

# LEBENSMITTEL TECHNIK

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Decontamination  
**Safeguarding  
hygienic  
processing**

Presented by

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Implementing a targeted and sustainable air management system is not easy in the large production and filling areas at the Naabtaler dairy.

# Targeted air management

Naabtaler Milchwerke opt for a safe and hygienic climate

The Naabtaler Milchwerke in Schwarzenfeld, Germany, are part of the Privatmolkerei Bechtel. The top priority of the company is product quality. All necessary hygienic requirements are subject to a continuous optimization process. A consulting firm from Bremen that specializes in practical air management services is supporting this effort.

The production at Naabtaler is guided by the premise of processing milk gently and in a natural way into a number of specialty dairy products. The main factory, which was built in 1983 in Schwarzenfeld in the Oberpfalz in Germany, processes more than one million kilograms of milk into UHT-milk, cream, Quark, yoghurt and cheese each day. To a large extent, the three-shift operation runs fully automatically. Another factory, in which semi-finished cheese products are made, is located nearby in Weiden. Most products are private label brands for the retail trade, except for the cheese brand "Grünländer", which is the company's own brand. The Naabtaler dairy exports its products into all of Europe.

Martin Miller, Head of Quality and Process Management, does not accept any compromises: "We strive for producing

high quality and hygienically immaculate products day by day and around the clock." This may sound like a matter of course but its implementation is not easy in a company with such complex operations. There are many hygienically susceptible areas where microbiological risks have to be prevented by all means possible, including the processing, production and filling of products. Humidity and temperature are the main parameters that need to be controlled. Added to that, sophisticated air management keeps the airborne count in the facility to as low as possible.

Miller explains, "Recently, we have taken more measures to further enhance hygiene in our plant. One example: We try to guide the air flow into and out of the production area in a targeted and clean fashion. The concept for the optimization of the climate was developed by Just in Air, a consulting firm from Bremen."

Just in Air's CEO, Ralf Ohlmann, can look back to more than 30 years of experience in the food industry. He says about the current project, "At Naabtaler we experienced an excellent basis which we were able to refine by introducing a sustainable and comprehensible air management

Martin Miller (left) and Ralf Ohlmann work side by side on the optimization of hygiene and climate in the main factory in Schwarzenfeld.





system. We first of all identified potential hygiene risks and then introduced coordinated measures to improve the conditions."

The Naabtaler dairy makes a point of developing a concept first and then strategically sticking to it to exclude poor planning or bad investments and to achieve the best possible effect for hygiene and climate. The key to success is the homogeneous distribution of air in the room and this is why the installation of circulation fans is next. These fans transport decontaminated air everywhere in the production hall. At the same time, they remove warm and humid air, which is predominantly generated close to the heat exchanger in which the milk is heated.

Miller explains why Just in Air was his first choice for the hygiene-climatic inspection, "The climate in a food processing company is very specific. There are not many companies with the necessary expertise for the development and successful implementation of the concept. Just in Air has this knowledge. All proposed improvement measures have been proven to function perfectly."

Ohlmann adds, "We take care of the analysis and the adaptation of the processing environment. This means that the food company can completely focus on its core competency, which is to make good products." The engineers and technicians of Just in Air always follow the same scheme: Analyzing the current situation and identifying the target situation. The companies can then implement and optimize the recommended measures on their own." When asked about the price-performance-ratio of his specialized consultation, Ohlmann uses a quote from a customer: "Planning costs money, no planning costs a fortune."

For Miller it is important that the approaches defined really change the situation in general by tackling the causes instead of simply remedying some symptoms. Ohlmann adds, "We develop linear and constructive solutions which can be carried out as immediate measures or one after another in the medium or long term."

In its filling area for yoghurt, UHT-milk and cottage cheese, the Naabtaler dairy is pleased with the hygiene status permanently achieved by the planning services and support by Just in Air. "However, we want to become even better and therefore we are constantly optimizing," says Miller.

Another useful hygiene element is the application of the decontamination technology of Air Solution which has been proven successfully in the industry for more than 12 years. This technology is well-tested, easy to apply and complies with food production requirements.

[www.privatmolkerei-bechtel.de](http://www.privatmolkerei-bechtel.de)

## Manufacture of meat products

### Maximum hygiene is required in the slicer area

The quality demand of the company Metten Fleischwaren GmbH & Co. KG in Finnentrop, Germany, is reflected by the claim 'The best of meat' printed on the company's branded products. The meat processor relies on confidence and transparency. Hygienic processing conditions play a senior role in this. The air decontamination system of Air Solution is one pillar in the overall concept. Ulrich Metten, Managing Partner and responsible for production, confirms the high efficiency of the process.

**LT:** Which measures do you apply in order to safeguard a sufficient level of hygiene of air and surfaces?

**Metten:** To keep the airborne count in the processing environment as low as possible, we apply different measures. First of all, we clean the air in filters. Next, we have decontamination measures in place that operate with UV-C radiation. In some sensitive areas, we also distribute the air conditioning agent L.O.G. by fogging. As far as the slicer and packaging areas are concerned, we make use of a specific air management system that produces an overpressure in the areas which hinders undesired microorganisms from entering these areas. For surface hygiene, our daily cleaning efforts are supported in critical areas by distributing the decontamination agent of Air Solution in the air.

