



## BIO CLEANING SOLUTIONS

**GreenWorx**  
CLEANING SOLUTIONS

*Bio Tech GTX 10 NF Concentrate  
Abattoir Wastewater Treatment*

**A consortium of high bacterial specification, multi-strain, spore based concentrated formula for advanced biological degradation of abattoir waste water**

### Overview:

Organic wastes and wastewater from meat producing operations are usually treated in a "pre-treatment" process before being discharged into the sewer. This is done to reduce sewer charges by lowering the COD and or BOD of the wastewater. COD stands for "Chemical Oxygen Demand" and BOD stands for "Biological Oxygen Demand", and is a measurement of the amount of inorganic and or organic material in the waste water.

**Meat processing** Grease, fat, oils, wash water, cooking waste, dripping, hair, and feathers from slaughtering, butchering, cooking and packaging of fish, chicken, beef and all other meat products

The pretreatment facility is usually quite simple in design. Its main purpose is to hold the wastewater for a sufficient period of time while the bacteria are allowed to degrade the waste. The bacteria digest suspended and dissolved solids, actually functioning like a simple miniature wastewater treatment plant. It can be in a holding tank or retention pond, or a series of tanks and/or ponds.

Unless the ponds or tanks are properly treated, they can give off foul odours, have severe accumulation of solids on the bottom, and fail to lower the COD and or BOD as much as desired.

To allow this type of pre-treatment process operate properly, you require:

- The correct consortium and ratio of bacteria and bio-enzymes to be introduced into the system.
- Agitation – to mix, evenly distribute the bio-enzymes that break down any solids
- Aeration – to optimize bacteria activity

Meat processors wish to reduce the COD and BOD content of their wastewater as much as possible before it is discharged into the municipal sewer system. Commercial users are required to pay surcharges to the sewer system authority if their waste has high COD and or BOD. This is done because the high COD and or BOD waste puts an extra burden on the municipal treatment plant, making it work harder than normal. When you consider the many thousands of liters of water that a food processor can use every day, even a small "per liter" surcharge can add up to big bills. Proper pre-treatment of the waste - before discharge into the sewer system - will reduce or eliminate costly surcharges.

Food processing waste can be difficult to treat than many other types of waste. This is because the meat processing waste is fresh organic material. It is not already partially degraded, like many other types of waste. It is often acidic, and contains few naturally occurring bacteria to aid in digestion. It also contains a large amount of cellulose material, which required extra time and effort for the bacteria to digest. Finally, the typical pre-treatment facility is very simple and unsophisticated in design - unlike most municipal sewer treatment plants.

Such a system can, however, do its job very well. If the operator is able to pay a little bit of attention to his system, it will do a good job of reducing the COD and BOD of the wastewater. In most cases this treatment program will be as simple as adding bacteria and enzyme product at regular intervals and monitoring of the waste - adding pH adjusters as required maintaining the pH in the proper range.

The key to proper operation of this type of pre-treatment is time. The special consortium of bacteria and enzymes in FOG Free work much faster and more efficiently than ordinary bacteria, but they still require time to digest the waste. The longer the retention time, the more organic matter will be digested, and the lower the COD and BOD of the effluent water. Thus, retention time is the most critical factor in determining how much of the products must be used in a regular treatment program.

## DATA SHEET

Benefits	Features
<ul style="list-style-type: none"> <li>• Use as an 'environmentally responsible' yet highly effective product is based on biologicals as opposed to chemical action</li> <li>• Non-caustic and non-corrosive</li> <li>• A quality controlled manufacturing process ensures high degree of product purity</li> <li>• Very high bacteria specification for maximum effectiveness in this tough environment</li> <li>• Specifically selected, highly effective bacteria multi-strain formula for:               <ul style="list-style-type: none"> <li>- Production of lipase to cleave fats</li> <li>- Production of other extracellular enzymes to degrade food solids and sludge</li> <li>- Ability to survive in the low pH environment of an active grease trap</li> </ul> </li> <li>• Product contains Bacillus bacteria in 100% spore form for:               <ul style="list-style-type: none"> <li>- Extended product life</li> <li>- Product stability</li> <li>- Maintenance of original product specification</li> </ul> </li> <li>• A specifically targeted product for:               <ul style="list-style-type: none"> <li>- Grease traps</li> <li>- Heavy duty drain line maintenance</li> <li>- Waste water - fats, oils and greases</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The most common 'bio' products in the industrial, institutional and consumer market are liquids - the GT concentrates series are designed specifically for this use.</li> <li>• Simple format that is easily dilutable in water</li> <li>• Concentrates are easy to handle and store</li> <li>• Simple dilution format for easy calculation in formulation advantages of biological fats, oils and grease degraders</li> <li>• Highly effective and proven natural technology</li> <li>• Reduces the requirement and frequency of mechanical treatment to unblock drains due to grease build-up</li> <li>• Product can be sold to service companies to be retailed as part of their regular maintenance service programs</li> <li>• Grease is partially degraded by the time it reaches treatment plants, reducing system overload product format</li> </ul>

## PRODUCT CHARACTERISTICS

- **Bacteria Counts** : 1.98 x 10<sup>9</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 and glycerol. If not broken down, fats can go rancid and 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.
- **Appearance:** Straw coloured
- **Fragrance:** Neutral
- **Form:** Liquid
- **Shelf life:** 24 months (in un-opened container)
- **pH:** 7.0-8.0 (Performance properties effective pH range - 5.0 - 10.0 temperature range - 5 - 50°C)
- **Packaging:** 25 litre containers

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