

Developing sustainable protein sources: Bühler Insect Technology



Bühler AG, Uzwil

Bühler's aim is to innovate for a better world. The company therefore seeks to harmonise the needs of industry, humans and nature. Bühler is uniquely positioned to transform the challenges of today into sustainable business and help to safely feed the world. Bühler performed the first studies for using insects as alternative protein sources around ten years ago. From 2017 to 2020, Bühler was involved in designing and building the largest insect protein facility in the world. Since then, the Insect Technology division has emerged as its own market segment and continues to drive progress in industrial protein production using insects at the Insect Technology Center (launched in 2022).

In the coming decades, the demand for protein for humans and animals will dramatically increase, but conventional protein sources are not environmentally friendly. Using insect protein plants, Bühler is taking another path.

Every day, adults require 0.8 grams of protein per kilogram of their bodyweight. So, a person weighing 65 kg would need to consume 52 grams of protein daily. Around 380 million people aged between 15 and 85 live in the Euro area. You can do the maths for yourself.

Up to now, people have got their protein from meat, dairy and grains as well as from fish, eggs, vegetables and legumes, which are mostly produced excessively due to high demand. This is costly for the environment.

A way out of the protein dilemma

The Bühler Group, whose industrial specialisms include food and feedstuffs, are facing up to the protein dilemma. With its focus on using insects as a protein source, the company is one of the pacesetters for sustainably producing high-quality protein. Following five years of intensive research and development, as well as active involvement in a large project, Bühler was ready to enter the market: By developing its plants and processes for producing alternative proteins the company initiated a change to a path towards sustainability in the feedstuff industry.

High performance facility for rearing and utilising insects

The latest flagship project in the Insect Technology division is a fully integrated insect protein facility for the bio-technology company Agronutris at the Rethal site, near Reims in France. The facility is fully automated and covers all steps in the process: Brood care, breeding the larvae by feeding them with organic systems, and offspring developed by Agronutris. After breeding, the insect larvae are processed into protein meal and lipids over multiple steps. Running at full capacity, the facility can turn up to 70,000 tonnes of organic waste a year into high-quality protein for the aquaculture and domestic animal feed market.

No compromises in selecting a supplier

Business Developer and insect expert Nicolas Braun explains, "We at Bühler Group had to be sure we had a supplier we could trust for this strategically important project, so we set extremely high standards for the selection process". Bühler has already had positive experiences using Turck's RFID systems and countless other components from the Bachofen range. This time, the focus for the long-standing Bachofen customer was on the humidity sensors

"The insect industry is still in its infancy. That is why we rely on partners like Bachofen in developing these facilities; partners who don't want to fob us off with standard products, but who are ready to put time, creativity and their heart and soul into a project."

Nicolas Braun, Business Development Manager Insect Technology

from Liebherr and turbidity sensors from Anderson-Negele. However, plant engineers required absolute certainty that the components in this application, which were new for all involved, would work properly. They placed high priority on measuring turbidity in the larvae washing process: Only maximum precision in measurements would enable the water supply to be limited to the absolute minimum necessary during the washing process.

Tests and technical input from Bachofen ensure safety

Bühler and Bachofen's experts checked the precision, reliability and efficiency of turbidity sensors through extensive tests at the Insect Technology Center at Bühler's headquarters in Uzwil. The results were impressive. Thanks to close collaboration in the evaluation phase and the detailed knowledge provided by Bachofen, the designers and purchasing managers at Bühler were able to give the

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green light for an informed and assured procurement decision. ■

* Source: Swiss Federal Food Safety and Veterinary Office (BLV)

Established
1860

Head office
Uzwil, Switzerland

Presence
Sites in 140 countries, 105 service stations and 30 production plants worldwide

Number of employees
approx. 12,700

CEO
Stefan Scheiber

Motto
Innovations for a better world

Bachofen customer
since about 1990

Website
www.buhlergroup.com