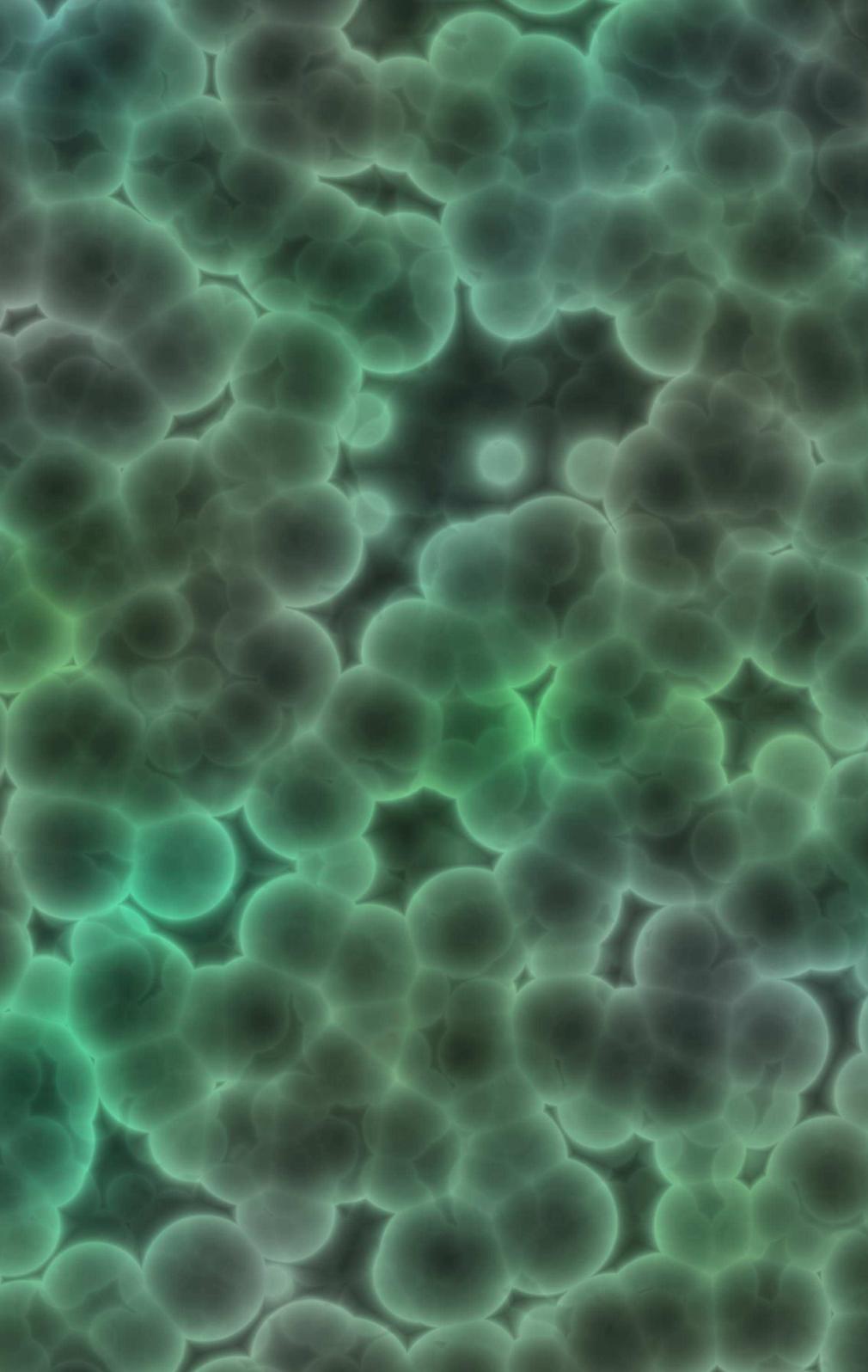


BIOKATGAS



Increase the efficiency of your biogas plant



What is Bio-Kat-Gas?

Bio-Kat-Gas is a plant-based, completely biodegradable product made from a special mixture of catalysts with stimulants.

These stimulate the microorganisms in the fermenter, similar to hormones, so that the biomass in the biogas plant is better digested.

