Bionetix[®] Newsletter

York University Study Demonstrates Exciting Potential for Bionetix[®] Biogas Treatments

Even though biogas holds exciting opportunities as a renewable energy source, there are many factors that can go wrong in the course of biogas production. Bionetix[®] aims to counter challenges by boosting biogas efficiency through bioaugmentation and biostimulation technologies. York University in Toronto, Ontario, was asked to study a few of these products for their impact on biogas production and released their results at the end of 2020.[†]

One product tested by York University was a new Bionetix[®] formulation not yet named at the time. Now called BIOGAS BOOSTER 3™, this package of three micronutrients was designed by Bionetix[®] to boost methane production by meeting nutritional needs of microorganisms that do the work of anaerobic digestion. York University testing showed that the addition of BIOGAS BOOSTER 3™ did indeed increase biogas production in just one week, with expectations for continued growth in biogas production as time went on.

The study also addressed another problem for biogas production. While the most abundant biogas feedstock is lignocellulosic waste (e.g., plant matter, wood, agricultural waste), it is difficult to digest and releases inhibitors that keep microorganisms from growing to reach their full anaerobic digestion capacity. This in turn limits the amount of biogas produced. In regard to this challenge, York University testing suggested that BCP12[™], an existing Bionetix[®] bioaugmentation product, could potentially help by increasing the concentration of beneficial microorganisms even in the presence of lignocellulosic inhibitors. The report concluded, "Hence, BCP[12[™]] can be also employed as [a] supplement in media containing inhibitors to increase the microbial tolerance towards several toxic compounds."

Equip yourself with these and other exciting tools for the biogas industry by contacting us today: https://www.bionetix-international.com/contact-us/

Read more about BCP12[™] here: <u>https://www.cortecvci.com/whats_new/an-</u> nouncements/BCP12-York-University-Study-PR.pdf

Read more about BIOGAS BOOSTER 3[™] here: <u>https://www.cortecvci.com/whats</u> new/announcements/BIOGAS-BOOSTER-3-PR.pdf

†York University NSERC Engage Project Report, "Novel Bacterial Blend to Enhance Biomethanation of Municipal Sewage Sludge," 11 December 2020. Prepared by Prof. Brar's Team: Dr. Bikash Tiwari, Rahul Saini, and Mona Chaali.



July 2021



Experimental test setup at York University.



BIONETIX® NEWS

Bionetix® Joins Canadian Virtual Export Mission to Argentina

Bionetix[®] International was proud to be one of 10 "Ontario mission companies" participating in the April 12th-15th "Water and Wastewater Export Business Mission to Argentina" to connect Canadian cleantech companies with key players in Argentina. Oscar Caceres, Latin America Sales Representative, represented Bionetix[®] at the virtual trade mission, and found that the embassy did an excellent job screening contacts and facilitating discussion between Bionetix[®] and Argentinian parties interested in biological solutions for wastewater treatment. Oscar had already learned much about the regulations and potential obstacles in the Argentinian market through a March 1st webinar hosted by the Ontario Trade Commissioner Service. However, he came away from the events seeing great potential for Bionetix[®] technology in Argentina and strategizing new ways to overcome barriers through the use of Bionetix[®] concentrates. If you work in Argentina or



other surrounding Latin America regions, be sure to contact Oscar with your questions: ocaceres@bionetix.ca.

Bionetix® Passes ISO 9001 Audit with No Non-Conformities



Quality Management System audit time was a little different for Bionetix[®] International this year due to COVID. Instead of Michel Morin of the SGS accrediting agency traveling onsite to our biotechnology offices near Montreal, Canada, he performed the ISO 9001:2015 quality audit remotely via Zoom video conferencing on January 22nd, 2021. The most important thing that did not change was that Bionetix[®] again passed the quality management system audit with no non-conformities! Three audit report highlights included Bionetix[®] meeting its goal of no product returns in 2020, slightly surpassing its goal on average ratings for its 2020 customer satisfaction survey, and chronicling 10 new and revised products in progress.





RESOURCE NEWS

Refreshed Product Data Sheets!



We have recently revised five of our product data sheets with updated information and a fresh, clean look! Download and print these product data sheets at any time from our website or simply send an email link to your customer. As evidence of the wide array of end uses for Bionetix[®] biologicals, these products cover everything from the aquaculture industry to cleaning, odor control, and wastewater maintenance. Take a closer look below.

