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Microbial decontamination

Sound hygienic
conditions: quickly
and reliably

Presented by

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Sound hygienic conditions

Kurhessische Fleischwaren GmbH opts for the safe microbial decontamination of air and surfaces

The company Kurhessische Fleischwaren GmbH of Fulda, Germany, is part of the Tegut retail group. The meat processing company's mission is to offer its customers high quality meat and processed meat products made from premium raw materials. One requirement for this is that the products are produced under sound hygienic conditions. In order to safeguard and to even exceed the existing high standards, a highly efficient surface and room air decontamination system provided by Air Solution was installed about six months ago.

The company Kurhessische Fleischwaren GmbH was founded in Fulda, Germany, close to the Tegut headquarters, in 1969. At that time, the in-house butchery ensured that the Tegut supermarkets were supplied with fresh meat and processed meat products. This has still not changed even today. Between 50 and 60% of the products are delivered to their own chain stores with everything else being dispatched to customers located all over Europe. The organic products' share has increased constantly over the past few years and has now reached about 55%. General manager Erich Michel explains, "Currently organic products are our main field of activity." Sustainability is another aspect important to him. Therefore, he cooperates closely with contract farmers. Added to that, a slaughterhouse is also part of the company for safeguarding the processing



Following the completion of his apprenticeship as a butcher, Erich Michel started working in the Tegut meat processing company in 1972. He completed several training courses and passed his exam as a master butcher. Following this he was appointed production manager, then plant manager and finally, in 1996, general manager of the Kurhessische Fleischwaren GmbH.

chain. Further processing then takes place in the main factory or at a second production facility in

Frankenheim, which is situated in the Rhön biosphere reserve in a low pollution environment at an elevation of 800 m. This offers optimum conditions for the traditional natural ripening process for raw sausages and ham. Added to that, there is also a delicatessen company in Fulda. Michel counts on quality and reports that "We have a holistic view on our food products".

Specific attention is paid to hygiene as the production in the main company runs 24 hours a day, seven days a week. This means hygiene must be permanently guaranteed. The staff has a high degree of responsibility regarding this point. "Everybody has to make sure that at their station everything runs according to our quality assurance requirements. The final goal is to secure a good hygiene status, day in and day out", reports Michel. "The training and education levels of our employees are important in

An almost complete count reduction

Three questions to Prof. Dr. Walther Heeschen, who provided an expert opinion on the microbiological effectiveness of the microbial air and surface decontamination agent L.O.G.

LT: How do you evaluate the microbial effectiveness of the microbial air and surface decontamination agent L.O.G.?

Heeschen: Practical experiences gained within the past few years have shown that the Air Solution process yields a significant reduction in the air-borne count and microbial surface contamination. A recent review by an accredited examination laboratory also showed that it is possible to reduce the number of food relevant microorganisms - these include bacteria, yeasts and moulds - on surfaces significantly with L.O.G. An excellent count reducing effectiveness has been proven quantitatively.

LT: What log reductions can be achieved?

Heeschen: The reductions achieved under practically relevant conditions on surfaces were between >2.7 and >4 log₁₀ count and with this in the range of 99.9 to 99.99% for bacteria. The effectiveness against the yeast *Yarrowia lipolytica* was in the range of more than 2 log₁₀ count which corresponds to an almost complete count reduction. For the spores of the mould *Penicillium chrysogenum*, the results were in the range between 2.1 and >4.3 log₁₀.

LT: How about the hygienic-toxicological evaluation of the active agent?

Heeschen: The hygienic-toxicological evaluation of the active agents contained in L.O.G., namely benzoic acid, lactic acid and hydrogen peroxide, showed that, even under the worst case conditions, no health risks have been determined for the user or the consumer. The safety factors are high. This statement has been derived from the international and national data on the toxicological evaluation of the components.



Approved by food law

Three questions to the expert Regina Zschaler who has issued an expert opinion regarding the elimination of food relevant spoilage organisms

LT: What kind of microbiological risks can the air and surface treatment agent L.O.G. be used for?