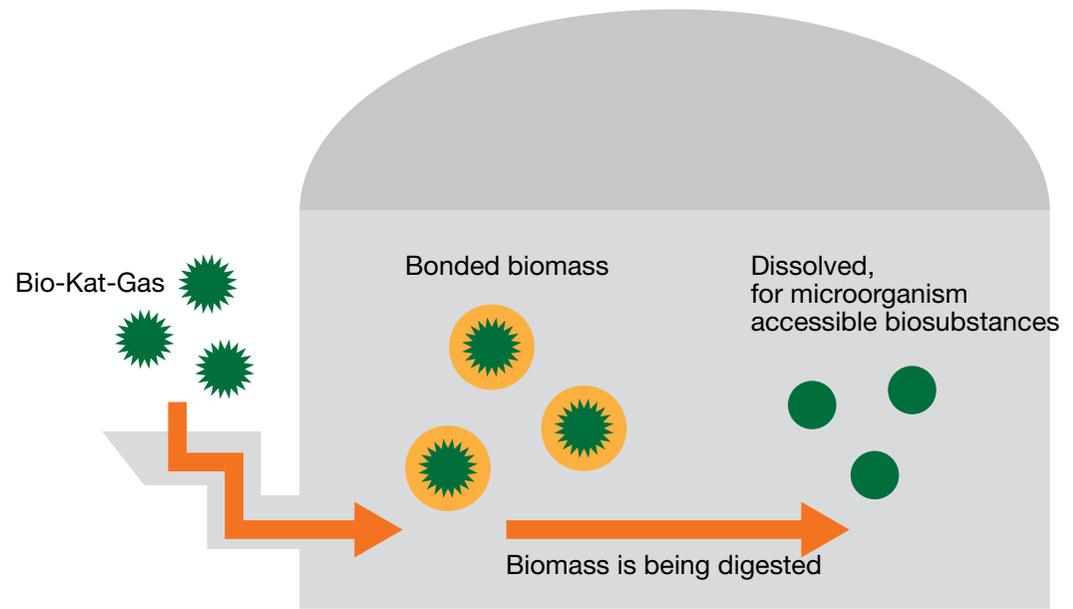
That way the effectiveness of the plant increases up to 20%.

Bio-Kat-Gas is a new active agent that shows significantly better results than known products consisting of enzyme mixtures.

How does Bio-Kat-Gas work?

Microorganisms can only degrade that which is dissolved in the water, that being primarily sugar and proteins. However, starches, celluloses and fats cannot be digested that easily and therefore first must be converted into substances that are soluble in water.

This is where Bio-Kat-Gas comes into play: these substances are made available and can be accessed quicker for the biodegradation.



The effects:

- For consistent performance of the plant approx. 20% less substrate input is necessary.
- The viscosity of the biomass increases, and debris, scrap, floating and sinking layers as well as fats are released. This reduces the deterioration of the system considerably.
- Significantly less organic solids remain in the digestate, and the formation of gas stabilizes.
- The gas quality improves by a 2-3% increase in methane formation.

How is Bio-Kat-Gas applied successfully?

To achieve the mentioned effects in your biogas plant, no further technical amendments are necessary. However, it is essential that equilibrium conditions in the system are given so that Bio-Kat-Gas can exert its full effect.

Important chemical substances that enable and support the process of methane formation are the bioavailable trace elements. A deficiency or absence of these trace elements lead to deficiency symptoms or even the death of the microorganisms.

Optimal equilibrium conditions for optimal performance enhancement

According to experience, almost every biogas plant has deficiencies of trace elements, harming its performance significantly. As a result, trace elements should be added daily with or without the use of Bio-Kat-Gas to ensure optimum operation of the plant.

If you choose the Bio-Kat-Gas, we recommend that you perform an analysis of bioavailable trace elements, as soon as it begins to show its effects (after 8 to 10 days).



