



# Byo-Gon PX-109<sup>®</sup>

*First in Biostimulation*

*The world's leading manufacturer  
of natural wastewater treatment products*



**Environmental challenges** facing industries, municipalities, and homeowners today are increasingly complex and challenging. Efforts to reduce the impact of final discharges on precious water resources and to conserve these resources for future generations has raised the level of expertise and technology required for success.

Innovative leaders looking for a fresh, natural approach to marshal their resident microbes rely on Byo-Gon PX-109® to excite these resources to improve their operations – while reducing capital equipment requirements and stabilizing their plants. Getting the existing systems to perform at higher levels, while reducing costs, is truly a win-win for the operators and the customers of their efforts.

## **WHAT IS Byo-Gon PX-109®?**

Dr. Ralph Heinicke at the University of Hawaii identified the alkaloid, Xeronine as the active component in the Byo-Gon PX-109® product identified in US Patent # 4,666,606 “Method for Eliminating Grease and Odors from Sewage Systems.” As a biostimulant to enhance cell growth, Xeronine, acts to increase cellular metabolism of a wide variety of naturally-occurring micro-organisms. It is NOT a bacteria or enzyme, rather it enhances the performance of the resident microbes that have developed in a wastewater system based on the current conditions. It’s a natural and organic product that is plant-based and effective in aerobic, anaerobic, and facultative conditions.



### ***“I like how it works”***

Using Byo-Gon PX-109® in our treatment system has made a difference in odor and grease control. I like how it uses the existing microbes instead of adding something foreign to my system. We'll be customers for a long time.

*- Major poultry producer, North Carolina*

Xeronine is a cell growth enhancer that acts as a precursor to enzymatic activity at the cellular level. At the cellular level, enzymes govern the rates and types of biological reactions taking place. Xeronine acts as an “on-switch”, restarting enzymatic processes that might be slowed because of environmental conditions and promoting rapid cell growth, overcoming limiting conditions like those that exist in many treatment systems. The use of Xeronine has been proven to cause a shift from anaerobic fermentation to respiration with increased growth and activity of facultative anaerobes.



## **WHO NEEDS BYO-GON PX-109®?**

- Pulp & Paper Mills
- Rendering Plants
- Composting facilities
- Municipal wastewater
- Restaurants
- Food Processors
- Home septic systems
- Refineries
- Sludge lagoons
- Dairy, Cattle & Swine



## **WHY IS BYO-GON PX-109® BETTER THAN COMPETING PRODUCTS?**

Byo-Gon PX-109® offers a combination of environmentally safe benefits that are unmatched by conventional treatment methodologies:

- Safe to handle – 100% biodegradable
- Lowers effluent BOD and TSS
- Increases dissolved oxygen
- Reduces sludge volume and generation
- USDA approved for poultry use
- Eliminates odors
- Improved clarifier performance w/o polymers
- Lowers operating costs
- Stabilizes facilities to reduce upsets
- Reduces fats, oil and grease (FOG)





## HOW DOES *Byo-Gon PX-109*® WORK?

Like a vitamin for your treatment plant, *Byo-Gon PX-109*® simply helps nature do a better job with the microbes already present in the environment. Microbes are found naturally in wastewater and under optimal conditions they can synthesize all the contaminants before they leave the plant. In actual conditions, however, limiting factors (metabolic poisons, temperature extremes, pH shifts, unfavorable oxygen levels, etc.) rob these cells of their natural metabolic capacity. *Byo-Gon PX-109*® supplies the external source of a key alkaloid (Xeronine) to Accelerate Nature® so that microbes function more efficiently than ever before.

As a result, fats, oils, and grease are digested. Foaming problems and filamentous growth are reduced. Odors and sludge are eliminated as biological reactions. Sludge formed in wastewater lagoons, wetlands treatment systems, and in aerated basins is digested in place, eliminating the need for expensive dredging and dewatering operations and subsequent landfill space consumption. Problems are solved, not just pushed downstream, delayed, or allowed to impact the environment.

From small restaurants, to homeowners, to municipalities and industrial plants, satisfied customers worldwide attest to the benefits of ***Byo-Gon PX-109*®**.

### RESEARCH SHOWS HOW IT WORKS:

#### ***Penn State University***

Anaerobic digester studies showed improved methane gas production and volatile solids reduction in municipal applications. Percent methane concentration in the gas stream increased from 61% to 67%. Primary digester volatile solids reduction increased from 31% to 47% and overall digester system volatile solids reduction performance was improved from 64% to 72% during cold weather study conditions. Digester foaming levels were also significantly reduced during the study period, providing an opportunity for increased digester mixing efficiency. Winter digester gas production met or exceeded summer performance.

#### ***Pulp and Paper Testing***

Engineers at a newsprint mill in Oregon were able to reduce odors from aerated basins by eliminating septic conditions, improve secondary clarifier solids capture by 35%, and reduce secondary wasted solids in excess of 70%. A follow up project in New York confirmed the impact of increasing performance with effluent TSS reductions of 69%, BOD reductions of 40%, elimination of noxious odors, and digestion of over 943 metric tons of solids from the aerated stabilization lagoon.



#### ***Municipal Pilot testing***

A study conducted in Seattle, WA using anaerobic reactors confirmed university research results. Using a 15 day hydraulic retention time, the treated digester had increased alkalinity and methane forming organisms in the first HRT. By the end of the third HRT, gas production increased 15% and volatile reduction increased by 6% over a control digester. As loading rates were increased beyond design levels, performance was maintained and accelerated.



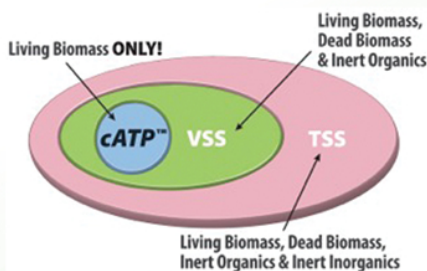
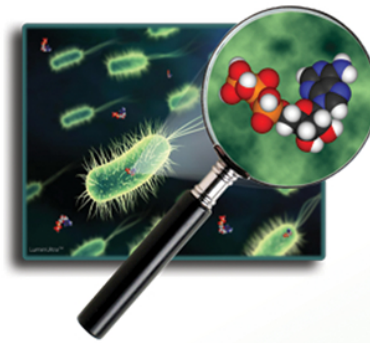


## MEASURABLE RESULTS

Advances in biological assessment technology have provided a means for us to analyze, predict, and prove

Byo-Gon PX-109® performance in wastewater treatment.

Tools such as ATP - Adenosine Triphosphate, from LuminUltra, directly measure cellular activity as microbiological reactions convert ATP to energy. Using ATP to evaluate wastewater microbial activity allows us to look inside the biology - past traditional measures, to evaluate specifically the living biomass in the system.



DNA testing of wastewater provides specific identification and quantification of the microbes present. Armed with this knowledge, along with detailed nutrient analysis and other advanced laboratory testing, we can tailor a Byo-Gon PX-109® treatment protocol to your specific system needs for optimal results.



*Available in convenient sizes*



## GENERAL PROPERTIES of BYO-GON PX-109®

**BIODEGRADABLE**... 100% naturally organic

**NON TOXIC** and not irritating to the skin. Can be used in all applications.

**NON-CORROSIVE** as a diluted solution. Harmless to all piping, gaskets, or caulking.

**SAFE** No masks, gloves, or special clothing required when using or handling the product. In fact, Byo-Gon PX-109® is one of the safest wastewater products available on the market.



*Byo-Gon PX-109® is a natural solution to solving the world's water issues.*

For more information and application to your specific situation, please contact us:

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