BETTER INSECT SOLUTIONS

POWERED BY BIG DUTCHMAN · INNO+ · SKOV

Easy and successful farming of black soldier fly larvae

in cooperation with

FARMINSECT

Production of high-quality, protein-rich feedstuffs from regionally sourced side streams

Looking for a new, future-oriented money-making enterprise for your farm? Here's an opportunity for you! BETTER INSECT SOLUTIONS provides, in cooperation with FARMINSECT, larvae, technology and know-how for modern, environmentally-safe and efficient insect farming.
The grown larvae can be used for a wide range of applications, for example directly as feed for fish and other livestock. Alternatively, FARMINSECT will market the larvae for you.
In this way, your locally produced high-quality proteins are a sustainable replacement for soy and fish meal and therefore help to save resources and reduce CO_2 emissions.

Standardised modular system

Important components for automated larvae farming:
- computer-controller feeding technology
- robotics
- climate chamber with automatic temperature, humidity and CO_2 control
- crate systems

With these components, insect farming becomes an efficient operation that requires very little time input. You wonder how this works? Well, as long as feed and temperature meet the larvae's needs, they multiply their weight by 250 within just one week – and without any other work from the farmer! The larvae are then fully grown and ready to be harvested. Harvest takes place just once a week. Afterwards, the farmer fills the crates with new feed and a fresh batch of young larvae (production capacity: 150 tonnes of larvae per climate chamber every year).

Computer-controlled liquid feeding system: proven technology

The Big Dutchman liquid feeding system has been used successfully in pig production for many years. For insect farming, the system is also controlled by a computer and mixes the wet feed for the larvae.
Fortunately, larvae do not have high requirements regarding their nutrition: regionally sourced side streams are the perfect feed basis. The feed can be mixed in tanks to create a mixture with a dry matter content between 22 and 25 per cent. Circular economy at its finest!

The feed is mixed in two mixing tanks, controlled by a computer. Both tanks are placed on load cells

Robotics: time savings

Via feed pipes and four feed valves, the required quantity of wet feed is precisely fed into the crates. The robot stacks the crates with the feed on a pallet. From an adjacent pallet, the robot takes the crates with the fully-grown larvae and empties the insects into a sieve. Special sieving technology is employed to separate larvae and their faeces or so-called frass. Frass is a very sustainable and organic fertiliser that helps the soil to build up humus. Alternatively, the frass can be used in biogas plants.

Four feed valves per crate dispense the fresh feed required for one week of larvae growth

The robot stacks the crates with the feed mix on a pallet, ...

... takes a crate with fully-grown larvae from the pallet on the other side ...

... and empties the larvae into a sieve

Separation of larvae and frass

Fully-grown larvae and frass

Larvae are a high-quality, protein-rich feed

Climate chamber with temperature and humidity control

An exactly weighed batch of young larvae is added to the freshly dispensed feed mix. The crates are then ready to be moved into the climate chamber for one week. In the climate chamber, the temperature and humidity conditions must remain very constant. This is guaranteed by a climate computer that controls fresh and exhaust air fans and a heating system. Since the larvae also generate heat, use of a heat exchanger to recover up to 50 per cent of the exhaust air heat is recommended.

Five-day-old larvae are added to every crate

Five-day-old larvae, supplied by FARMINSECT

The crates remain in the climate chamber for one week

Climate, feeding and robot control: fully automatic

Insect farming means:

- larvae have the perfect amino acid profile to be used as feed for pigs and poultry;
- adding insect protein to the diet reduces feather pecking in poultry;
- in the wild, chickens and pigs eat insect larvae, i.e. this is a very natural feed ingredient;
- the larvae contain a high amount of highly-digestible protein;
- a higher degree of self-sufficiency in protein production for animal feed reduces soy imports;
- modules can be added to the production system at any time.

Nutrients in %	Entire larvae fresh/frozen	Entire larvae dried
Humidity content	65 – 70	8 – 12
Crude protein	14 – 18	40 – 45
Crude fat	10 – 12	20 – 22
Crude ash	3 – 4	9 – 10
Carbohydrates	4 – 6	13 – 16
NDF (fibre residue)	4 – 5	12 – 16
- of which chitin	2 – 3	5 – 8
Energy content	5 – 6 MJ/kg DM	12 – 18 MJ/kg DM

BETTER INSECT SOLUTIONS

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