Zschaler: Food relevant spoilage organisms such as lactobacilli, pseudomonades, Enterobacteriaceae, yeast and moulds can be controlled very well. The effectiveness has been proven in practically relevant tests, some of them yielded a 5 log reduction which means an almost 100% elimination in practice.

LT: For which areas in food production is the product suitable?

Zschaler: It is most of all recommended for areas that are susceptible to air-borne contamination. One example is the filling of acidic dairy products or delicatessen. The use of L.O.G. offers advantages in the environment of open machines as well. This applies to production as well as to packaging processes. Added to that, it can prevent post-contamination of the product in the finished goods storage.

LT: What about the food legislation evaluation of the active agent?

Zschaler: From the food legislation point of view, this product is a mixture of ingredients all approved as biocides which are also used as additives in food.



this context because otherwise the hygiene and quality standards cannot be maintained reliably."



The foggers are installed close to the air hoses and air outlet. This ensures the best possible uniform distribution of the active agent in the room air.

Another measure towards hygienic reliability is the microbial surface and air decontamination technology provided by Air Solution about six months ago. Currently six production rooms are equipped with foggers which distribute the air treatment agent L.O.G. finely into the air. Ten units each, all installed underneath the ceiling, are supplied from and controlled by a central station. "We want to act, not just react", says Michel. He has decided to go for a hygienic air conditioning solution because of the favorable cost-benefit ratio. However, he also stresses

that this is merely a prophylactic measure that serves to safeguard or stabilize the high hygiene status in the company at any time.

Michel is also constantly considering ways to increase quality and hygiene standards; he communicates with colleagues from other companies in this regard. It is in this way that he found the current solution. Due to his positive

experience with the reliably operating fogging technology, he is now considering further installation of this technology in other parts of the plant. The main reason behind this for the master butcher is that, "Since we have installed these units, our microbiological assessment shows a clear improvement in total count."

The active agent applied and its safe use in the food area has been proven by several expert opinions. "It has also been confirmed that this agent is harmless to human health. Added to that, the agent is not only effective against common spoilage organisms but also against salmonellae and

listeria", adds Ralf Ohlmann, Managing Director of Air Solution GmbH Bremen, Germany. "We also operate this system in the public health sector, including hospitals, which are highly sensitive areas." Another aspect pleases Michel: L.O.G. is also approved for the production of organic products.

Currently about 400 l of active agent solution per month are used for the permanent treatment of the 3,800 sqm



Ralf Ohlmann (left), managing director of Air Solution GmbH, Bremen, with Thomas Seyferth, vice plant manager of the Kurhessische Fleischwaren GmbH at the control and dosing station of the microbial air decontamination system

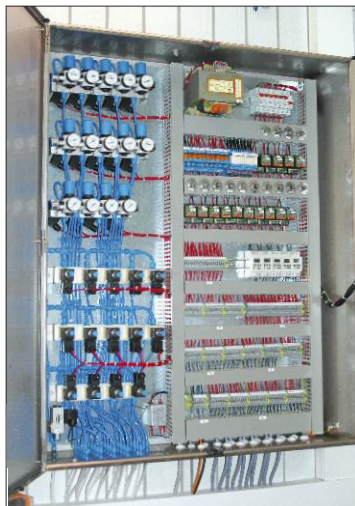
production space at the Kurhessische Fleischwaren GmbH. Ohlmann explains: "This means that the company distributes less than 0.1 ml L.O.G. per cbm air. This is economically interesting and is connected with lower costs compared to other microbial decontamination processes." Prior to the installation of the fully automatic surface and air decontamination system, a mobile unit, a so called streamer, was used for some test runs. The results were convincing. During this time, the employees, with the inclusion of the work council, were informed in detail about the mode of action of this



Some of the organic products offered by the company

system so that there were no problems with acceptance later.

