

LEBENSMITTEL TECHNIK

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Offizielles Organ der Gesellschaft Deutscher Lebensmitteltechnologe e.V. (GDL), des Vereins Österreichischer Lebensmittel- und Biotechnologen (VÖLB) sowie Partner im DLG-Netzwerk für Lebensmittelverarbeitung

Low germ environment

Successful and targeted air management



AIR[®]
SOLUTION

justⁱn'air[®]

Low germ environment

Successful and targeted air management

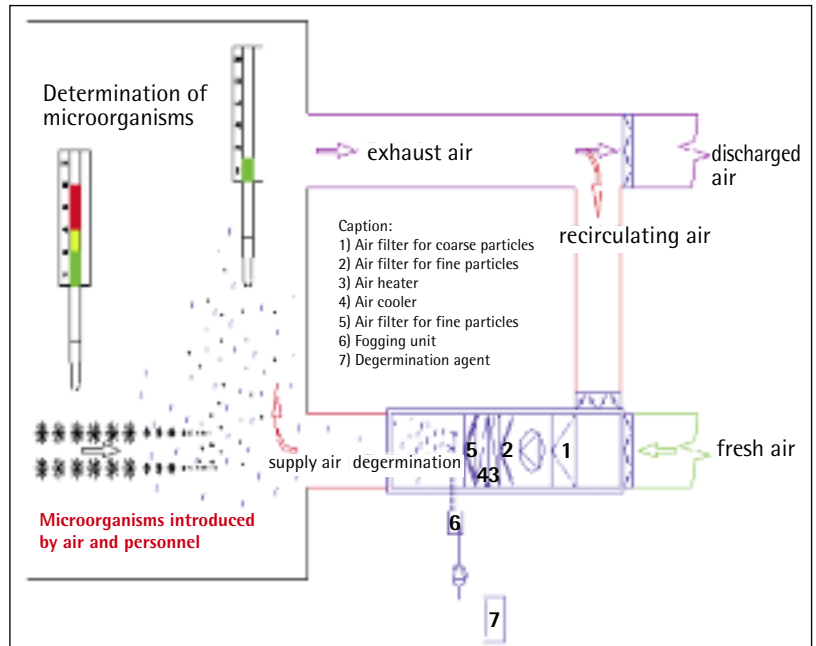
There is hardly any other environmental parameter that influences product quality, economical expenditures as well as well-being and performance of people the way air does. Insufficient ventilation conditions in rooms often result in poorer quality and production losses.

Low-germ air prolongs the shelf life of products, reduces complaints, minimizes disinfection efforts and is one of the fundamental prerequisites for acceptable production and processing processes. Negative side-effects of an insufficient air management include high air-borne counts, risk of smear contamination and in particular the inadequate discharge of internal loads (humidity, heat, dust, etc.) and the resulting effects like improper air flow, overheated equipment, formation of condensate, increased energy and renovation costs. Thus the reasons for lacking or unbalanced air management have a detrimental effect on product quality, operating costs, the personnel and last but not least on the necessity of renovations. Apart from the targeted air

management, the energy situation (cooling, heating, CO₂ emission) has become a significant cost reduction factor. For example, parts of the hygienically acceptable and conditioned air can be reused. However, energy generation processes (refrigeration plants, heating plants) should also be reviewed for their efficiency. Here potential savings up to

80% might be possible. In order to compile a detailed schedule of measures for a reliable (targeted and precisely) and economical (as much as needed, as less as possible) optimization, the reasons for hygienic and energetic weak points must be identified during operation. The specific analysis of the operational environment by Just in Air,

Bremen, Germany, allows to determine and display hygiene and ventilation shortcomings in the production area by determination of air-borne and surface germs, detection of air temperature and humidity and by air flow measurements. The next step is to eliminate the weak points within the company using simple methods. Just in Air is also



Flow sheet of an air conditioning unit by Air Solution

Integration of an active air degermination unit in a filling machine (left) and a ventilation duct (right)



specialized in ventilation/air conditioning design in existing and/or new production facilities.

An economical and safe possibility for significantly decreasing the germ count is the use of an active air degermination unit provided by Air Solution, Bremen, Germany. With this unit the air treatment agent L.O.G. 4 is homogeneously distributed via fine fogging into the room air (> 0.01%). This allows to reduce the germ count even in areas that are hard to reach. The range of application includes the treatment of air in food processing facilities, in

particular in processing, packaging, cooling, storage and ripening areas. With the air treatment the load of air-borne microorganisms which promote spoilage (moulds) but also the amount of pathogens can be clearly reduced. This measure prolongs the shelf life of the products and keeps their quality on a constant level. One key benefit of active air degermination measure is its use while personnel and products are present in the treated room. This ensures a hygienic protection over the entire production time.

