



Thise Mejeri's new compact and environment-friendly wastewater treatment solution from Grundfos BioBooster based on a combination of PBR and MBR technology.

Green thinking from raw materials to wastewater treatment at Denmark's largest organic dairy

Thise Mejeri is Denmark's largest organic dairy company. It is a dairy cooperative consisting of 90 farmers with a total annual production of 85 mio kg organic milk. The primary dairy products are milk, butter, cheese, and yoghurt which are distributed to consumers in Denmark and abroad through major super-market chains.

Thise is not only renowned for its ability to develop new products and taste variants that meet and exceed market trends and consumer expectations, but also for its high ethical standards and environment-friendly thinking in the entire value chain – from raw materials and production to disposal of by-products and wastewater treatment. In 2007, Thise started the search for green and future-proof wastewater treatment technology that could accommodate the increasing wastewater volumes deriving from several incremental expansions of the organic production.

The answer was an industrial biological wastewater treatment solution from Grundfos BioBooster, which was designed and installed within a short time span due to the pre-fabricated components.

Grundfos BioBooster provided

- Complete turnkey biological wastewater pre-treatment solution based on the client's existing plant
- Solution prepared for future expansions, full treatment, and water reuse
- Compact, environment-friendly, and odour-free treatment process



The situation

This Mejeri uses a unique lagoon system (water reservoir) for wastewater treatment comprising a preliminary lagoon and a main lagoon. Since the lagoons are open-air and located in a residential area, the elimination of odour emissions from the wastewater plant constituted a prime concern for Thise. Also, the lagoons were reaching their capacity limit – a problem that needed to be solved urgently due to the continuous growth in the organic production.

The Grundfos BioBooster solution

Grundfos BioBooster incorporated and enhanced Thise Mejeri’s pre-existing wastewater treatment setup, and provided the needed extra treatment capacity with a compact and odour-free solution prepared for future expansion, full wastewater treatment, and water reuse. The solution is based on two components: The PBR (pressurised biofilm reactor) used for pre-treatment of the wastewater before it is drained to the lagoons, and the MBR (membrane biological reactor) used for full treatment of partial streams of the wastewater, and which allows for direct discharge to receiving waters and water reuse at a later stage.

The outcome

The Grundfos BioBooster solution solved Thise Mejeri’s capacity problems arising out of production expansions, and provided an odour-free treatment process for the benefit of the environment and the surrounding neighbours.

Thise Mejeri has gained a future-proof solution that can be expanded gradually according to the growth in production without heavy up-front investments in an over-dimensioned treatment plant. Now they can continue to fully utilise the inherent value of their wastewater, protect the environment from odour nuisance and disposal of damaging wastewater by-products, and not least document wastewater characteristics/composition to the authorities.



The pre-treatment container consists of 12 PBR reactors and allocated space for additional reactors, which can be added when the need for extra capacity arises.



A view of the Grundfos BioBooster plant including existing wastewater treatment setup and lagoons.

Customer statement

“Being an organic dairy means that we always have to think ahead and seek new and innovative technologies. And we approach our wastewater in much the same way. Choosing Grundfos BioBooster was simple common sense to us. Due to the simplicity of the system, we didn’t need a permit from the municipality, and we could easily get an overview of the installation very early on in the process. The quick setup, the ability to adjust to capacity changes, and above all to discharge the treated wastewater with a good conscience are all variables that contribute to our fruitful partnership with Grundfos BioBooster. In my experience, there are always positive outcomes of a project you believe in. We believe in Grundfos BioBooster”.

Poul J. Pedersen, Managing Director, Thise Mejeri

The Grundfos BioBooster solution

- > Flow: 200 m³/day
- > Influent: 3500 mg/l COD total
- > Effluent: 880 mg/l COD
- > Capacity: 540 kg COD removed/day
- > PBR: 12 reactors
- > MBR: 4 reactors
- > Footprint: 7 containers (total 109 m²)