

Bionetix® Newsletter

January 2018

Winter Wastewater Treatment Tips

Cold weather can slow the activity of many things: people, water, and even bacteria. This can be a major problem for wastewater treatment plants that rely on bacteria already present in sludge, or added through bioaugmentation, to digest the organic load in wastewater.

At cold temperatures, it takes bacteria longer to grow and metabolize food. For every drop in temperature of $\sim 6^{\circ}\text{C}$ (10°F), bacteria can lose about 1 log of potential growth (a 90% reduction). Due to the drop in activity, waste treatment processes will be greatly slowed if the amount of bacteria is not adjusted. What makes the problem worse is that filamentous organisms can actually grow more during the winter, causing additional problems by decreasing DO (dissolved oxygen), pH, and the F/M (food to mass) ratio. Due to these factors, it is not surprising that plant upsets happen more often during winter.

Bioaugmentation helps maintain a healthy population of microbes to, in effect, eat up the contaminants in the wastewater. Adding a higher dose of microorganisms to the waste treatment system in winter through bioaugmentation helps keep the system balanced so there are enough microorganisms to keep up with the supply of food (contaminants). Since microorganisms function more slowly at lower temperatures, a larger population of microorganisms is needed to do the same work that a smaller population would perform in normal weather. Increased bioaugmentation helps make up the difference brought on by cold temperatures.

As always, choosing the right microbes for the target contaminant is one of the most important keys to developing an optimal bioremediation plan. Different microbes have different diets based on the specific enzymes they produce (they can also adjust their en-





zyme production to match various foods), and different industries produce different types of waste. For instance, pulp and paper industries may discharge a high amount of cellulose from paper pulp. The food industry often releases a lot of fats and greases. For this reason, Bionetix® International has specially formulated its line of BCP bioaugmentation products to meet the needs of specific industrial waste discharge types for a variety of industries including municipal sewage, food and beverage processing, chemical manufacturing, agriculture, and oil and gas production. Some of the specifically targeted products are as follows:

- Dairy Waste – BCP 25
- Pulp and Paper Waste – BCP 57
- Lagoon Treatment – BCP 60
- Anaerobic Digesters (e.g., Municipal Waste) – BCP 12
- Manure (e.g., Agriculture) – BCP 50 or BCP 80
- Chemical Waste – BCP 11
- Refinery and Petrochemical – BCP 35M

Because of slower bacterial activity in winter, it is best to give these microorganisms a head start if possible by dissolving them in a tub of water overnight at room temperature to pre-activate. Once activated, Bionetix® bacteria can continue to grow at temperatures as low as 5 °C (41 °F).

As usual, a variety of parameters should continue to be monitored for best results after the treatment is added, including DO values and nutrient levels. If DO values are low, additional aeration may be needed. If nitrogen and phosphorus levels are low (bacteria need nitrogen and phosphorus in a BOD:N:P ratio of 100:5:1 for proper growth), this can be taken care of by adding macro or micro nutrients such as Macro N/P and Micro 14.

For dosage recommendations and further questions, please contact your Bionetix® representative, Tonya Decterov (tdecorov@bionetix.ca) or Diana Di Marco (ddmarco@bionetix.ca).

Case Study: Winter Startup of Wastewater Treatment at Pulp and Paper Mill

The new owner of a pulp and paper mill that had been shut down for a little over one year scheduled start-up for January and February, two of the coldest months of the year. Wastewater treatment took place in aerated lagoons. Wastewater output from production was approximately 60,000 m³ (78,477 yd³) per day with a BOD₅ of about 350 mg/L (2.9x10⁻³ lb/gal).

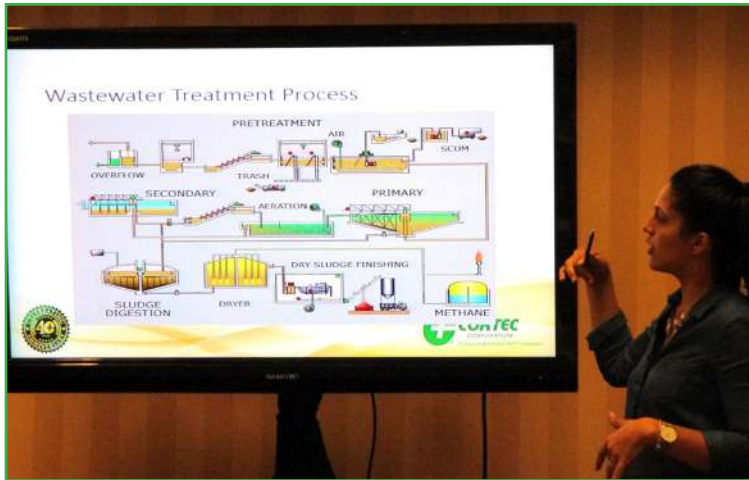
To aid in successful startup despite the difficult challenges of cold water temperatures (0 °C [32 °F] at the inlet and 5-12 °C [41-53.6 °F] at the outlet of the first lagoon) and rapid startup, BCP57CT was added in powder form. BCP57CT is specially formulated for low temperatures and was added at a shock dose of 60 kg/day (132 lb/day) for the first six days, and then gradually reduced to a maintenance dose of 8 kg/day (17.6 lb/day) until the end of winter. This, along with the addition of a truckload of sludge and the addition of nutrients, was an important ingredient in helping the pulp and paper mill meet contaminant discharge limits despite the odds against them.

