

LAB STUDY REPORT



EnviroDEFENSE[®] FOG Degradar

Test: Butter, Soybean Oil, Vegetable Oil & Glycerol

Airmax

Safe, Simple Solutions[™]



EnviroDEFENSE® FOG Degradar

Lab Studies

Product Overview

A multi-strain dry bacterial solution specifically formulated to degrade fats, oils and grease and other food waste in the demanding environments of drain lines, grease traps and grease interceptors.

Restaurants, hospitals, schools, and other institutions are prohibited from directly discharging grease into the city sewer system and must take precautions to prevent oil and grease from cooking operations entering the sewer lines. Because of the regulations surrounding discharge, grease traps are essential to the operation of many businesses and organizations in a community.

Grease build ups are often the cause of slow drain and sewage back-ups as well as creating drain odors and even pest problems. EnviroDEFENSE® FOG Degradar is developed specially for formulators to easily create highly effective biological products for grease traps, associated drain lines and also for fat problems in water treatment plants.

The bacterial consortium present in this product produces lipase enzymes which target large oil and grease molecules, breaking them down into smaller molecules that are then metabolized by the bacteria to quickly degrade the fat and reduce the risk of blockages. As the lipase enzymes get to work free fatty acids are released, which reduces the pH, creating a harsh environment for bacteria. The strains in EnviroDEFENSE® FOG Degradar series are specially selected to work effectively in lower pH ranges found in grease traps and grease interceptors. They have been shown to break down a wide range of materials found in grease traps and grease interceptors:

vegetable, soy, canola and olive oil, solid fats such as lard, beef tallow and butter starch, proteins and cellulose

In addition, the formulation contains no emulsifying surfactants such as NPE's, making it a safe and effective choice for grease trap and grease interceptor maintenance products.



Advantages of EnviroDEFENSE® FOG Degradar

EASY DILUTION FOR FORMULATORS TO CREATE GREASE TREATMENT PRODUCTS
DILUTED PRODUCT HAS VERY HIGH BACTERIA CONCENTRATIONS
CONTAINS LIPASE ENZYMES FOR FAT DEGRADATION
PROVEN TO DEGRADE A WIDE VARIETY OF FATS AND OTHER FOOD WASTE
BACTERIA WORK IN WIDELY FLUCTUATING PH'S
ODORS FROM TRAPS AND DRAINS REDUCED IN HOURS OF APPLICATION
ENVIRONMENTALLY FRIENDLY FORMULA
MANUFACTURED UNDER STRICT QUALITY CONTROL

