Farmed insects fit in food system

Fly larvae can convert waste streams from agriculture and the food industry (such as potato peel) into insect protein as food for humans or animals. Alejandro Parodi studied the sustainability of the production of insects using waste streams.
The edible insect industry is growing. Insects require less land and contribute less to global warming than other animal products such as milk and meat, especially if the insects are raised used waste streams. Alejandro Parodi (Animal Production Systems) measured emissions of greenhouse gases and ammonia during the cultivation of black soldier fly larvae. The gases are released for example through the insects' metabolism and respiration. Gas emission measurements are needed as only then can researchers make accurate calculations of how efficient insects are in converting food into bodyweight.

'We need to have a debate now the sector is starting to grow'

Almost a quarter of the carbon in the feed was lost via gases if the larvae were fed a diet of yeast, wheat and potato remains. However, almost no nitrogen was released (one per cent).

Manure management

The fly larvae can also be fed on animal manure, which would be a promising solution for manure management. Carbon dioxide and ammonia emissions were higher from pig manure in combination with larvae than from manure without larvae. Despite the loss of nitrogen, the larvae were able to take up 25 per cent of the nitrogen in the manure in their bodyweight; 13 per cent was from the ammonia nitrogen in the manure.
If larvae are raised using waste streams from the agrifood sector, farming black soldier flies can reduce greenhouse gases. However, the use of larvae as animal feed offsets these gains as the waste streams used to farm the larvae could have been fed directly to pigs. 'We need to have a debate now the sector is starting to grow,' says Parodi. 'And not make the same mistakes that were made in livestock farming.' ss

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