



Sustainable protein source of the future: KUKA robots support on insect farm in Denmark

Augsburg, 11 April 2024 - Six robots from KUKA are at work on the largest and first commercial insect farm in Denmark. The company ENORM Biofactory breeds black soldier fly larvae there and uses them to produce protein feed - for fish, poultry or pets, for example - as well as insect oil, which can also be used as a food supplement for various animals. The aim is to utilise insects as a climate-friendly source of protein for the future.

In a factory building in the heart of Denmark, 50 kilometres southwest of Aarhus, a literally moving spectacle can be observed day after day and almost 24 hours a day: Millions of fly larvae munch their way through their food in countless boxes, while the containers are constantly moved, stacked, emptied and filled by quietly whirring KUKA robots.

"The larvae of the fly can feed on almost all organic matter. That's why we can feed them with waste products from the Danish food industry that would otherwise be disposed of elsewhere - and turn them into high-quality feed protein for livestock farming," says Jane Lind Sam, COO of ENORM. Insect production is a prime example of a sustainable circular economy with minimal impact on the environment and climate

The robots fill a new box every seven seconds

The containers used in larvae breeding are extremely heavy and need to be filled, emptied and stacked quickly. Finding the best solutions for this was the task of Rolf Tange and his team. Tange is CTO of the Sealing System Group, which has been using KUKA technology for its customers for decades.

"We knew that the flexible Hygienic Oil robots from KUKA would be perfect for ENORM's insect farm," says Tange. "In the first stage, the larvae grow in 30 to 40-centimetre boxes," he explains. After seven days, they are then transferred

Your contact person:

Ulrike Götz Corporate Communications

T +49 821 797 3722

press@kuka.com
kuka.com/iMagazine



to larger boxes measuring more than one square metre. And at this point at the latest, the robots are an indispensable aid to any human: "There are 50 kilos of liquid food in there, then 70,000 larvae are tipped on top," explains Tange. "Not even the fittest worker could manage that weight."

The six KUKA robots fill a new box every seven seconds, i.e. 500 per hour - 20 hours a day. The system is cleaned in the remaining four hours.

Robot system was simulated with 3D model before commissioning

The Sealing System Group team tested important processes virtually in advance using the software from Visual Components. The Finnish company, which has been part of the KUKA Group since 2017, specialises in software solutions for 3D simulation in factory planning. The software from Visual Components was used to simulate the speed and rhythm at which the robots and conveyor systems have to move.

Perhaps factories like this will soon be everywhere. After all, many experts are convinced that ingredients based on black soldier fly larvae can be produced responsibly and have a significantly lower CO₂ footprint compared to other animal protein sources.

KUKA

KUKA is an international automation group with a turnover of around EUR 4 billion and around 15,000 employees. The company is headquartered in Augsburg. As one of the world's leading suppliers of intelligent automation solutions, KUKA offers customers everything from a single source. From robots and cells to fully automated systems and their networking- especially in markets such as automotive with a focus on e-mobility & battery, electronics, metal & plastic, consumer goods, e-commerce, retail and healthcare.