

## **Successful commissioning of an infrared light system from KREYENBORG at Ziegler Organic expands their range of services and offers a plus in food safety!**

As a procurement specialist and processor, the European supplier of organic raw materials, *Ziegler Organic*, brings together organic agriculture from its own contract farming and food producers from industry and trade. *Ziegler Organic* specializes in the processing, packaging, logistics, and sale of raw materials for food. Grains, seeds, pulses, and cereals from organic farming are processed at the company's site in Wunsiedel in Bavaria, Germany. A diverse range of foodstuffs— whether in the form of grain, flour, instant flour, puffed, germinated, or roasted products, meets the highest quality standards.

With the acquisition of an infrared light system (*the FoodSafety-IRD*) from KREYENBORG, *Ziegler Organic* has successfully expanded its wide range of services. The sterilization and roasting of organic raw materials can now be offered in addition to their already established processes of cleaning, disinsectization, milling, mixing and packaging.

Grains, pulses, cereals and seeds from organic cultivation must be treated to deal with pathogenic germs, and the resulting significant health risks that they present must be substantially eliminated in order to comply with European food safety regulations. The aim is to safely reduce and remove germ contamination and other quality impairments in order to guarantee consistently high quality and product safety.

### **Gentle sterilization and roasting using infrared light**

The family-owned company KREYENBORG from Münsterland, Germany, designs and builds machines for the sterilization, pasteurization, roasting, drying, coating and stock protection of foods such as grains, cereals, seeds, spices, nuts and much more.

In their patented *FoodSafety-IRD* (Infrared Rotary Drum), grains or seeds such as sesame, sunflower, or pumpkin seeds are freed from microbial contamination (microorganisms such as salmonella, E. coli and other enterobacteria, molds or yeasts) by means of infrared light. The resulting germ reduction corresponds to a Log5 validation, which is a standard metric in microbiology for the food industry. Afterwards, the product to be treated can also be roasted with the added help of the thermal process



used in the germ reduction step. One advantage is that the *FoodSafety-IRD* can be set to different roasting temperatures.

It is precisely this aspect that is particularly interesting for *Ziegler Organic* in terms of process technology: roasting in different settings allows the gentle refinement of a wide variety of seeds and thereby the creation of many different flavors. Customers of the organic foodstuffs manufacturer - from the baked goods production segment, for instance - can thus create a wide range of recipes. For example, new and innovative grain roll variations can now be generated.

Extensive tests were carried out in KREYENBORG's technical food center to demonstrate the flexibility and quality of the infrared light system with regard to sterilization and roasting of various organic raw materials from *Ziegler Organic*. The analyses and results from these trials showed that the *FoodSafety-IRD* had the right sterilization and roasting capabilities for *Ziegler's* task.

To enable safe sterilization, gentle roasting and a balanced taste experience, *Ziegler Organic* installed KREYENBORG's infrared light-based system at its site in Wunsiedel in the summer of 2021. The produced goods are sold ex-stock. Alternatively, the *FoodSafety-IRD* can be used to handle contract orders of 5 tons or more.

"With this investment, we are keeping up with the trend of the times. In terms of process technology, we have been able to successfully expand our range of services. We treat a wide range of seeds and have good sterilization values. In addition, we are getting more and more requests for roasting of a wide variety of seeds, which we can now fulfil," says Christof Götz, managing director of *Ziegler Organic*.

### **CO<sub>2</sub> neutrality possible**

KREYENBORG's *FoodSafety-IRD* is at the cutting edge not only in terms of improving product properties, but also from an energy-consumption standpoint. The *FoodSafety-IRD* is powered one hundred percent on energy from electricity, which in turn can be obtained from renewable energy sources. Since many companies today already have alternative energy generators, such as solar panels, or obtain green electricity from their electricity supplier, the *FoodSafety-IRD* can be operated in a CO<sub>2</sub>-neutral manner. So, in terms of sustainability and carbon neutrality, the use of infrared light is quite advantageous!



### Plant setup in Wunsiedel, Germany

Another of *Ziegler Organic's* tasks was to configure the infrared plant in an entirely user-friendly manner and in accordance with the company's specifications. This included, among other things, compliance with regulatory emission levels. The infrared light system (*FoodSafety-IRD*) at *Ziegler Organic* also had to be installed there within the existing space.

The necessary preparation for the installation, taking into account all conditions and transport routes, was carried out jointly in order to achieve the best possible result: The commissioning of the infrared plant began with the installation of the big-bag feeding system, where bagged goods were fed into the *FoodSafety-IRD* via a dosing mechanism. The plant setup occupied two floors at *Ziegler*, to occupy as little hall space as possible, and to allow for storage space for the raw material. Due to the modular design of the KREYENBORG plant, this could be managed easily.

After treatment in the infrared rotary drum, the now hot product is brought to room temperature by means of cold air in the cooler, which is part of the KREYENBORG plant. This process step ensures that the product can be stored without developing mold. The big-bags are weighed and can then be safely transported to an intermediate storage area for subsequent transport to various production areas for further processing - to the packaging plant, for example.

Because the infrared light system from KREYENBORG has succeeded in meeting *Ziegler Organic's* requirements in terms of processing range, product safety and quality, the goods they produce can continue to be sold under the organic label with assurance. André Scharf, production manager at *Ziegler Organic*, is satisfied: "The KREYENBORG system works both efficiently and gently and is easy to operate."

KREYENBORG offers its customers the opportunity to experience first-hand the processing of their products in the food technical center at the company's site in Senden (North Rhine-Westphalia, Germany) and to develop process data for new products.

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