



WE CAN DO MORE THAN CORN.

**YOUR COMPETENCE CENTER FOR COMPLEX
LIGNIN-CONTAINING FEEDSTOCKS**



 **BMT System**[®]
Naturally engineered efficiency



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1 | ABOUT THE BMT-SYSTEM

With the BMT-System®, residual materials containing lignin are made available as an energy source for conventional biogas plants. For this purpose, a mixture (brand name: LignoX®) of natural, harmless microorganisms is added to a fermentation digestate of the biogas plant. These two components are heated together through a temperature cascade to defined reaction temperatures.

The activated hot slurry breaks down the lignin layers in the substrates. Transferred to the digester, these previously unusable carbohydrates significantly increase the gas yield of the biogas plant. The BMT-System® is supplied as a ready-to-connect container plant.



Biological processes cause decomposition of lignocellulose



Mechanical processes act with force on the fiber structure



Thermocatalysis via temperature cascade



sustainable



innovative



efficient

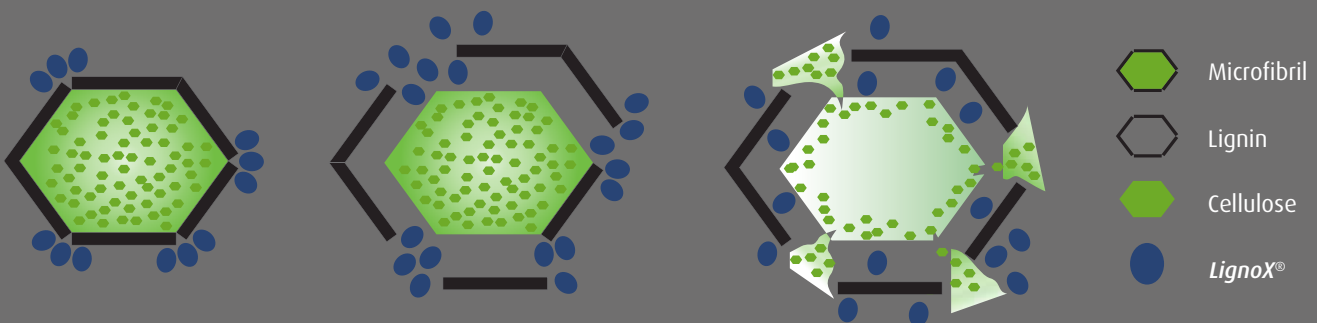


increased performance

EFFECTS OF LIGNOX®

LignoX® is a symbiotic mixture of harmless, natural, highly efficient microorganisms of biosafety risk class 1, plant-based prebiotic ingredients and enzymes. In combination with the BMT-System®, LignoX® promotes highly efficient conversion processes of substrate components that are

