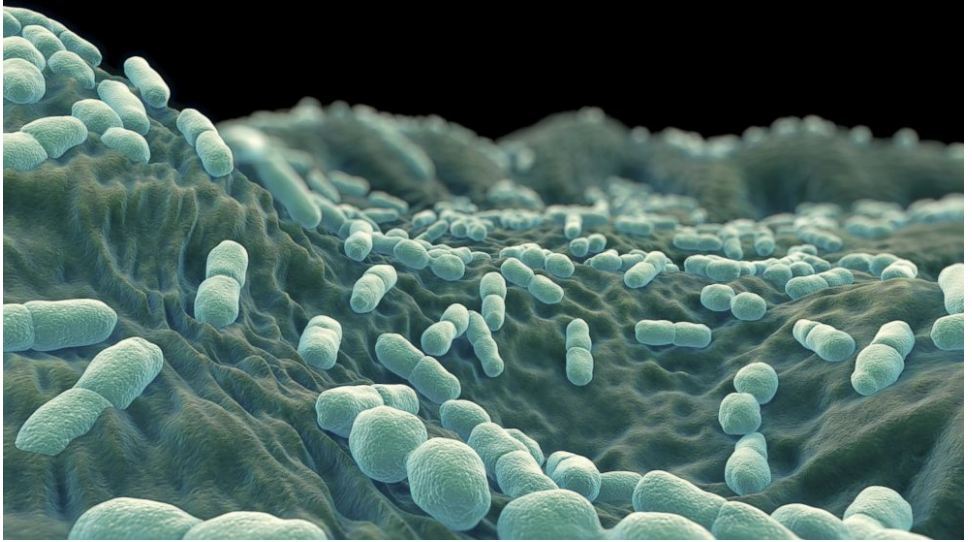


Listeria Treatment for Drains

Drains in food production facilities are the most common location where *Listeria* can be found. A study by the USDA/FSIS, done in 2004, found that 30% of drains in food and beverage production facilities tested positive for *Listeria*. To make matters worse, harmful bacteria like *Listeria* produce their own biofilm and are protected by the multiple layers of organic polymers. This requires special attention and enzymatic technology to fully eliminate.

Listeria grows and multiplies by feeding off of the organic soils that can be left behind due to improper cleaning or limitations in chemistry. Sanitizers or disinfectants by themselves are ineffective against bacteria that are protected by biofilm, therefore *surfaces must be properly cleaned first*.



Realzyme's curative contamination treatment, using ENZYFOAM and BIOREM CD20, followed by an oxidizer-based sanitizer (chlorine, peracetic acid, etc), is how you solve this problem at your customer's facilities.

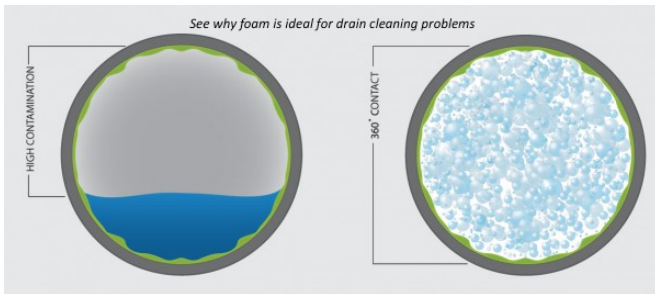
The protocol listed below detail how to use Realzyme's enzymatic detergents for cleaning when there is a severe contamination, including *Listeria* issues.

Curative Biofilm Treatment: This is the first or "shock" treatment. It is critical that this process be applied (5) times (during initial application or over several days) to fully eradicate contamination.

1. Perform thorough pre-rinse step and knockdown with HOT WATER. Ensure that ALL large product and soils (over 90 %) are removed.
2. Ensure that all foaming equipment is thoroughly rinsed to a pH-neutral environment. A non-pH neutral environment can cause enzyme deactivation. Prepare foam charge using the products and dilution specified. For a 45-gallon foamer, this corresponds to 58 ounces of ENZYFOAM and 12 ounces of BIOREM CD20 added to water. If the foamer is a different capacity, calculate the amount of ENZYFOAM needed using a 1.3 oz/gallon ratio and BIOREM CD20 using 0.25 oz/gallon. Temperature of the water should be in the range of 105-125° F. Δ Temperature above 130° F cannot be used due to risk of enzyme deactivation.

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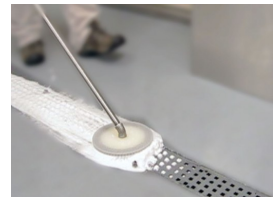
Preventative Treatment: Using **Biorem Foam**, perform the same process as needed based on measured contamination levels, i.e. once per week, once a month, etc (every facility will vary). Only a single application is needed with preventative treatments.



○ **Round drains:** Remove drain cover and apply foam into the opening of the drain as well as the surrounding floor (12-24" diameter around). A drain foaming attachment is recommended for optimal coverage.



○ **Trough drains:** If possible remove trough cover/grating and apply foam to the entire length, depth, and the surrounding floor area (approx 12"). If the cover is not removable, the use of a trench drain foaming attachment is recommended. The foam consistency should be very thick, similar to shaving cream texture. Allow approximately 30 minutes of dwell time for optimal results.



1. Rinse thoroughly with warm water. It is critical that all surfaces that have been cleaned be fully and thoroughly rinsed to optimize the performance of the sanitizer. A surface that is not properly rinsed will negatively impact ATP swab readings.
2. As a final step, apply an oxidizing-based disinfectant / sanitizer at a minimum of 400-500 ppm. The use of an oxidizing-based product when properly used is critical to achieve a proper kill step.