

# Solving DAT-Schaub's problem of 'high fat content wastewater'

DAT-Schaub, in collaboration with Alumichem, has developed a solution that ensures more stable plant operation, halves chemical consumption, and improves wastewater treatment in the meat industry.

## Introduction

Dat-Schaub is one of the world's largest producers of natural casings for luxury sausages. Dat-Schaub in Aabybro receives trimmings and waste from other Dat-Schaub facilities in Denmark. This waste is processed into biodiesel and animal feed. The sludge from the wastewater is converted into biogas.

## The Challenge

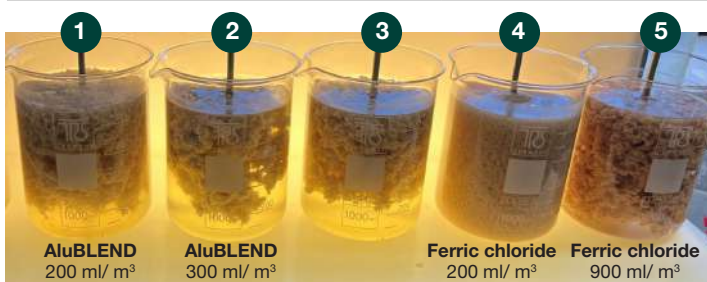
The wastewater entering the treatment plant is high in fat content and has varying characteristics. It is received at a temperature of 80°C. The high temperature, combined with the high fat content, caused fat deposits and unstable operation of the water treatment system when the fat cooled down.

## Alumichem's Solution

Alumichem's consultant inspected the plant, conducted on-site laboratory tests, and then performed full-scale tests by switching from ferric chloride (FeCl<sub>3</sub>) to AluBLEND600.

Cleaner discharged wastewater after switching to AluBLEND

Coagulant	Before (Ferric Chloride)	After (AluBLEND 600)
Total-N	319-697 mg/L	166 mg/L
Total-P	15-45 mg/L	7,4 mg/L
Fat + oil	43 mg/L	12 mg/L
COD	2990-5700 mg/L	1720 mg/L



Clear flocs and a distinct water phase are achieved already at 300 ml/m<sup>3</sup> AluBLEND (#2) as a coagulant. By comparison, 900 ml/m<sup>3</sup> ferric chloride and more polymer (#5) were needed previously.

## Solution & Results



- Tailored water treatment strategy developed by Alumichem.
- Compliance with strict environmental regulations for discharged industrial wastewater.
- Economic benefits through stable operation and reduced chemical consumption.

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## Results

After switching the coagulant, Dat-Schaub now meets strict environmental requirements more effectively. The wastewater, which contained high levels of COD, fat + oil, phosphorus, and nitrogen (see table), is now treated to comply with regulatory limits. At the same time, there is a significant reduction in chemical consumption: >50% reduction in coagulant consumption. 10-20% reduction in polymer usage.

*“A smooth process with professional handling of trials – and great results.”*

Lars Larsen, Operational Manager Dat-Schaub, Aabybro, Denmark



**ALUMICHEM**

www.alumichem.com

**Torben Jensen**

Cell: +45 20273577

Mail: [toj@alumichem.com](mailto:toj@alumichem.com)

Office: +45 4594 0994

# Alumichem Helps Rose Poultry Optimize Wastewater Treatment

Rose Poultry, in collaboration with Alumichem, has developed a wastewater treatment solution that saves DKK 350,000 annually and reduces CO<sub>2</sub> emissions. Optimized chemical dosing provides both environmental and economic benefits.

## Introduction

Rose Poultry, one of Denmark's leading chicken producers, faced a significant challenge with wastewater treatment at their slaughterhouse in Vinderup. With a daily water consumption of 1,600 m<sup>3</sup>, efficient water treatment was crucial to both meet regulatory requirements and reduce costs. In collaboration with Alumichem, a leading water treatment expert, Rose Poultry developed a customized solution that reduced chemical consumption and lowered CO<sub>2</sub> emissions.

## The Challenge

For several years, Rose Poultry struggled with high wastewater treatment costs while needing to comply with strict environmental regulations. The challenge was to reduce both chemical usage and CO<sub>2</sub> emissions while ensuring effective treatment of wastewater, which contained large amounts of organic matter such as blood and fat from meat production. This required a more advanced and targeted water treatment process.