The next step was a detailed compilation of operational data by Air Solution. The actual status was analyzed and evaluated for each area. Based on the target parameters defined by the quality assurance department, a concept was developed that



Control cabinet as the central control station for the individual fogging aggregates.

DMK Deutsches Milchkontor

Manifold installation in Edeweicht

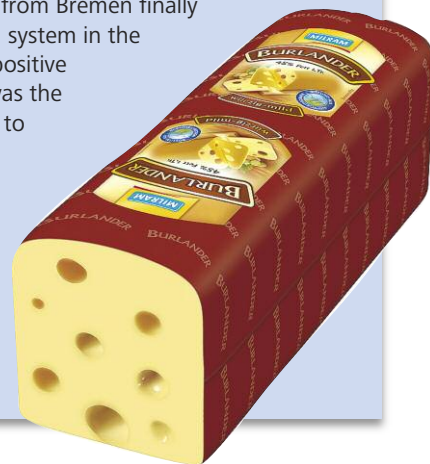


Thorsten Lucht

has been optimized in terms of hygienic air-conditioning with the use of this air treatment agent. The results are extremely convincing so that Lucht can imagine using the Air Solution technology in other production areas and storage areas for unpacked food as well.

www.milram.de

Thorsten Lucht, plant manager of the Edeweicht facility of DMK (joint venture of Humana and Nordmilch) confirms the high effectiveness and efficiency of the air and surface treatment agent L.O.G. Since 2002, they have been using the Air Solution process for increased hygiene of unpacked products. A panel of experts including the hygiene specialist from Bremen finally implemented a microbial decontamination system in the cheese slicing area in 2006. "With a very positive outcome!", Lucht reports. The next step was the installation in the air conditioning systems to achieve a permanent air-borne count reduction. Recently, the processing environment in the butter making area



included tailor-made solutions for each room. The fogging technology provided by the hygiene experts from Bremen has been constantly improved, in particular, in terms of control and reproducibility. The units used are pressure-resistant and shock-proof, have a high IP

protection and are reliable in their operation. With this "additional but hardly noticeable" microbial air decontamination solution, Michel is achieving a high degree of safety. Putting it in a nutshell, he confirms: "We have our total count well under control. Being on the safe side

in terms of hygiene is of high relevance to our success. In our opinion, this is a key component for safeguarding our future." St.

www.kurhessische.com
www.airsolution-group.com

LT: Karwendel has used the Air Solution process to improve the hygienic conditions of unpacked products since 2004. What has been your experience of this technology?

Natterer: This technology is still being used and meets our requirements in terms of the reduction of the microbiological count. Therefore, we also installed the same system at another line in 2006.

LT: What can you tell us about that?

Natterer: I can no longer imagine this line without this microbial decontamination technology, particularly as there is no alternative. The microorganism and spore counts at the line with its food contact surfaces remain low despite a three shift operation. Due to the constant and prolonged exposure time, the

Karwendel

Can't imagine being without it!

Werner Natterer, plant manager at the Karwendel company in Buchloe, Germany, has applied Air Solution's air and surface decontamination technology successfully for seven years now.

bacterial count in the environment around the machine and in the air is reduced which offers even more protection.

LT: Do you think this hygiene technology is also suitable for use in other production areas or for the storage of unpacked food products?

Natterer: In production areas or storage rooms with unpacked food there is always a certain amount of air-borne germs or mould spores. A targeted treatment of the room air with the Air Solution technology has a positive effect in every case.

LT: How do your employees accept the microbial

decontamination process and, in particular, the distribution of active agents in their working environment?

Natterer: When we started in 2004, the staff was rather skeptical but that changed after they had been thoroughly informed. Today, seven years after the first usage, there are no negative statements from this side. On the contrary! The process has been completely accepted.

LT: How do you assess the cost-benefit ratio of this hygiene technology?

Natterer: The technology is quickly installed. The investment costs are low compared to other processes. For applications that allow for a certain exposure time of the active agent, this process is ideal in terms of cost-benefit ratio.

www.exquisa.de

