

MOZZARELLA PLANT REUSES ITS PROCESS WASTEWATER, TURNING WASTE INTO RESOURCE



Jonna Mortensen, Site Director of Arla Foods Rødskær, which uses Grundfos BioBooster to clean a half million litres of discarded water from cheese production daily.

Jonna Mortensen takes an early-morning stroll on a meadow behind Arla Foods Rødskær, a Danish dairy that makes mozzarella cheese. A small herd of cows grazes among high grasses and a small brook. A thin summer mist hangs above the grass.

Just up a dirt path from here lies a water treatment facility that Jonna Mortensen expects will break new ground in the field of process water treatment.

"We have these wonderful cows here, which deliver a lot of milk to us, and it is in fact the water in that milk that we reuse in our own facility. It's a fantastic story," says Jonna Mortensen, Site Director of Arla Foods Rødskær.

THE SITUATION

In the process of making cheese from milk, dairy plants produce a lot of water. In fact, about 85% of milk is water, and Arla separates this out as wastewater in cheese production. Every day, Rødskær dairy produces 1,250 m³ of this waste "cow water,"

as they call it. This cow water also includes the nitrogenous compound urea, which traditional treatment plants cannot handle easily.

In 2014, Arla Foods wanted to increase its production of mozzarella. That meant a substantial increase in cow water. Jonna Mortensen says, "It was expensive to send the water to the municipality's treatment plant, so this was a challenge for us."

THE SOLUTION

This was where Grundfos BioBooster came into the picture. BioBooster is a decentralized, stand-alone unit that cleans wastewater at its source, treating it for reuse for cheese produc-

**"It's a huge value to us
that we save our water resources."**

Jonna Mortensen, Site Manager, Arla Foods Rødskær, Denmark

tion without jeopardising food safety. It treats water in a biological process, and ultrafiltration membranes remove bacteria, thereby reducing risks for re-contamination. The treated water complies with both strict discharge water limits and water reuse quality.

Arla cleans 450 m³ of this purified cow water daily, which Arla releases into the local river or reuses in its facility. It reuses an additional 300 m³ of process water in areas where it does not need fully treated water.

“We avoid pumping up 750 cubic metres of groundwater every day, or sending it to the municipal wastewater treatment plant – both are expensive here,” says Jonna Mortensen. “So we’re already beginning to see a return on our investment,” says Jonna Mortensen.

“It’s a huge value to us that we save our water resources. We might have enough water in Denmark, but there are many places that don’t. So there is no doubt that there’s a huge value in reusing water.”

THE OUTCOME

The Grundfos BioBooster helps Arla Foods to keep well under Denmark’s strict discharge limits for treated water, she says. This includes a limit of 8 mg nitrogen per litre. “We are down to

1.5 milligram per litre,” she says of the BioBooster-treated water. Phosphorus discharge limit is 0.3 mg/l, “and we are down to 0.12,” she says. “It’s a super result.”

Jonna Mortensen glances at the cows in the meadow behind her.

“Think about it. We reuse nearly a million litres of water every day – just us, one company. That makes 365 million litres of water per year. That’s a lot. Worldwide, if everyone was using this technology, we could supply drinking water to most of the world.”

GRUNDFOS SUPPLIED

Grundfos supplied the complete BioBooster system to Arla Rødkærsbro for on-site, off-grid wastewater treatment.

[Read more about Grundfos Biobooster.](#)

ABOUT ARLA FOODS

Arla Foods is an international dairy company owned by 12,700 farmers from Denmark, Sweden, the UK, Germany, Belgium, Luxemburg and the Netherlands. It is one of the biggest players in the international dairy arena, with a wide range of dairy products. Well-known brands like Lurpak® and Castello® belong to the Arla family. Arla Foods is also the world’s largest manufacturer of organic products.

See video



Jonna Mortensen at the tanks that collect the process “cow water” – the water separated from fresh milk in cheese production – before Arla treats it in the Grundfos BioBooster system.