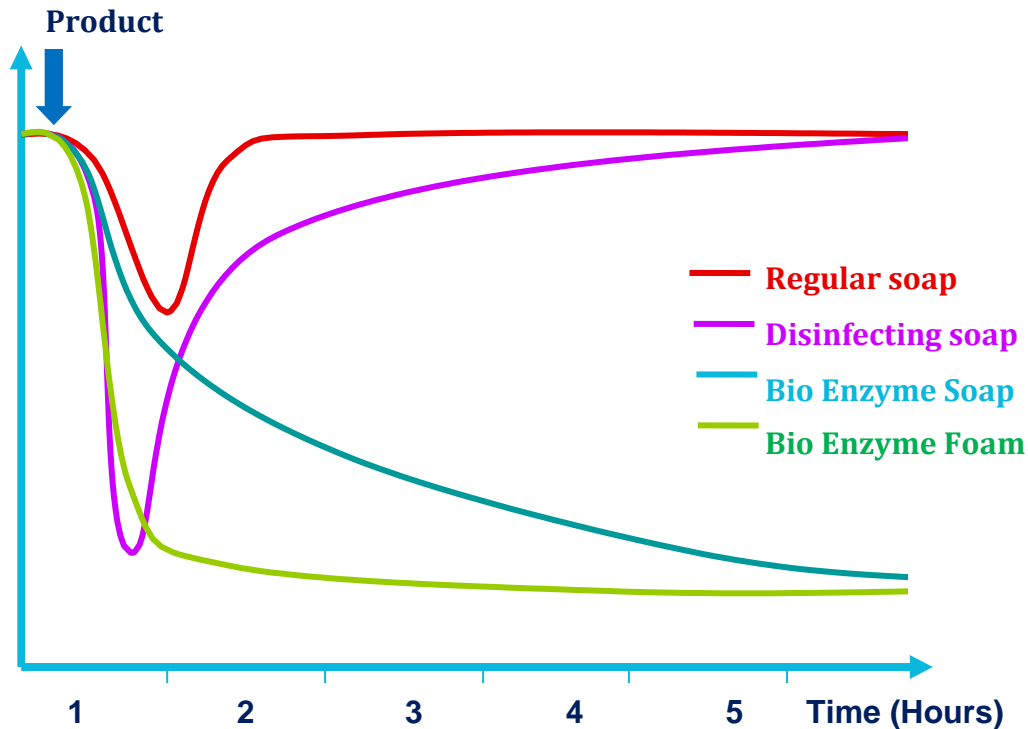
- **Wet** your hands with clean, running water (warm or cold), turn off the tap, and apply foam soap.
- **Lather** your hands by rubbing them together with the foam soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.
- **Scrub** your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
- **Rinse** your hands well under clean, running water. Do not forget to turn the running water off.
- **Dry** your hands using a clean towel or air dry them

## TESTING OF Liquid Hand and foam Soaps

RESULTS OF Bio Enzyme Liquid and Foam Hand Soap

COMPARED TO CURRENT REGULAR & DISINFECTANT SOAPS

- The Green Worx CS Hand soap and foam soap: is a creamy and or foam Bio Enzyme skin cleanser creating a healthy and stable microflora on the hands and other skin areas.



The overall concept of Bio Enzyme hand hygiene is that immediately upon application the Bio Enzyme bacteria will colonize the hands and prevent pathogenic bacteria, yeasts and moulds from multiplying and spreading.

**SUMMARY:** It can be seen that there is a significant difference in the protection against the risk of infection between the hospital legacy cleaning and disinfectant solutions used over the past decades compared to the cleaning ability of Bio Enzyme Foam Hand Soap solutions.

Of prime importance in infection control is the “**Protection Time Factor**”.

Studies show that staff hand washing is inconsistent. Therefore, the protection from disinfecting soaps of only minutes, compared to the many hours of Bio Enzyme protection offering significant advantage in infection control.

This chart demonstrates why Bio Enzyme products, in addition to risk reduction, also provide substantially better cleaning. Disinfectants stop working as soon as they are dry. Bio Enzymes keep working, cleaning and protecting surfaces, for up to three days after each application. However, since skin is a dynamic environment that is constantly touching many different surfaces, repetitively being contaminated and washed, the Bio Enzymes should be used several times per day and for each hand-washing.

### Biological Validation of Bio Enzyme Liquid Foam Hand Soap

#### Results

The test consisted out of three phases:

- Phase 1: comparative test for immediate and selected pathogen removal.
- Phase 2: protective effect of the bio-enzyme bacteria

- Phase 3: test in a real life situation

**Phase 1** indicated that Liquid Foam Hand Soap without bio-enzymes/ bacteria was equally efficient in compared to other hand soaps and sanitizers.

**Phase 2** results indicated that the addition of the bacteria resulted in an improvement of the product performance. The bacteria were transferred to the skin and the risks of other micro-organisms was significantly reduced and suppressed for a longer period of time after application.

**Phase 3** showed that the everyday use of the skin cleansers provided a long lasting microbial protection of the hands. Although occasional bacterial contamination by hand contact with highly contaminated surfaces can never be prevented, the use of bacteria based hand hygiene products certainly reduces the risk of pathogenic organisms on the hands.

## Conclusion

**Bio Tech GT Liquid / Foam Hand Soap forms a healthy and protective micro flora on the hands.**

## Goal of the test

To verify the effect of Bio Tech GT Liquid Foam Hand Soap on the micro flora of the skin.

**Location:** Green Worx R&D

**Date:** July 2018

**Product used:** Green Worx CS Bio Tech GT Liquid Hand Soap

## PRODUCT CHARACTERISTICS

- **Bacteria Counts** : 3 X 10<sup>7</sup> /ml
- **Bacteria Type** : Bacillus consortium producing the following enzymes:
  - ✓ **Protease** – breaks down proteins (e.g. meat, excreted/secreted proteins) into amino acids
  - ✓ **Lipase** – breaks down fats/grease into fatty acids & glycerol. If not broken down, fats can go rancid & lead to off-odours and blocked drains/fat grease traps.
  - ✓ **Amylase** – starch acts as a glue for dirt – amylases catalyse the break-down of starch into sugars which are then further used as a food source by the bacillus
  - ✓ **Cellulase** – breaks down cellulosic material
  - ✓ **Urease** - catalyzes the hydrolysis of urea into break-down products.
  - ✓ **Esterase** - splits esters into an acid and an alcohol in a chemical reaction with water called hydrolysis. Esters have characteristic odours most of which are pleasant/fruity, however can also include onion/garlic and worse odours
  - ✓ **Xylanase** – help in breaking down plant cell walls.
    - What this means – the bacillus use the multitude of enzymes produced to break down the components of malodour and staining to provide microbial cleaning at the smallest level of dirt/contamination.
- **Salmonella** : Not detected
- **Appearance** : Cream liquid pressured through a foam nozzle producing a rich lather
- **Fragrance** : Pleasantly perfumed
- **Shelf-life** : Two years; maximum loss of 1.0 log at recommended storage condition

**Bio Tech GTX Liquid Foam Hand Soap** is designed as a bio-technical aid to treatment of organic waste material offering liquefaction and reduction of solids, reduction of odour, easier disposal of waste, aids general cleaning of soiled areas, safety in operation of effluent systems, offers a viable alternative to current processing techniques using a bio-technical approach. Regular use and rinsing will aid in the degradation of organics within the drain system.

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