**LT:** Which production areas are microbiologically at risk?

**Metten:** Our slicer rooms for cooked and cured sausages and meat jellies as well as the processing of raw sausages which all require maximum hygiene, as does the packaging of the finished products.

**LT:** How efficient is the air decontamination technology of Air Solution that you employ



Ulrich Metten: "With this technology, we were able to reduce airborne and surface counts sustainably."

in your company?

**Metten:** With this technology, we were able to reduce airborne and surface counts sustainably. This brings additional safety.

**LT:** How economical is this process?

**Metten:** The price-performance ratio is right. The optimization of the general hygiene conditions in the susceptible areas was a success.

**LT:** How user-friendly is the fogging process and the distribution of the active agent?

**Metten:** One large advantage over competing technologies is the possibility of adjusting

the amount of active agent to be introduced into the air manually. This allows aligning the intensity of the treatment with the individual requirements in the respective areas. The operation of the fogging units is easy as no elaborate training of personnel is necessary.

**LT:** Are you planning in the short or long term any more investment or retrofitting for the further improvement of air and surface hygiene?

**Metten:** We are thinking about optimization in the packaging area for products for service counters.

[www.metten.net](http://www.metten.net)



The production at the Metten meat processor is designed as hygienically as possible

## Production of beverages

### Decontamination modules in the air duct

Nioli is a specialized beverage producer from Bremen. The company applies Air Solution's decontamination process in its raw material storage, blending preparation and filling areas. Plant manager Tobias König feels confident about the hygienic protection provided and he is proud of the low number of complaints.

Several decontamination modules have been installed in the central air ducts. They distribute the air conditioning agent L.O.G. into the infeed air. König explains, "We calculated that we currently need to apply less than 0.1 ml L.O.G. per cubic meter air per hour. If the performance of the decontamination system needs to be increased in the future, for example, because peripheral areas need to be also included, we will be able to install more modules." König is pleased about the user-friendliness of the fogging units.

**The active agent is not subject to labelling regulations**

Tobias König

Ohlmann adds, "In case of malfunctions, we are often able to solve the problem via remote control of the PLC and telephone with the plant's technician. Our service on site is hardly necessary for that."

According to an expert's opinion, the decontamina-

tion agent L.O.G. is composed of nature-identical substances that resemble some components in milk. Ohlmann says, "In a risk evaluation process, we adjusted the composition of the product in such a way so that the substances affect a broad range of bacteria, moulds, yeasts and viruses without any detrimental effect on the food or beverage product. Microorganisms will be eliminated but there is no formation of resistance."

For König there are some more advantages. "The active agent is not subject to labelling regulations. For handling and storage, no warnings or safety measures are required."

The same air decontamination technology is also applied in hospitals and nursing homes to protect the health of the persons in these facilities. Dr. Klaus-Dieter Zastrow, a well-known medical specialist for hygiene, confirms the beneficial effect of the process in these areas. It

Main product in the portfolio of Nioli is the trendy drink Hugo.



Fogging module for the distribution of the air conditioning agent.

can be applied everywhere where low germ counts and a reduced risk of infections are required.

Due to international expansion and the related market growth, the Air Solution Group has reorganized itself and offers its well-known hygiene quality services in a new design. The two main areas of application, namely food hygiene and human medicine, have now been organized in the divisions Industrial, Engineering, Health Care and Home Care.

[www.nioli.de](http://www.nioli.de)  
[www.airsolution-group.com](http://www.airsolution-group.com)

## Current findings

### Effective against norovirus

Prof. Dr. Uwe Truyen of the Institute of Animal Hygiene and Veterinary Public Health at the University of Leipzig, Germany, examined the effect of the decontamination agents L.O.G. 1 and L.O.G. against norovirus

LT: Which test strain did you use for the examination and why is it this specific one?

Truyen: We used strain S99 of the murine norovirus, which was isolated by the Robert-Koch-Institute. According to the Guidelines of the German Veterinary Medical Society and the German Registered Association for Combatting Viral Diseases, this is the strain of choice for testing the efficiency of disinfection agents.

LT: What were the results and conclusions of your test?

Truyen: Under the test conditions, the in-

fectivity of the murine norovirus was completely eliminated after the targeted fogging with L.O.G. 1.1 and L.O.G. This means that the infection titer was reduced at least by the factor  $10^3$  which is a complete elimination under these test conditions. The viruses were on steel plates when exposed to the fog.

LT: To what extent can the use of the air and surface decontamination agents be recommended in food processing facilities as protection against noroviruses?

Truyen: Noroviruses play an important role



Prof. Dr. Uwe Truyen is President of the German Veterinary Medicinal Society.

in the food industry. Sick or infected personnel can contaminate the food products. The consumer is then infected via the contaminated food. Therefore, a minimization of noroviruses in areas where food is processed or packed is necessary. Using the examined decontamination agents would make sense. St.

[www.dvg.net](http://www.dvg.net)