AQUA-FEED^m is an all-natural feed additive specially formulated for the aquaculture industry to promote increased weight gain of shrimp, fish, and other aquatic species. It is rich in β -glucans, mannan-oligosaccharides (MOS), beneficial probiotics, and other key vitamins, nutrients, and minerals to support overall species' health. Get the PDS here: <u>https://www.bionetix-international.com/wp-content/uploads/2021/05/AQUAFEED_PDS_EN_05-05-21.pdf</u>

ABC 1000[™] is a high concentrate, multispore bacterial powder ready to blend with a wide range of organic diluents in order to formulate a broad spectrum of end-use products. This non-pathogenic bacillus spore blend is effective in numerous applications where it is necessary to degrade a variety of complex organics and reduce BOD, suspended solids, organic sludge, odor, and FOG (fats, oils, greases). Get the PDS here: <u>https://www.bionetix-international.com/wp-content/uploads/2019/11/</u><u>ABC1000_PDS_EN_7-6-21.pdf</u>

ABC 1200[™] is a multipurpose blend of vegetative and spore microorganisms effective in degrading many types of industrial and municipal waste. This concentrate is applicable for numerous end use formulations to degrade organic waste in food, chemical, petroleum, petrochemical, and other industries. Get the PDS here: <u>https://www.bionetix-international.com/wp-content/uploads/2019/11/ABC1200_PDS_EN_07-06-21.pdf</u>

ABC 4000^M is a multiple spore blend concentrate liquid ready for use as the base culture in formulating a wide range of biological cleaners. Non-pathogenic bacteria in ABC 4000^M work to solubilize grease, fats, oils, starches, proteins, and cellulose. ABC 4000^M digests these organic waste materials and allows them to be rinsed away. The concentrate can also be used for odor control. Get the PDS here: <u>https://www.bionetix-international.com/wp-content/uploads/2019/11/ABC4000_PDS_EN_07-06-21.pdf</u>

ABC 6000[™] is a blend of bacteria and free enzymes for use as the base culture in formulating a wide range of biological cleaning products. ABC 6000[™] combines non-pathogenic bacteria with protease, amylase, cellulase, and lipase enzymes to improve the release and removal of soil and odor-containing compounds found in organic waste. Get the PDS here: <u>https://</u>www.bionetix-international.com/wp-content/uploads/2021/07/ABC6000_PDS_EN_07-07-21.pdf_

New Case Histories

Case histories are a great way to be inspired and share positive results with potential customers. Our latest two releases feature microorganisms at work to clean up contaminated soil and oil-stained concrete.

Soil Bioremediation Test

An engineering company decided to test Bionetix[®] bioremediation on soil, but only applied one of the three recommended doses of BCP35[™] and BIOSURF[™]. Even so, the amount of measured petroleum hydrocarbons (PHC) and polycyclic aromatic hydrocarbons (PAH) dropped by more than 70% in only 20 days. Total concentration of petroleum hydrocarbons was slightly elevated on day 43 (still more than 70% below initial measurements), but this could be due to bioremediation breaking longer, unmeasured hydrocarbons (i.e., chains longer than C34) into detectable smaller chains. In any case, the usually persistent and difficult to decompose PAH continued to drop during this time as a success indicator. Log in to read the full case history here: <u>https://www.bionetix-international.com/</u> wp-content/uploads/Restricted_Case_Histories/ch036.pdf



Restaurant Walkway Cleanup



Building management asked a restaurant in New Brunswick to clean up oil stains on the concrete slab outside the back door leading to the dumpster. The restaurant wanted a cleaner that was not abrasive and would not change the concrete appearance. Since the stains were mainly from organic and food waste, they applied undiluted HYGIEA2600[™], a biological cleaning product specifically designed for these kinds of stains. They activated the microorganisms with a mist of water, then rinsed the concrete off a day later. The cleaning was very effective and the customer was very happy with the results. Log in to read the full case history here: https://www.bionetix-international.com/wpcontent/uploads/Restricted_Case_Histories/ch035.pdf

UPCOMING EVENTS



NOVEMBER 15 - 18 | LAS VEGAS, NV LAS VEGAS CONVENTION CENTER ISSA North American Show 2021 Exhibits: November 16th-18th Las Vegas Convention Center Las Vegas, NV Booth #W-6609 https://www.issashow.com



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