Our scientific team of experts supports your optimization of your biogas plant by:

- Comprehensive advice on the first vaccination of our product in your plant
- Analysis of bioavailable trace elements and the effects of Bio-Kat-Gas 8 - 10 days after its use
- By phone and personal consultation on-site

Success with every customer

Bio-Kat-Gas has already convinced more than 30 plant operators of its effectiveness, although the product has only been available on the market since mid-2010. Virtually all customers were already using an enzyme preparation to improve performance of their plant, but still, Bio-Kat-Gas was capable of increasing the efficiency of any biogas plant sustainably.

On-road test of Bio-Kat-Gas in Hamminkeln/North Rhine-Westphalia

On the basis of a 40-day trial at a renewable resource-farmyard manure plant (500kwh), we found convincing test results. In this case an enzyme preparation was also used earlier and was later replaced by Bio-Kat-Gas.

Before, the input of the plant was 30 tons of corn silage and 20 tons of farmyard manure per day. 1ml Bio-Kat-Gas (= 50ml) and 1l trace elements were added per ton of substrate.

40 days later it was determined...

a saving of 6 tons of corn silage per day by a constant and optimized gas performance, 3% more methane concentration and a cleansing effect on the biogas plant.

This result was also confirmed in the following months.

Price per ml of Bio-Kat-Gas: 1,69

Price per l of trace elements: 10,80



Save acreage

In Hamminkeln, thanks to Bio-Kat-Gas it was possible to use just 24 tons instead of the previous 30 tons of corn silage per day to fully utilize the biogas plant. Thus 6 tons per day (2190 tons per annum) can be saved. Over the year it means that only about 8760 tons of corn instead of the previous 10950 tons need to be used for a 500kwh system. This results in a saving of 20% substrate (see right figure)!

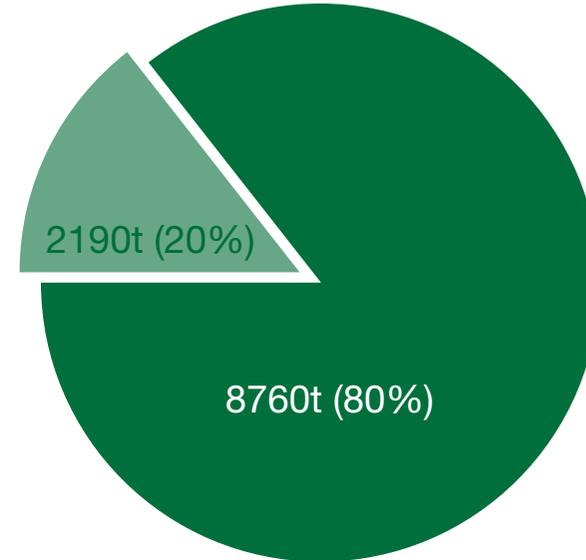
Reduce costs

Assuming an average price of corn silage at approx. 30 per ton, we were able to save 180 per day at our pilot plant. Since 50 ml of Bio-Kat-Gas and 1l trace elements were added per day, costs of 95.30 had to be deducted. This led to a saving of 84.70. Thus the substrate costs could be reduced by 10% through the Bio-Kat-Gas equating approx. 30,900 per year (see right figure)!

Improve substrate utilization

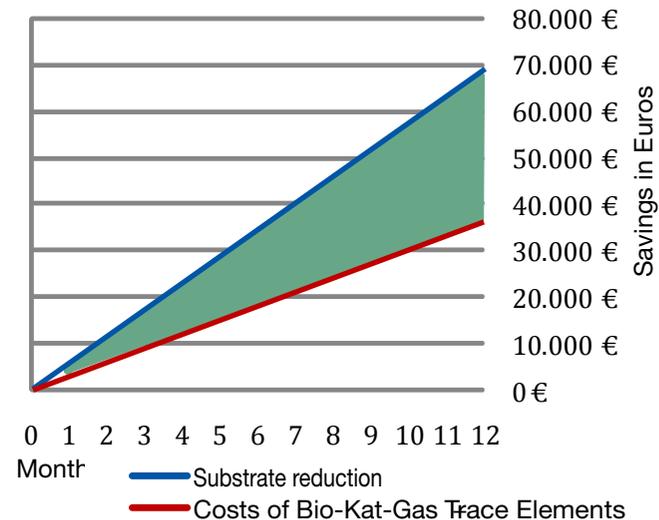
The Bio-Kat-Gas has two additional advantages: First, the viscosity of the digestate is increased so that it can be spread easier, and secondly, the amount of the digestate is reduced by 20% due to the saving of substrate. In fact the digestate of the plant in Hamminkeln was reduced accordingly by 3 tons per day. Following the Biogas Forum Bavaria the spread per ton of digestate costs approx. 4. Thus, costs of 4,300 can be saved annually by the reduction of digestate.

