



## **GREASE-X<sup>®</sup> BIOZYME**

### **Microbial Ecosystem for Municipal Collection Systems**

#### **COLLECTION SYSTEM PROBLEMS**

Municipal wastewater contains many dissolved and suspended contaminants that present big problems for collection system managers. Contaminants such as fats, grease, soap scum, and cellulose can stick to the collection lines and restrict the water flow to the point of causing a blockage and subsequent back-up. Clearing blocked lines the traditional way is a difficult job requiring expensive jetting equipment and usually overtime labor. Back-ups are embarrassing and can be costly for Utility Departments. Now, through biotechnology, there is a reliable and easy-to-use treatment that offers a preventative maintenance solution.

#### **THE BIOTECHNOLOGY SOLUTION: GREASE-X BIOZYME Microbial Ecosystem**

Microorganisms are nature's own method of eliminating organic waste. The specially selected mixtures of live microbes contained in GREASE-X BIOZYME, along with the enzymes they secrete, are well suited to digesting fat, oil, grease (FOG), and other organic matter as it enters and flows through the collection system. The GREASE-X BIOZYME microbes adhere to the collection system lines and lift station walls. In digesting organic waste, they reproduce and form colonies that continue to consume floating waste and accumulated FOG. The wall coating also acts as a lubricant to help reduce back-ups. The by-products of microbial digestion are perfectly natural, environmentally safe substances like carbon dioxide and water.

#### **PRODUCT DESCRIPTION**

GREASE-X BIOZYME is a highly concentrated microbial ecosystem containing specialized natural microorganisms selected for maximum efficiency in the biodegradation of organic contaminants in industrial and municipal wastewater. It is supplied as a dry fine granule.

#### **BENEFITS OF GREASE-X BIOZYME USAGE**

- Maintains free flowing collection systems.
- Reduces the floating FOG blanket and accumulation of grease on lift station walls.
- Reduces line and manhole deterioration due to sulfates.
- Saves utilities money versus mechanical and chemical line cleaning.
- Environmentally friendly approach.
- Contains no hazardous caustic, surfactants or solvents.

## APPLICATION SUGGESTIONS

Application techniques are very important to the success of any biological product. GREASE-X BIOZYME treatment dosage depends on how plugged the collection lines are at the start of treatment and how large the continual FOG load is.

### General Application Guidelines

#### Sewer Lines – Initial Application & Maintenance:

- Start at the furthest downstream line section.
- Treat the first 500 feet of line before moving upstream.
- For best results apply GREASE-X BIOZYME one or two manholes upstream of the treatment section. If dosing at beginning of line, soak Biozyme in warm water for 15 minutes before dosing.
- Repeat the process for each next upstream 500-foot section until the entire line section is clean.
- Once each line section is inoculated with GREASE-X BIOZYME and clean, begin the maintenance treatment program on each 1,000-foot section.

#### SEWER LINE APPLICATION RATES

Initial Inoculation Plan per 1' - 500' Section			Maintenance Plan per 500'-1000' Section		
Applications for 5 consecutive days			Weekly applications		
Pipe Dia.	Average Grease	Heavy Grease	Pipe Dia.	Average Grease	Heavy Grease
4	0.5	1	4	0.5	1
6	0.5	1	6	0.5	1
8	1	1.5	8	1	2
10	2	2.5	10	2	3
12	2.5	3	12	2.5	3.5
18	5	7	18	5	6
24	9	6.5	24	9	9.5

\* lbs. per day

\*lbs. per week

1 cup of bulk dry Biozyme = .5 lbs.

### Lift Stations:

1. Raise upper and lower floats 1-6 inches.
2. Soak Biozyme in warm water for 15 minutes prior to application.
3. Apply GREASE-X BIOZYME based on level of flow according to the schedule indicated below.

If heavy grease is present, Grease-X Emulsifier can be applied for a week prior to the Biozyme application to enhance its effectiveness.

### LIFT STATION APPLICATIONS RATES

Apply Grease-X Biozyme after soaking directly to the lift station.

<u>Flow Rate</u>	<u>1st Week</u>	<u>There After</u>
Up to 50,000 gpd	1 lb / day	1 lb / week
50,000 to 100,000 gpd	2 lb / day	2 lb / week
100,000 to 200,000 gpd	3 lb / day	3 lb / week
200,000 gpd and above	4 lb / day (per 300,000gpd)	4 lb / week (per 300,000gpd)

### PARAMETERS FOR USE

	<u>Optimum</u>	<u>Minimum</u>	<u>Maximum</u>
pH	7.0	4.5	9.0
Dissolved oxygen	> 3 ppm	2 ppm	none
Carbon/nitrogen ratio	10:1	10:1	20:1
Temperature	86°F	66°F	104°F
Compatibilities:	avoid concentrated toxicants like heavy metals, disinfectants and acids		

### PRODUCT SPECIFICATIONS

Overall, the number of microorganisms the product contains best measures microbial product quality. The typical measurement is done by plate count and is reported in terms of microbe cells (called colony forming units or CFU) per gram of product. GREASE-X BIOZYME is manufactured to have as high strength as possible in order to give the municipal customer the best value. Customers should be careful when comparing microbial products. Some claiming higher cell counts will distort the truth and quote counts for quantities of product greater than one gram. For example, 1 lb. of GREASE-X BIOZYME contains over 900 billion cells but the specification is,

GREASE-X BIOZYME Specification = 2,000,000,000 (2E+9) CFU per gram minimum

### PRODUCT FORM AS SUPPLIED

For long-term stability GREASE-X BIOZYME is supplied as a dry fine granule. As supplied, the microorganisms in GREASE-X BIOZYME are alive but in a dormant state. When added to water, the microorganisms become activated and begin vegetative growth utilizing the organic contaminants available. For ease of handling, GREASE-X BIOZYME is supplied in both 2 lb. Jars and 5-gallon plastic pails.

## **PRODUCT STORAGE:**

Biological products are unlike inert chemical products, they require special treatment during storage and handling.

- Do not store continuously at temperatures above 40°C (104°F).
- Do not freeze
- Store out of direct sunlight in a well-ventilated area.
- Keep product dry until ready to use.
- Do not mix with any materials not recommended by RootX, especially disinfectants and harsh chemicals.

## **SAFETY**

GREASE-X BIOZYME utilizes natural microorganisms, which are harmless to humans, plants and animals. GREASE-X BIOZYME does not contain genetically altered microorganisms. GREASE-X BIOZYME does not contain toxic or hazardous chemicals, acids, caustics or solvents. It is not corrosive to metal, ceramic and plastic. Users are advised to consult the Material Safety Data Sheet for further information and guidance.

**For institutional and industrial use only.  
Keep out of reach of children.**

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### **IMPORTANT NOTICE TO PURCHASER:**

“RootX warrants that the product conforms to its compositional description and is reasonably fit for the purpose stated on the label when used in accordance with the label instructions under normal conditions of use. There are no other express or implied warranties, whether as to merchantability, fitness for any use, or otherwise, given in respect of the product. Neither RootX nor its agents shall be liable for any damage, loss, or injury, whether the same arises directly or consequentially, by reason of any matter whatsoever relating to the use of the product, and any buyer’s or user’s exclusive remedy in any instance shall be limited to a replacement of the amount of product used to treat the service lateral or mainline at no cost.

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