



# Multiphase ozone scrubber removes odors at leading yeast producer

**By combining ozonation with traditional water scrubbing, no odors were emitted while bacteria growth was prevented**

**MELLIFIQ**

# Salutaguse Pärmitehas, Estonia

*Salutaguse Pärmitehas is the only food industry producing yeast in Estonia. The company was founded in the 1860s as vodka producer, while yeast was only a by-product. This situation changed in the first half of the 20th century, when yeast became the only focus. Since then, the company has continued their operation. In 1994 Salutaguse was acquired by the Lallemand group, one of the world's leaders, with plants in 43 countries. The plant in Estonia produces various types of yeast, supplying customers in the bakery, beverage and food industry. With a total production of almost 9000 tons of yeast per year, Salutaguse keeps growing, now employing more than 140 individuals.*

## Facts

Name:	Salutaguse Pärmitehas AS
Location:	Salutaguse, Estonia
Industry:	Food production
Air flow:	27,000 m <sup>3</sup> /h
Purpose:	Odor control
Performance:	<ul style="list-style-type: none"><li>• 94% odor reduction</li><li>• No more complaints from neighbors</li><li>• No bacteria growth in effluent</li></ul>

## Solution:

### Ozonetech RENA Tellus

#### X600 turn-key ozone system

Dimensions (HxWxD):	2,200 x 3,500 x 1,800 mm
Weight:	2,000 kg
Input power:	7.5 kW

#### Tailor-made ozone scrubber

Dimensions (HxWxD):	2,200 x 4,800 x 2,000 mm
Treatment volume:	15 m <sup>3</sup>
Internal flow distributors:	2
Hatches for inspection:	2
Water nozzles:	27 nozzles, full-cone 150° spray angle

## The problem

Fermentation is one of the steps involved in the yeast production. Microorganisms process the raw materials while releasing volatile compounds in the fumes. These compounds have a very intense odor, due to their chemical structure particularly perceptive for the human nose. High humidity levels make the treatment even

more challenging. Even if the production plant is not in a central location, odors were spreading, leading to complaints from the neighbors. Due to an increasing pressure from the local authorities, the production manager decided to install an odor control system for ensuring the requirement compliance.

## The solution

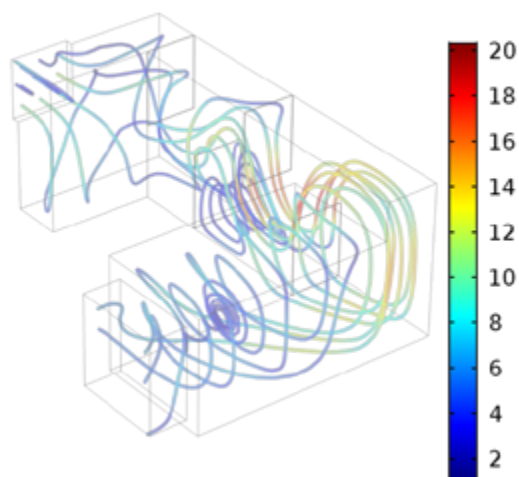
In this case Mellifiq needed to take a larger approach than a traditional product delivery. Due to technical requirements and space limitations, there was no standard product compliant to all requirements, hence we developed a custom-made solution. A water scrubber with ozonation was the selected technology. In this setup, ozone had a double function, as it was injected in both air and water. When dissolved into the water phase, it was preventing contaminations due to bacteria such as Salmonella or Legionella. Air-phase ozone removed remaining odors after the water scrubber, thus completing the odor treatment.

A maximum height of only 2.3 m was one of the most challenging space limitations. CFD (Computational Fluid Dynamics) was the tool used to solve this issue. The simulations ensured an effective combination of air-water contact with optimal air velocity.

The scrubber was fully integrated with the ozone system, with a smooth operation over time. The RENA Tellus X600 was the selected system for this case, as it has the

output in Ozonetech's portfolio. With a modular design, the system is prepared for even higher odor loads for future operation.

alpha(2)=1 m Streamline: Velocity field



CFD simulation for air treatment. The streamlines represent the main air paths, color-coded based on the air velocity.

## Evaluation

After tailoring the design, the delivery was completed with the ozone system and the main scrubber components. Thanks to Mellifiq's turn-key approach to system design and automation, the whole solution could be installed with ease. As soon as the system was commissioned, a whopping 94% odor removal rate was measured. Great benefits were brought to the neighbors,

whose complaints stopped. After observing results going above expectations, the production manager quickly decided to order the same solution for another site in Slovakia, that was suffering with the same problem. We are glad to see our efforts rewarded with a satisfied and recurring customer.



*Ozonetech RENA Tellus X600, a turn-key modular ozone system with complete automation and components integration.*



# About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonotech, Nodora and Water Maid, and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

For additional information, visit our website at [www.mellifiq.com](http://www.mellifiq.com)