http://www.bionetix-international.com/resources/casestudies/cs_bcp57ct.pdf





Bionetix® Out and About



- Wastewater Treatment

A number of Cortec® distributors seemed interested in including Bionetix® biological treatments in their sales toolbox alongside their Cortec® corrosion solutions. Some were already in the process of implementing Bionetix® products and were very excited about the results.

A few states over in Grand Rapids, Michigan, Tonya Decterov (Inside Sales Rep) and Mathias Benitez (R&D Chemist) were representing Bionetix® and Cortec® at the AWT 2017 Annual Convention and Exposition, held September 13th-16th.

September 2017 was a busy month for Bionetix® International, with three important events occurring the same week: ISSA/INTERCLEAN North America 2017, Cortec® Corporation's biannual World Sales Meeting, and the Annual Convention and Exposition of the Association of Water Technologies (AWT).

Starting the week, Bionetix® stood out as a very unique exhibitor at the 2017 ISSA/INTERCLEAN North America convention held September 11th-14th in Las Vegas, Nevada. Oscar Caceres (Inside Sales Rep) worked the booth all three days of the trade fair (joined Tuesday by Tim Taylor of Cortec®) and noted that visitors were especially drawn to the booth by the new display on BIOBLOC 22 for grease traps. *"That was one of the hits of the show,"* commented Caceres. *"And of course, as always our cleaning products are very well received."* There was also a marked international interest, with contacts made from 13 countries in addition to the United States. The show also doubled as training time for new Bionetix® distributors from Peru and the US.

In Saint Paul, Minnesota, the 40th Anniversary World Sales Meeting of Bionetix® International's parent company, Cortec® Corporation, took place September 13th-15th. Bionetix® Technical Sales Director, Diana Di Marco attended the event along with more than 150 distributors, reps, and affiliates from around the globe who came to network and learn more about corrosion control. The last day was devoted to seminar-style learning, and Di Marco made an important contribution by presenting three informative sessions on the following topics:

- Bioaugmentation and Biostimulation
- What's New at Bionetix®



The joint Cortec®/Bionetix® booth offered synergy between the two product lines. Those drawn to the booth to express their positive experiences with Cortec's Boiler Lizard® became interested in learning more about the natural biological products of Bionetix®. Conversely, visitors attracted to the samples of Bionetix® BIOBLOC 22 for grease trap and lift station maintenance were then able to find out about its anti-corrosion counterpart, CorrBlock™, for use in cooling water and wastewater systems.

Visitors to the booth also seemed to appreciate the technical knowledge of Decterov and Benitez regarding the workings of Bionetix® products. Benitez commented, *"It's fun because we had a chemical background, so I think people appreciated that we could explain exactly—not just sell—but explain exactly . . . the chemical and biological aspect of our products."*



Bionetix® in the Press

The natural solutions of Bionetix® International have appeared in several trade publications for the waste and septic treatment industries in the last six months.

ARTICLE

A special highlight was a full article featured as one of *Treatment Plant Operator's* "Online Exclusives" for December 2017. The article, entitled "Is It Time to Bug the System?" describes the benefit of using microorganisms to naturally boost secondary treatment operations at wastewater plants. It covers topics such as "Matching the microorganism to the contaminant," "Parameters for effective bioaugmentation," and "Short- and long-term treatment" (e.g., correcting systems with a microorganism shock dose, or reducing lagoon sludge in the long run with regular treatment). The full article is an informative read and can be viewed at the following link: http://www.tpomag.com/online_exclusives/2017/12/is_it_time_to_bug_the_system



FEATURED PRODUCTS

Macronutrients in the Analyst

The Summer 2017 issue of AWT's *The Analyst: The voice of the water treatment industry*, gave some important press to Bionetix® International's wastewater and soil bioremediation toolkit. In particular, the column highlighted Bionetix® Macro N/P as "a free-flowing powder with the optimal 5:1 nitrogen/phosphorus ratio for nourishing helpful bacteria in wastewater." Macro N/P supplies nitrogen and phosphorus, two nutrients that are often deficient in wastewater and soil, to stimulate the growth and metabolic activity of helpful microorgan-

isms that speed up the degradation of contaminants. Read more: https://www.cortecvci.com/new/whats_new/announcements/Analyst_Double_Feature.pdf



