



Pressemitteilung

Press release · Communiqué de presse

Vechta, March 2017

Research Project: Tracking Down Inhibitors

WELTEC BIOPOWER Develops Innovative Analysis Procedure for Biogas Substrates

Together with renowned partners, the biological department of biogas specialist WELTEC BIOPOWER in Vechta, Germany, is developing a quick test for identifying inhibitors in biogas substrates. Input mass may contain substances that prevent efficient biogas production. For example, a small amount of mould is sufficient to cause such an adverse effect in silage. Ammonium, copper, zinc, drugs and disinfectants are often identified as inhibitors in slurry and manure. Even traces of these substances are detrimental to the bacteria in the digester and thus counterproductive to the digestion process. Therefore, it is absolutely necessary to identify such inhibitors before transferring the substances into the digester.

Since December 2016, WELTEC is involved in a research project to establish a new procedure that will solve this problem. The project is subsidised by the German Federal Ministry of Food and Agriculture (BMEL) via Fachagentur Nachwachsende Rohstoffe e.V. (Agency for renewable resources). In collaboration with HAWK, the Göttingen University of Applied Sciences and Art, WELTEC is developing a quick, reliable and inexpensive procedure for identifying inhibitors in input substances.

For this, various feedstocks are first examined in the WELTEC lab in Vechta and at HAWK in Göttingen with the help of the Ankom system. This system delivers precise information on the gas production. Moreover, the change of the acid spectrum is monitored while deliberately adding inhibitors. The resulting target curves will henceforth be compared with the gas production curves of substrates. This comparison is to reveal whether the substrate contains any inhibitors. Previously, the aerobic four-plate inhibitor test used to be employed for identifying inhibitors. Actually, this test is designed for the dairy industry and does not reflect the conditions in the digester. Therefore, the test results are not as authoritative as required. With the new anaerobic procedure, results are to be available after three days. In this way, biogas plant operators will be able to determine the quality of their input materials precisely, speedily and inexpensively.

„The need and demand are on hand. Currently, there is no quick and reliable way to identify such potential process disruptions, though this would be vital to avoid unscheduled downtimes of biogas plants“, explains Sabine Lampe, graduate biologist and supervisor of the research project at WELTEC BIOPOWER. This is what made WELTEC and HAWK initiate the project, in which the Fraunhofer UMSICHT Institute in Oberhausen and Berlin-based analytics specialist aokin are also involved.

„Based on this innovative procedure, biogas plant operators will be able to decide faster whether to buy offered silage or liquid manure or whether to use a certain batch of their own slurry“, explains Sabine Lampe. She adds that it would also be possible for substrate providers to use this quick test to furnish evidence of the quality of their product.



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Organic energy worldwide

For this to be made possible, a quick test needs to be developed by experienced specialists. WELTEC BIOPOWER has run its lab in Vechta since 2009. In Vechta, the biologists and lab team can conduct all important analyses and regularly examine samples from more than 300 digesters. The biogas plant manufacturer is thus well equipped to assist plant operators in their daily operations, making sure that the biogas production remains on the success track.

Pictures/Captions



© Photo Hölzen - WELTEC BIOPOWER has run its lab in Vechta since 2009. In Vechta, the biologists and lab team can conduct all important analyses and regularly examine samples from more than 300 digesters.



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Company Portrait

WELTEC BIOPOWER GmbH is one of the world's leading enterprises in the field of stainless-steel biogas plant construction. The company has planned, developed and built anaerobic digestion plants since 2001. Today, the medium-sized company has about 80 employees at the headquarters in Vechta, Germany, and has established more than 300 energy plants in 25 countries worldwide. The global distribution and service network spans six continents. The range of customers includes businesses from the agriculture, food, waste and wastewater industries.

The strength of WELTEC BIOPOWER lies in custom-tailored design and technically mature solutions for projects up to 10 megawatt capacity. In this context, the high proportion of internally developed components is a key success factor. The company also owes its leading edge to the use of stainless steel. This enables the input of a diverse range of feedstocks, a fast and economic assembly and a consistently high quality standard – regardless of the location.

After a biogas plant goes live, WELTEC BIOPOWER offers additional support through its experienced mechanical and biological service team. 24/7 availability and an in-house lab contribute significantly to the efficiency of the plant. In addition, since 2008 the company has ensured certified internal quality and environmental management in accordance with the ISO 9001 and 14001 standards.

Nordmethan, a subsidiary company of WELTEC BIOPOWER, addresses another business area: The operation of biomethane plants and the provision of heat through energy contracting. In this way, the WELTEC Group covers the entire value chain of energy generation with biogas and biomethane from the plant construction to the plant operation.

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Ann Börries
Marketing
Phone: +49 4441/99978-220
Email: presse@weltec-biopower.de