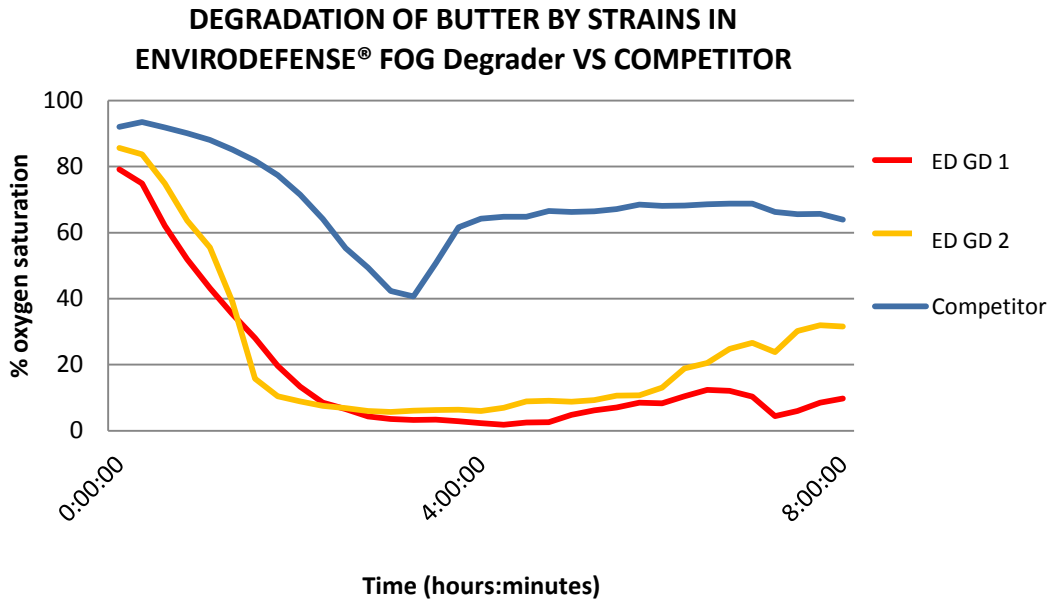
Applications

Grease traps and grease interceptors
Kitchen drain lines
Wet wells and wastewater piping
Municipal wastewater plants with grease problems
Industrial wastewater treatment, especially in the food industry



**Grease Buildup In Wet Well
Before Treatment With
EnviroDEFENSE® FOG Degradar**

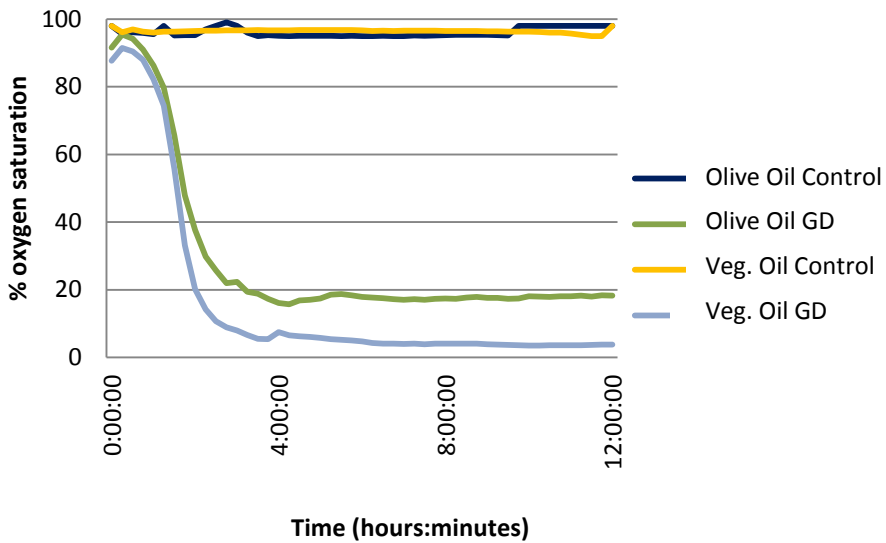
**Same Well One Month
After Treatment With
EnviroDEFENSE® FOG Degradar**



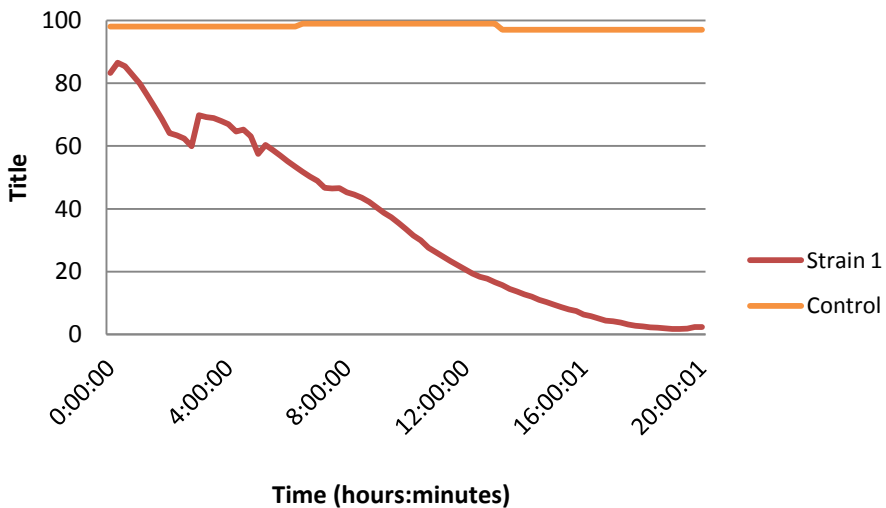
The relative ability of bacterial strains to degrade fats can be tested by following oxygen uptake: as the bacteria break down the fat to carbon dioxide and water, oxygen is consumed. At Airmax we do these experiments in a 96 well plate reader which allows many different strains and substrates to be tested under the same conditions. Results for two of the bacterial strains used in EnviroDEFENSE® FOG Degradator on degradation of butter are shown here (red and orange lines), compared to the strain used in a major competitor product (blue line). The EnviroDEFENSE® strains start to degrade the butter very quickly, in less than one hour, and degradation is extensive, as the oxygen falls to close to zero. The competitor strain takes longer to get going and the degradation is less extensive. In graphs 2 and 3 below, the degradation of different FOG substrates under the same percent oxygen decreased saturation principle is illustrated.

