

Water & Environmental Technologies

# BioRemove FOG Boost

BioRemove FOG Boost contains a combination of beneficial microorganisms specially blended for industrial and municipal waste treatment system applications with high fats, oils, and grease (FOG). BioRemove FOG Boost is used in wastewater systems to improve plant efficiency, increase the FOG degradation capacity, lower FOG removal costs, and decrease the presence of prevalent FOG filamentous bacteria.

## Benefits

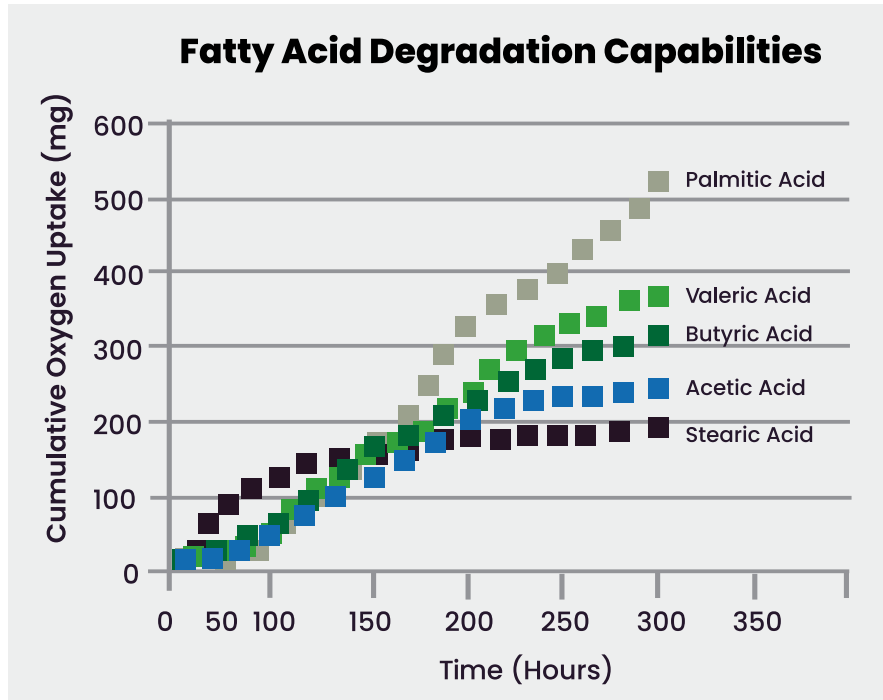
The large diversity of influent conditions and flows seen in wastewater treatment plants can be challenging and expensive to treat. Excess untreated FOG can cause permit violations, decrease dewatering capabilities, promote growth of FOG filamentous bacteria that can cause foaming, as well as increase operating time and costs from skimming. As regulations for water treatment have grown increasingly stricter and penalties for permit violations have increased, efficiently removing FOG from the wastewater is more important than ever.

FOG is primarily composed of large water-insoluble triglyceride molecules. These triglycerides are made up of a glycerol and three fatty acids (most commonly palmitic, stearic, and oleic acids). While many naturally occurring microorganisms have the ability to produce extracellular enzymes to cleave the fatty acids from the triglyceride, not many organisms have the ability to further break down these fatty acids. As a result, BOD/COD removal efficiency can decrease, pH can drop with the acid buildup, and some of these fatty acids can become volatilized as noxious odors.

BioRemove FOG Boost can greatly simplify plant operations. It helps maintain a healthy microbial community and eliminates FOG-related problems.

## Performance

Microorganisms in BioRemove FOG Boost were carefully selected for their ability to cleave the fatty acids from the triglycerides and degrade them. Strains have been demonstrated to metabolize a range of both long- and short-chain fatty acids.



**Fig.1** Respirometry results showing growth on a variety of short- and long-chain fatty acids.

BioRemove FOG Boost is an effective solution for degrading FOG, as demonstrated at a wastewater plant that was experiencing heavy grease loading, which resulted in most of the surface area of the aeration tank being covered with a greasy foam. The plant began a program with BioRemove FOG Boost that was designed to enhance the microbial community's ability to degrade FOG. With regular use over several weeks, BioRemove FOG Boost degraded the FOG and eliminated all buildup on the surface.



**Fig. 2** Before treatment, with heavy FOG.



**Fig. 3** During treatment, with reduced FOG.



**Fig. 4** Ongoing treatment, with FOG control.

## Recommended Use

BioRemove FOG Boost can be used for multiple applications, including daily dosing to maintain FOG degradation capabilities, increased dosing during upsets caused by high FOG loading and flows, and seeding during plant start-ups and recoveries.

The dosage rate for BioRemove FOG Boost is dependent upon the wastewater constituents, average daily wastewater flow, volume of the biological reactor, and COD load. During the initial seeding period, an increased dosage is used to quickly establish the microorganisms in the system. When the microbial community is properly grown, regular dosing is necessary to maintain an accelerated level of biological activity.

## Optimum pH and Temperature

BioRemove FOG Boost is added daily directly to the aerobic treatment unit. The microorganisms in BioRemove FOG Boost perform with the pH range 4.5–8.5, with an optimum near 7.0. Wastewater temperature affects activity, with an approximate doubling in maximum growth rate for each 10 °C (18 °F) increase in temperature to an approximate upper limit of 45 °C (113 °F). Very low activity can be expected below 10 °C (45 °F). Specific dosing recommendations are determined based on plant-specific conditions.

## Product Characteristics

PRODUCT	APPLICATION	PHYSICAL FORM
BioRemove FOG Boost	FOG removal	Dry tan powder

## Safety, Handling, and Storage

Store in a cool, dry place. Avoid inhalation of dusts. Wash hands thoroughly with soap and water after handling. Avoid contact with eyes. More information can be found in the corresponding product safety data sheet (SDS).

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Item #E957-9216 09/23