Odor Reducer in Portable Restroom Operator

Bionetix® International's biodegradable liquid odor eliminator Eco-Scent was featured in the July 2017 issue of *Portable Restroom Operator*. Eco-Scent contains a blend of natural surfactants, odor neutralizers, and bacterial cultures. It can be sprayed in the air or on hard surfaces to yield a lower concentration of odor-causing organic compounds and to leave behind a fresh, clean fragrance. Read more: https://www.cortecvci.com/whats_new/announcements/Ecoscent-PRO-July.pdf

Anaerobic Digester in Treatment Plant Operator

BCP12 was featured in the August 2017 issue of *Treatment Plant Operator*. The product focus highlights how BCP12 can digest sludge aerobically and anaerobically



and increase efficiency by breaking down proteins, carbohydrates, and lipids mainly through hydrolysis and acidogenesis. It can be applied to the primary digester based on volume. Read more: http://www.tpomag.com/editorial/2017/08/digesters_bionetix_international_bcp12

Anaerobic Digester in Pollution Equipment News

BCP12 was also featured in December by *Pollution Equipment News*. This blend of facultative bacteria can be used to reduce sludge in wastewater treatment, increase efficiency of overloaded systems, and reduce unpleasant odors. BCP12 can also be used to increase production of biogas, a renewable fuel that can be used for heating at a much lower cost than natural gas. Read more: <http://www.pollutionequipmentnews.com/anaerobic-digestion>

Septic System Booster in Onsite Installer

BIOBOOST Tablet IT was the first of several septic system bacteria treatments mentioned in a December 2017 “System Inspection and Maintenance” column for *Onsite Installer* magazine. The tablet contains a 1 trillion count bacteria blend along with nutrients and stimulants to naturally biodegrade paper, oils, greases, and waste. It is effective for nourishing and replenishing helpful bacteria in septic tanks after toxic shock. It also helps reduce odors and methane, prevent pipe and drain blockage, and decrease pumping frequency.

Webinars

Participating in a Bionetix® International webinar is a great way to stay informed on the technology of natural cleaning and bioremediation products!

Back on November 28th, Oscar Caceres gave an informative webinar on how direct fed microbials can be added to feed for poultry, swine, dairy cattle, and aquatic species to enhance their overall health and yield. More information about animal feed can be found here: <http://www.bionetix-international.com/products/animal.html>

On January 23rd, Caceres presented another webinar, this time on Bionetix® industrial cleaners. These industrial cleaners are typically very well received because of their environmentally friendly cleaning technology. More information about industrial cleaners can be found here: <http://www.bionetix-international.com/products/industrialinstitutional.html>

To learn more about Bionetix® animal feeds and industrial cleaners, contact Oscar Caceres at ocaceres@bionetix.ca. Check the Bionetix® website periodically for news on other upcoming webinars: <http://www.bionetix-international.com/>

An initial two-tablet shock dose should be followed by a maintenance dose of one tablet per month. Read more: https://www.cortecvci.com/whats_new/announcements/Bionetix-12-2017.pdf

Healthy Septic Tanks and Drains in Pumper

Bionetix® International’s Fizzy-Tab for maintaining healthy septic tanks and grease traps appeared in *Pumper* magazine’s list of bacteria-based septic treatments for its December 2017 issue. This multipurpose natural cleaner has a diverse makeup of microbiological organisms that reduce sludge buildup and encourage solid waste digestion. Throwing a Fizzy-Tab in a toilet or septic tank helps prevent drain blockage, reduce pumping frequency, and improve drain field percolation. Read more: https://www.cortecvci.com/whats_new/announcements/Bionetix-12-2017.pdf

In January 2018, *Pumper* also featured Bionetix® International’s Eco-Drain drain maintainer. The microorganisms and biological nutrients in this citrus-fragrance powder reduce accumulation of grease in sumps, drains, and traps. They also reduce odors, prevent emergency blockages, and lower grease disposal costs. For maximum effectiveness, Eco-Drain should be applied as the last step in an institution’s nightly closing routine. Read more: http://www.pumper.com/editorial/2018/01/cleaning_drainline_chemicals_bionetix_international_eco_drain_drain_maintai



\$100 Reward for Case Study Information

Bionetix® International is offering a \$100 gift card to any distributor who can provide photos and full details describing the successful use of a Bionetix® product in a real life application.

Please provide high resolution photos of at least 300 dpi and include details on what the problem was, how the product was dosed and applied, and what the result was. Data such as BOD/COD levels and other measurements are also helpful.

Please send all information to Diana Di Marco at ddmarco@bionetix.ca and write "Case Study Submission" in the email title. Submission acknowledges that Bionetix® and Cortec® Corporation have full permission to use photos and details in future marketing material without attribution.



Trade Shows

ISSA
INTERCLEAN AMSTERDAM 2018
May 15th-18th, 2018
Amsterdam, Netherlands
Booth #11.306
<http://www.issa.com>



21040 Rue Daoust
Sainte-Anne-de-Bellevue, Quebec, Canada, H9X 4C7
Phone (514) 457-2914, Fax (514) 457-3589
www.bionetix-international.com, E-mail: support@bionetix.ca

Created: 01/2018