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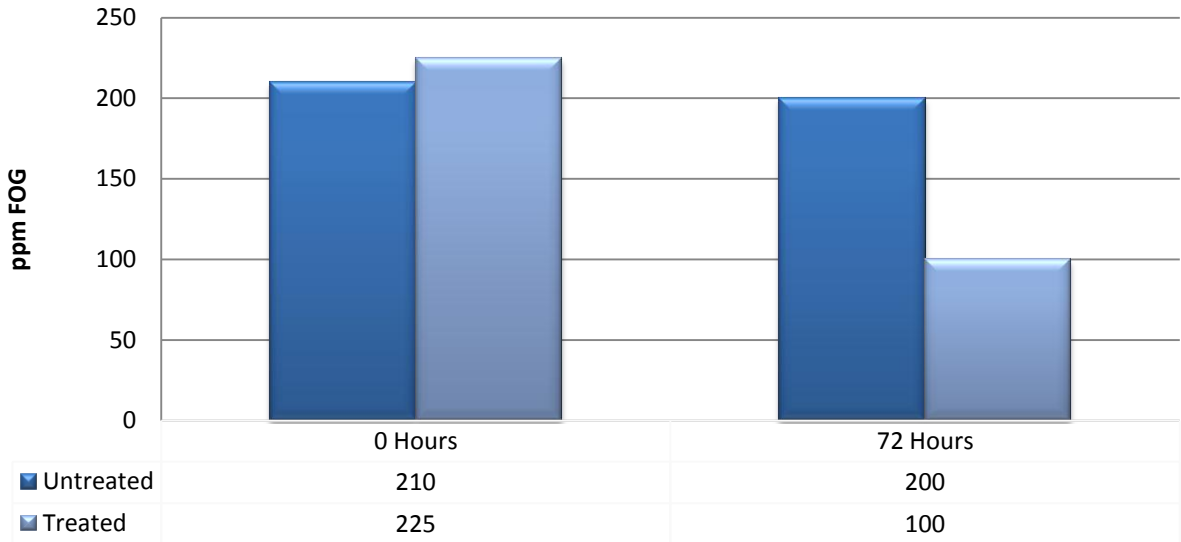
VEGETABLE & OLIVE OIL DEGRADATION BY ENVIRODEFENSE® FOG Degradator



MINIMAL MEDIA PLUS GLYCEROL DEGRADATION BY ONE STRAIN OF ENVIRODEFENSE® FOG Degradator



**DEGRADATION OF SOYBEAN OIL
WITH 7 STRAIN BLEND IN ENVIRODEFENSE® FOG Degradator**



PPM FOG measured using InfraCal® TOG/TPH Analyzer (Model HATR-T2), by Wilks Enterprise, Inc. - This represents a **55.6% Degradation of FOG in 72 hours**

Technical Specifications For EnviroDEFENSE® FOG Degradator

Targeted Compounds	Wide range of organic compounds including, proteins, starches, cellulose, and fats, oils, and greases from food sources.	
Bacterial Count	4 Billion Concentration	
Bacterial Type	Bacillus spore blend.	
Formula Properties	Dry, Fluffy Brown Consistency.	
Performance Properties	Effective pH Range: 4.0-11.0	Temperature Range: 45-120°F (5-50°F)
Packaging	1 Gal & 55 Gal Containers (Shelf life of 24 months in an original unopened container).	



For More Information Call:

866-424-7629

www.envirodefenseproducts.com



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