## Alumichem's Solution

In close collaboration with Alumichem, Rose Poultry developed a new water treatment strategy that optimized chemical dosing and tailored the cleaning process to the specific needs of the poultry slaughterhouse's wastewater. Alumichem provided a customized chemical solution that effectively precipitated the small particles in the wastewater, making them easier to separate from the water. By precisely dosing chemicals at the right times and places in the process, the wastewater treatment became not only more efficient but also more cost-effective and environmentally friendly.



**Torben Jensen**  
Key Account Manager  
Tel: +45 20273577  
Mail: [toj@alumichem.com](mailto:toj@alumichem.com)  
Alumichem office: +45 45 94 09 94

## Solution & Results



- Customized water treatment strategy developed in collaboration with Alumichem.
- Annual savings of approximately DKK 350,000 on chemicals.
- Reduced CO<sub>2</sub> emissions through less sludge transport to the biogas plant.
- Compliance with strict environmental regulations for the treated wastewater.
- Economic gains through reduced operational costs and optimized chemical consumption.

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## Results

With the implementation of Alumichem's solution, Rose Poultry achieved significant improvements. They now save approximately DKK 350,000 annually by using fewer chemicals in their treatment process. At the same time, CO<sub>2</sub> emissions have been reduced, as the amount of sludge transported to the biogas plant has decreased. The new process has led to both economic savings and a positive environmental impact. The treatment process now ensures that the clean water discharged meets all environmental requirements, supporting Rose Poultry's and Alumichem's shared goal of a sustainable future.

With Alumichem as a partner, Rose Poultry has gained a long-lasting, environmentally friendly, and cost-effective solution for their wastewater treatment, benefiting both the bottom line and the climate.



# Arla Foods Optimizes Water Treatment, Achieving Major Savings

In collaboration with Arla Foods in Hobro, Alumichem optimized the existing belt filter system for treating process water from their production.

## Introduction

In March 2021, Alumichem began a collaboration with Arla Foods in Hobro to optimize the company's belt filter system for treating process water. The optimization project not only solved issues with the system's load but also resulted in significant financial savings.

## The Challenge

Changes in production at Arla Foods in Hobro led to an increased load on the belt filter system, resulting in reduced water quality and overloading of the local treatment plant. Mariagerfjord Vand, which receives wastewater from Arla, experienced periods of organic load up to 125,000 PE, even though the facility is built to handle only 75,000 PE. This situation created the need for a comprehensive optimization to ensure both economic savings and sustainable operations.

## Alumichem's Solution

Alumichem stepped in in March 2021 and initiated a series of tests to improve the chemical treatment process of the wastewater. The existing belt filter system was upgraded by replacing hydrochloric acid with AluPAC as a coagulant and introducing a new type of polymer to optimize the flocculation process. This adjustment ensured more efficient removal of organic material from the process water and stabilized the treatment plant.

## Results

The results of the optimization were significant. Arla Foods in Hobro achieved an annual savings of approximately DKK 1,000,000 by avoiding the surcharge for overloading. Mariagerfjord Vand now receives more consistent and lower organic loads, which their plant has the capacity to handle. At the same time, the improved water quality and stability of the plant have reduced the need for further optimization measures, freeing up resources for other energy-saving initiatives. With over 40 years of experience in process optimization,

## Solution & results



- Surcharge eliminated, leading to annual savings of approximately DKK 1,000,000.
- Mariagerfjord Vand receives more consistent wastewater with lower organic load, which they have the capacity to treat.
- A more stable system, requiring fewer man-hours for optimization.
- An investment that secured additional funds for other energy-saving initiatives.

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Alumichem has provided Arla Foods with a sustainable solution that contributes positively to both the company's economic and environmental future.



1. Raw wastewater
2. Addition of AluPAC and polymer for flocculation
3. Treated process water

## Contact us

Contact our experts to learn more about our solutions and products for optimizing your treatment plant.



# ALUMICHEM

Tlf: +45 45 94 09 94 | [info@alumichem.com](mailto:info@alumichem.com)  
[www.alumichem.com](http://www.alumichem.com)