

New EU law is next step towards less meat

FEEDING LIVESTOCK ON FLIES

The market for insect protein in livestock feeds could grow considerably now that the EU has given the green light for insects as an ingredient in chicken and pig feeds. WUR researchers Marcel Dicke and Henk Hogeveen shed light on the future of insects as mini-livestock.

Circular agriculture is one of the key priorities for Carola Schouten, the outgoing Minister of Agriculture, Nature and Food. It is also high on the EU's agenda. Insects could play a significant role in this now that the EU has approved the use of insect protein in livestock feeds. Professor of Entomology Marcel Dicke and personal professor of Business Economics Henk Hogeveen work together in the InsectFeed project to study the opportunities and challenges in the supply chain from insect farm to poultry farm and consumer. The project focusses on the black soldier fly and the house fly, which are the most promising insects for feed producers because the fly larvae can grow on waste streams from the food industry and no additional land is needed. That is a big advantage, especially for poultry feed, says Hogeveen. 'Poultry need high quality protein in their feed. Currently that comes from soya or fishmeal. Soya farming uses a lot of agricultural land and more soya farming means more deforestation. Fishmeal is not very sustainable and is in limited supply. With insects you can turn low-value waste products into a new high-value protein source. And then you become less dependent on soya or fishmeal.' Besides increasing circularity, by breeding insects on waste products you can also

increase the sustainability of the entire agricultural system, says Dicke. 'It makes waste streams valuable so their quality matters more. They must not contain pesticides, for instance, because those could be disastrous for breeding fly larvae.' What is more, Dicke expects the supply of substrate for insects to become broader in the wake of the changed legislation. 'It is up to us to find out which waste streams are good for producing insects on.'

Risks

The EU law makes research easier, says Dicke. On diets, for example. 'Within InsectFeed, we have just completed a large trial in which we gave 1700 broilers different diets: live larvae, dead larvae, only the protein from the larvae, or only the fat. All the diets had exactly the same nutritional value. The livestock feed producers had to strictly separate the production of the diets that included insects from the rest, because you were not yet allowed to use

processed insect protein at that point. That is allowed now, under strict conditions: producers are not allowed to feed the insects on anything they like, breeding must be hygienic and must meet food safety standards.'

And here lies the biggest challenge, according to the InsectFeed consortium: documenting and managing the risks in the chain. There is a limited number of insect suppliers in the Netherlands. Hogeveen: 'If something goes wrong with the supply of insects, they may end up at 20 poultry farms. Food substrates for insects come from different sources, and there is a risk of pollution with mycotoxins or bacteria, for instance.' Hogeveen thinks the substrate suppliers and insect farmers should take precautions against those risks. 'If they don't do that, they are laying the risk at someone else's door.' And track-and-trace systems can ensure that all parties take responsibility for the risks



Text Stijn Schreven

'HOW THE COST PRICE OF INSECT PROTEIN WILL DEVELOP IS ANYONE'S GUESS'

throughout the supply chain, says Dicke. Besides the food safety risks, the consortium will also consider the welfare of insects and the ethics of breeding insects. Hogeveen: 'It sounds wonderful: insects as part of the food cycle, but are we going to like the idea of millions or billions of insects being killed and going into feeds? Not very long ago, we thought of fish as animals with very little feeling.'

Farmers big and small

The Rabobank expects demand for insect protein to increase from today's level of 10,000 tons to half a million tons in 2030. That means the insect industry needs to grow a lot, says Dicke. 'We must scale up massively. There's a lot more to that than just a multiplication factor.'

According to Hogeveen, the EU law opens up a bigger market than the insect industry could ever cope with. He expects that the sector has room for large and small entrepreneurs to exist side by side, from

the small-scale farmer with a shed full of insects that he feeds to his own chickens to a large insect-breeding company with automatized industrial production. Hogeveen: 'Both have their merits. A large scale is efficient and has a lower cost price, while a small scale might have a better image and some advantages for circularity.'

The big question, says Hogeveen, is where insect protein can compete with fishmeal or soya protein in terms of price. 'Soya might get more expensive when

deforestation stops in 2030 and the land surface devoted to soya can no longer be expanded. How the cost price of insect protein will develop is anyone's guess. We have only just started breeding insects on a large scale.'

Insects on our plates

For Dicke, the use of insects as animal feed is not the end goal but a first step. 'The goal remains to reduce meat consumption,' he says. 'We'll achieve real sustainability when it becomes mainstream to breed insects for human consumption. You replace livestock with mini-livestock that can be bred more sustainably. Once the consumer accepts insects as feed for poultry or pigs, you create an awareness that it's not crazy to have insects in our food. That makes the next step easier.' If it's up to the EU, that step will soon come closer. In November, crickets were approved for human consumption in addition to mealworms. ■



The fly can supply protein for chicken feed • Photo Shutterstock