

Ketchup maker goes for clean production air using efficient UV light

Air disinfection at Wiso Feinkost GmbH

Whether on French fries, barbecued food, hamburgers or escalopes, ketchup can spice up many dishes. So it's no wonder that almost everyone has a bottle of ketchup or other spicy sauce in their fridges. The recipes usually include sugar, tomato paste, vinegar and salt, as well as other spices and flavorings to make the product tasty. However, not only people but also moulds, yeasts and viruses find the mixture attractive which creates problems during the production process. These organisms are naturally present in the air, settle down on the intermediate product before it is packaged and shortening the product's shelf life.

In cooperation with Heraeus experts, Wiso Feinkost GmbH, a producer of more than 35 tons a month of condiment sauces for 38 well-known labels, has found a fast and cost-efficient solution to this problem. The room air is filtered and disinfected with UV light, so that the product will be non-perishable even without adding preservatives.

The challenge: disinfection of the air without chemicals

The air around us contains a certain number of mould spores and yeasts. This is quite normal but may present a challenge when processing food. The yeasts and moulds breed on the product and substantially shorten its shelf life. Especially in food-processing plants producing and packaging food in rooms that are not isolated from the outside world, contaminated air flows in through doors and ventilation systems.

Due to this, a contaminated batch cost Wiso Feinkost GmbH a loss of 80,000 €. The room air sometimes had a mould spore burden of more than 300 CFU/m³. This caused a loss of production including a recall campaign that damaged the company's image. The high employee absentee also indicated that there was a need for action.

The reliable and cost-efficient solution based on UV light

In search of an air disinfection solution, managing director Lars Wiegand researched available solutions. The best solution became clear very soon: UV light is a simple, cost-efficient and expedient means that leaves no trace on the product. Alternative methods, such as disinfection of the production air using chemicals, were out of the question because they would contaminate the product.

Another expedient method would have been to heat up the sauces, but this would destroy the valuable vitamins and harm the flavor of the products. Moreover, heating the product would require too much time and a lot of energy.



The Heraeus solution at a glance:



Ozone-free lamps with 254nm UV emission, control unit with 200 W energy consumption and precisely fitting clamping springs.

"In the end, you want a solution that reliably and lastingly disinfects the air," says Wiegand. "It should be long-living and, what is even more important: maintenance should not cause production standstills."

A cost-efficient and pragmatic solution that takes account of the spatial situation was found in an advisory meeting with the Heraeus UV experts. The precisely calculated number of ozone-free UV lamps was installed in a commercially available, washable HEPA filter. This number is determined based on volume flow, room size and disinfection rate to be achieved. A power supply optimised for the UV lamps and matching mounting clamps for mounting the lamps were supplied.

The efficient method is quite simple: The viruses and mould spores have different sizes and properties. While mould spores are relatively large and can be caught by the filter, viruses are too small to be retained. Therefore, they get inside the filter where they are inactivated by the UV light.

The mould spores already caught can be exposed to the radiation for a longer time. In this way, they are inactivated with little expenditure of energy. The entire process takes place "behind closed doors" inside the filter and is harmless to the health of the employees in the room.

In this way, the Heraeus Noblelight UV experts were able to find an efficient, reliable and still economically optimised air disinfection solution for the production rooms together with Wiegand und Sohn GmbH.

Why did Wiso Feinkost GmbH opt for Heraeus?

Of course, you do not back only one horse for a start. Managing director Lars Wiegand had obtained offers from several suppliers already.

"However, they all were more expensive by far. Moreover, I was asked to buy a complete system and did not even get a guarantee that it would work in the end," explains Wiegand. "We had already been using Heraeus lamps 40 years ago and therefore new the name. When we then contacted the Heraeus experts, we for the first time had the feeling that someone understands our problem and tries to find a solution tailored to our needs. Our contact persons were readily available on the telephone and explained to us in detail how the combination of filter and UV radiation would work. That was comprehensible and absolutely made sense."

When asked whether he is planning on further expanding his business and retrofitting his production rooms, he replied:

"We have only had positive experience with Heraeus. We want to further modernise our production and make it more efficient. And when we do this, we will certainly rely on the good advice from the UV experts and work out solutions together with them."