



Pressemitteilung

Press release · Communiqué de presse

Vechta, September 2016

Liquid Manure Volume Reduced by Half

Efficient Slurry and Digestate Processing with „Kumac“ from WELTEC

German biogas specialist WELTEC BIOPOWER now offers a proven solution for the processing of slurry and digestate for livestock owners and biogas plant operators. The fully automated processing system „Kumac“ reduces the liquid manure and digestate volume by 50 percent. In a four-stage procedure, clear water, liquid fertiliser concentrate and valuable solid matter are extracted from the source material.

Regions characterised by agriculture are faced with a high accumulation of slurry and digestate, while the areas suitable for spreading the nutrients are limited. In the future, restrictive laws will impose even stricter regulations for handling the nutrient surplus. Against this background, operators are finding it more and more costly to store and dispose of liquid manure and digestate. WELTEC BIOPOWER's Kumac processing system represents a sustainable, economic solution for reducing the quantity, thereby improving the transportability and volume of the nutrient surplus.

The functional principle is based on several tried and tested sub-processes, which, in combination with custom developments, are highly effective within the framework of an overall process. To separate the solid and liquid matter in the first step, flocculants are added to the liquid manure and digestate. In this way, certain nutrients are fixed, and it becomes easier to separate the solid matter from the liquid phase with the belt filter press. Moreover, the additives alleviate the odour emissions. The drained solid matter has a dry matter content of about 30 percent and can be used as fertiliser, compost or litter or, in the case of slurry, as biogas feedstock.

Subsequently, the remaining liquid phase is passed through a flotation tank in order to separate further small particles and suspended matter. Any remaining solid particles are removed by a fine filter. In the next step, the filtrate traverses a three-stage reverse osmosis process in order to concentrate salts and nutrients. The resulting liquid fertiliser is rich in nitrogen and merely accounts for one quarter of the original volume. The major portion of the treatment products consists of clear water (50 percent), which can be introduced to the water cycle after being processed in the ion exchanger.

The scalable modular system can be used from an amount of 50,000 t of slurry or digestate a year. If the processing needs increase, a combination of several Kumac lines can easily be implemented. However, Kumac processing also excels with its high level of automation, reducing the need for manpower to a minimum. Efficient use of the final products – half of which consist of drainage water, a quarter of useful solid matter and a quarter of valuable nutrient concentrate – increases the overall efficiency of the Kumac treatment system.



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Organic energy worldwide

Kumac has already been successfully used at agricultural plants and large biogas plants in Belgium and the Netherlands for almost ten years. Apart from the high degree of treatment, operators are pleased with the reliable, low-maintenance technology and the low energy consumption. "Another reason for the positive feedback is that meanwhile, we have further developed the procedure in accordance with operator requirements", explains Jens Albartus, Director of WELTEC. The system's good reputation is backed by the investigation results of two renowned institutions: Both the Dutch Wageningen University and the German Chamber of Agriculture of Lower Saxony confirm the high functionality and excellent mass balance of the Kumac treatment system.

Thus, WELTEC BIOPOWER's processing concept is equally suitable for users from different areas, such as pig and cattle owners and biogas plant operators.

Benefits at a glance:

- Tried and tested, mature technology
- Improved transportability and lower distribution costs through nutrient concentration
- Compliance with restrictive fertiliser and emission regulations at reasonable cost
- Substantial reduction of the storage volume for slurry and digestate
- Half of the input turns into clear, dischargeable water
- Solid phase can be used as fertiliser, litter, biogas substrate and compost
- Suitable for liquid manure and digestate
- Scalable thanks to modular structure
- Fully automated operation.

For further information, visit WELTEC BIOPOWER at the Energy Decentral / EuroTier (15 to 18 November 2016, Hall 25, Stand D 11).

Pictures/Captions



In a four-stage procedure, clear water, liquid fertiliser concentrate and valuable solid matter are extracted from the source material.



Half of the input turns into clear, dischargeable water.

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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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