# Less foam.
# More gas.
# Lower costs.

KEBO Specialty Chemicals

**How KEBOSPUM BWO optimizes biogas production with the processing of sugar beets**

## A PRACTICAL EXPERIENCE REPORT FOR DECISION MAKERS FROM TECHNOLOGY AND PURCHASING

In industrial biogas plants, even the slightest disruption can have major consequences: foaming. This business study shows how the right defoamer solution not only reduces costs but also ensures process stability and prevents energy losses.

**up to -90%**
Consumption

**+20%**
Availability

**100%**
Performance

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# The challenge
**comes from the process itself.**

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## Foam – the hidden process destroyer in biogas plants with sugary substrates

Biogas plants that use silage or sugar-rich substrates, such as sugar beet, produce high levels of organic matter and $CO_2$. This is a critical combination for foam formation. The secondary fermenter, which is the decanter liquid, and the pH correction section are particularly affected.

### Typical problems

- **Foam caps block sensors**
- **The gas yield drops → methane binding in foam**
- **Cleaning takes a lot of time and money**
- **Rapeseed oil as a defoamer (2,000 ppm) is inefficient, especially at slightly acidic pH levels**

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# The solution

**works where others fail.**

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## Systematically against foam – with a precision, plant-based, and reliable process

KEBOSPUM BWO is a plant oil-based formulation with additional highly effective active ingredients and stable performance even at low pH values. It was specifically developed for industrial processes involving high levels of foam, such as those that occur during the fermentation of sugar beets.

### Its effect at a glance

- **Knock-down effect: Immediate foam control**
- **Hold-down effect: Long-lasting stabilization**
- **Compatible with fermenters: Does not affect microbiology**
- **Metering: Only 50–200 ppm required instead of 2,000 ppm with conventional vegetable oils**

### Comparison: Rapeseed oil vs. KEBOSPUM BWO

| | Rapeseed oil | KEBOSPUM BWO |
|---|---|---|
| Metering | 2,000 ppm | 50–200 ppm |
| Effect in acidic pH | Weak | Stable |
| Long-term effect | No | Yes (Hold-down) |

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# Practical experience

## speaks for itself.

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## 25,000 tons of sugar beets – and a stable biogas process

As part of a sugar beet campaign, an industrial biogas plant processed 25,000 tons of silage. The result: massive foam formation in the secondary fermenter as well as during the pH correction of the decanter liquid.
The previously used solution—rapeseed oil with approximately 2,000 ppm—was ineffective under acidic conditions.

**After switching to KEBOSPUM BWO (50–200 ppm), the following results were observed within 10 days:**

- **Consumption reduced by over 50%**
- **No more foam caps**
- **pH regulation became possible without foaming**
- **Stable process run without overflow**

The stabilization of the fermenter had positive effects on the overall process:
In digestate treatment, supplementary products, such as **KEBOSPLEX SC** and **LITHSOLVENT 721**, significantly extended the cleaning intervals.
This increased plant availability while also reducing costs.

"Without the right defoamer, the process doesn't work. KEBOSPUM BWO has given us back control."

Quotation of the plant operator

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# The numbers
## demonstrate the difference.

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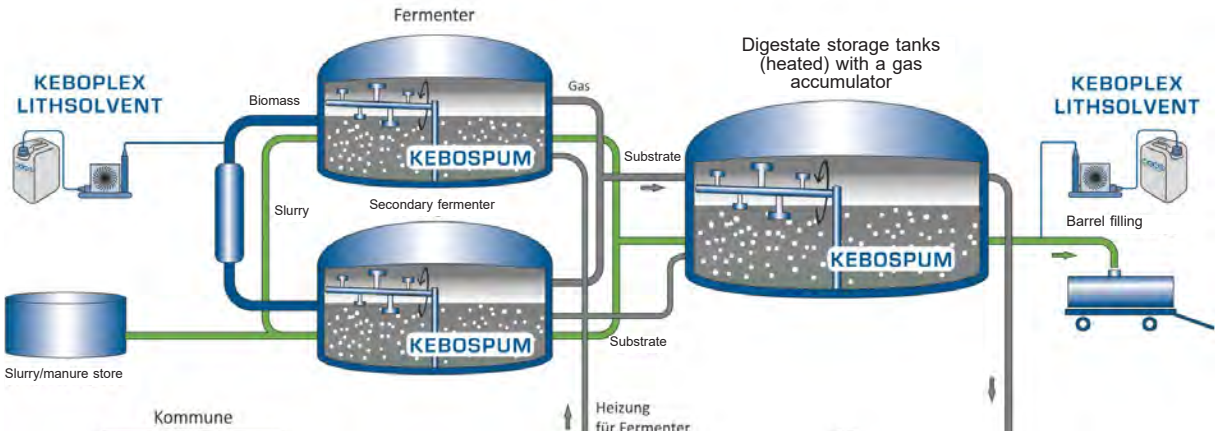


## Process stabilization made measurable

The following overview shows the results of the conversion based on real operating data from a biogas plant during the processing of sugar beet silage.

| | Rapeseed oil | KEBO System | Improvement |
|---|---|---|---|
| Defoamer consumption | 2,000 ppm | 50–200 ppm | **up to -90%** |
| Cleaning cycles | every 2 weeks | every 4 weeks | **-50% effort** |
| Plant availability | interference | stable | **+20% runtime** |

# Conclusion

## Practice meets impact and leads to stable processes

The use of KEBOSPUM BWO has shown that, by stabilizing biological processes in a targeted manner, we can reduce consumption as well as regain control, security, and predictability.

A process chain is created when coordinated cleaning products are used, even with complex substrates such as sugar beets.

**KEBO stands for partnership-based advice and solutions that have been proven effective.**

We think in an application- and solution-oriented manner, regardless of whether it's defoamers, cleaning, or the entire system process. Would you like to see what this could look like in your plant? **Let's talk about it!**

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