Corn usage per year (previous 10950 t)



Saving of substrate approx. 20% !

Saving per year by Bio-Kat-Gas



Cost reduction of approx. 10% through less substrate utilization!

Bio-Kat-Gas is better than the competitors

Based on our previous experience and the proven effectiveness of Bio-Kat-Gas, we can keep the following promise:

We contractually guarantee that you will achieve a higher profit by our method than by any other currently in practice situated process on a biological - organic basis.

This also applies to the follow-up costs.

Our leap of faith

You will receive an introductory discount of 50% of the Bio-Kat-Gas, including scientific initial consultation for your personal 40-day trial.

This way you can convince yourself of the effectiveness of our technology.

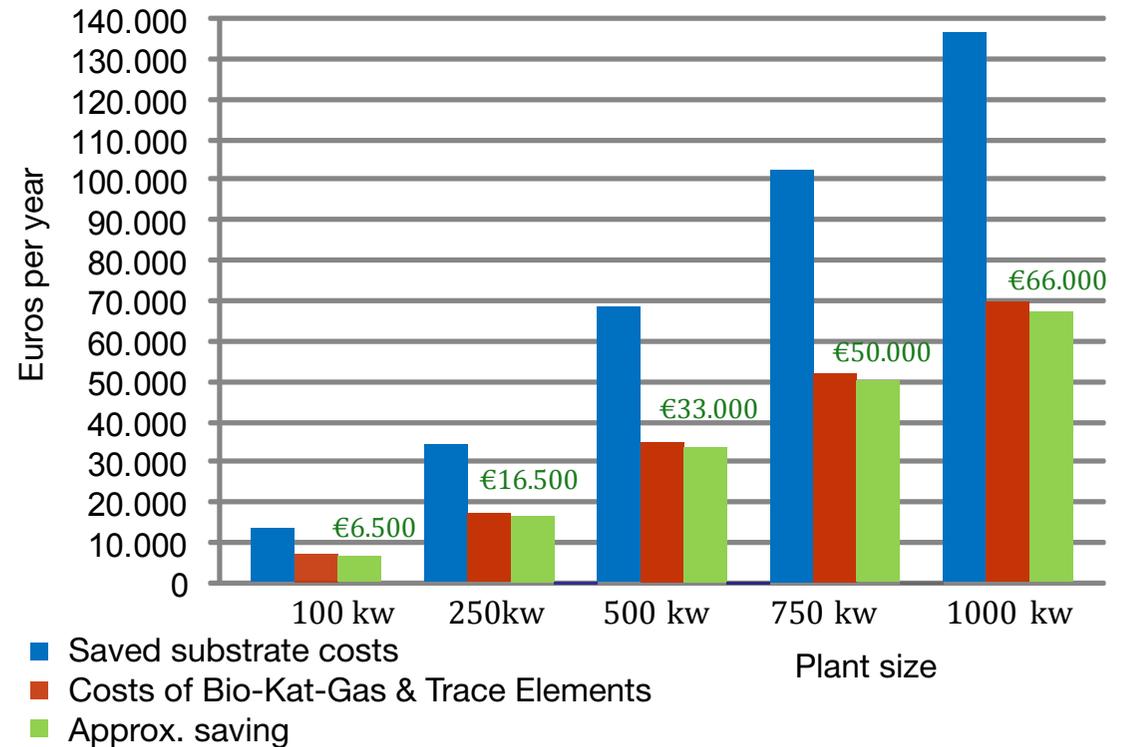
Price per ml of Bio-Kat-Gas:

1.69 plus VAT

Price per l of trace elements:

10.80 plus VAT

Annual potential savings by Bio-Kat-Gas at different plant sizes





Please contact us if we have sparked your interest.

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