RO/St.

www.airsolution-group.com

Just asking I

Recommended use

Prof. Dr. Walther Heeschen, veterinarian specialized in pharmacology, toxicology and food hygiene in Kiel, Germany, has appraised the air and surface treatment agent Air Solution L.O.G. He gives his opinion in the LT interview.

LT: Where and why is the product used in the food industry?

Heeschen: The air and surface treatment agent L.O.G. is used e.g. in bakeries, meat processing, dairies or the production of delicatessen, in particular in processing, packaging, cooling, storage and ripening areas. With the air treatment the load of air-borne microorganisms (e.g. mould) can be clearly reduced which results in the prolonging or improvement of the products' shelf life and quality.

LT: How do you assess the toxicological potential of the active agents in the product?

Heeschen: The active agents

benzoic acid, sorbic acid, lactic acid and hydrogen peroxide have been toxicologically assessed by international and national organizations and institutes. Benzoic acid and sorbic acids are approved food additives. Daily acceptable intakes have been defined for these acids. The clinical-toxicological evaluation has shown that no residues of these substances were detectable on the food and that

there are no objections from the hygiene-toxicological point of view.

LT: How about the personnel in the plants where the product is applied. Is their health at risk?

Heeschen: Regarding L.O.G. risks for consumers and users



From the hygienic-toxicological point of view there is no objection.

PICTURES: AIR SOLUTION, HEESCHEN, IBEN

can be excluded. According to calculations, even with the "worst case scenario", there are no objections because of the large safety span between the acceptable daily dose and the real intake. Added to this, the maximum workplace exposure limit for hydrogen peroxide is by far not reached.

LT: How about the residues of the active agents? In what quantities can they be detected on food?

Heeschen: Up to now no residues of the active agents used were detected on the respective food products.

LT: Do you recommend the use of this product without reservation?

Heeschen: The application of the product L.O.G. for hygiene air treatment within the scope of an air management system in the food industry can be recommended without any reservation under consideration of the hygienic-toxicological aspects and under consideration of safety for users and consumers. This statement is based on international and national data on hygiene-toxicological evaluation of the active agents used.

Just asking II

No labeling required

As expert for hygienic issues in food production, Dipl.-Ing. Hans-Jürgen Iben, general manager of Labor Iben GmbH, Bremerhaven, Germany, provides information on the practical use of the air and surface treatment agent Air Solution L.O.G.

LT: How do you assess the germ-reducing and bactericidal effect of the product?

Iben: Trials and applications in practice have shown that the product in combination with the application technology results in excellent effects against microorganisms.

LT: Will the product improve the microbiological status of the environmental air and how does it influence the food?

Iben: The environmental air is improved by this product. Air-borne microorganisms will be reduced and killed. A possible influence on the food can be neglected upon proper application.

LT: How about labeling issues?

Iben: When used as intended, the compounds of L.O.G. do



This product improves the environmental air.

not need to be labeled.

LT: How do you feel about the use of this product for example in susceptible fields like fresh meat processing?

Iben: This statement is also valid for fresh meat

processing. Detrimental effects are not known to us, proper application provided.

LT: Where can this product improve the hygiene in food processing processes?

Iben: At all stages.

LT: How do you assess L.O.G. compared to traditional disinfection chemicals?

Iben: The compounds contained in the product are food additives in low concentration. Handling and use of this products is of no risk for the personnel, e.g. by chemical burns. St.

*Specialists in hygiene
and ventilation technology*

Quality

AIR-SOLUTION

Costs

GROUP

**More protection against moulds and
other microorganisms**



- >> Degermination of air
- >> Degermination of surfaces
- >> Product protection
- >> Prolonging the minimum shelf life

- >> Status analysis of hygiene and climate
- >> Reduction of weak points
- >> Air management
- >> Planning of ventilation and air conditioning
- >> Energy savings

Leading institutes have reviewed the AIR SOLUTION hygiene process according to the latest EU food regulations and recommend the use without any reservation. Date of review: September 2008

Prof. Dr. Heeschen:

"The use of AIR SOLUTION L.O.G. can be recommended without any reservations even with personnel present. It is not necessary to label the food accordingly!"

Prof. Dr. Weber:

"Due to the reduction of germ count with AIR SOLUTION L.O.G., the shelf life is improved. There are no objections from the food legislation point of view, labeling is not required."

Chemical laboratory IBEN:

"A health risk for humans can be excluded with the use of AIR SOLUTION L.O.G. In our opinion there is no law or regulation that stipulates that food has to be labeled when using AIR SOLUTION L.O.G."

AIR SOLUTION GROUP

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