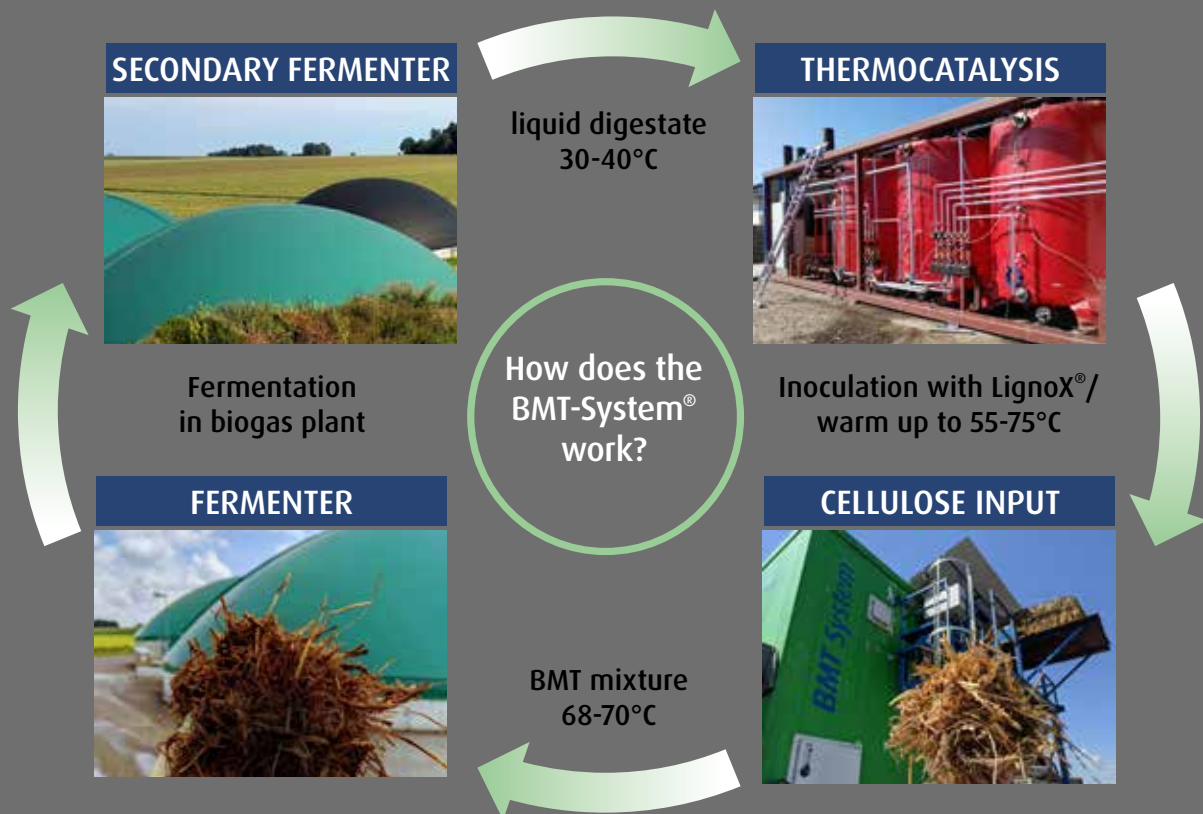
difficult to degrade, such as lignocellulose. The highly developed composition of LignoX® specifically enhances and inhibits the growth and activity of selected bacterial species, thus significantly increasing the methane yield.



2 | ADVANTAGES

- Digestion of lignin-containing residual materials (e.g. horse manure)
- Reduction of feedstock costs
- Reactivation of digestate biomass
- Decrease of the digester feed input
- Increase of plant capacity
- Identification and removal of impurities
- Decrease of the effective residence time to 60-75 days
- Payback period for BMT-System® is less than 5 years
- No formation of floating sludge blankets

2.1 MODE OF ACTION



3 | POSSIBLE INPUT MATERIALS

LIGNOCELLULOSIC RESIDUALS WITHOUT REQUIREMENTS ACCORDING TO GERMAN BioAbfV § 9a

- AGRICULTURAL RESIDUAL MATERIALS
- FORESTY RESIDUALS
- ANIMAL EXCREMENTS
- RESIDUALS FROM CROP CULTIVATION
- DRAFF AND POMACE
- BARK- AND CORK RESIDUALS
- SAW DUST
- HORSE MANURE
- HOUSEHOLD COMPOST



4 | ANALYTIC SUPPORT BY IN-HOUSE LABORATORY

SUBSTRATE TESTS AND PROCESS OPTIMIZATION WITH SMALL-SCALE IN-HOUSE PILOT PLANT

We start with a substrate analysis with our in-house laboratory Uphoff Lab and a trial BMT-run in our small-scale pilot plant. In this manner, we are able to fit the process development to the requirements of individual biogas plants and lignin feedstocks.

EVERY BMT-SYSTEM IS DESIGNED TO FIT THE REQUIREMENTS OF INDIVIDUAL SUBSTRATES.



DATA FROM THE REFERENCE PLANT

BIOGAS PLANT BIBURG



The reference plant (500 kW electric) in Upper Bavaria uses apart from the primary feedstock corn silage 1.8-3.5 t wheat straw (85 % dry matter) with inoculated liquid digestate (mixture ratio 1:1). The lignin digestion process requires per ton of BMT mixture approx. 1-2 kg of the microbial additive LignoX[®]. The heat for the thermic processes is provided by the heating water (85 °C) of the CHP (combined heat and power) unit. The on-site power requirements are approx. 6 % of the biogas plant power output. In the reference plant , 1 ton of straw substitutes 2.8-3.2 tons corn silage.

Please feel free to arrange a personal appointment
at our company or with our sales team!

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AWARDS

FOR THE BMT-SYSTEM

WIR SIND SIEGER DES
BIOGAS
Innovationspreis
der deutschen Landwirtschaft
2017
FÜR BIOMETHAN
UND BIOTREIBSTOFFE AUS STROH
UND ANDEREN LIGNINHALTIGEN EINSATZSTOFFEN

