

# ‘We don’t yet crave our portion of grasshoppers’

**Insects are an efficient and sustainable source of protein, but they rarely feature on a Western menu. Sociologist of consumption Hans Dagevos is investigating why this is and how it can be changed. ‘As long as consumers don’t come into contact with them, they will not start eating insect products en masse.’**

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**W**e still eat a lot of meat; the average Dutch person gets through about 38 kilos a year. And thanks to the growing world population and increasing prosperity, global meat consumption is expected to increase significantly in the next few decades.

Insects are seen as a sustainable alternative to traditional livestock. Livestock farming takes up a lot of agricultural land and produces greenhouse gas emissions. Producing one kilo of beef requires many times that amount of feed and thousands of litres of water. Insects require much less space and

grow efficiently. Being cold-blooded, they do not need energy to maintain their body temperature, so they use most of their food to grow. Moreover, they can live off waste products and can be eaten almost in their entirety.

## **RICH IN PROTEIN**

Millions of people eat insects, which are an important part of the diet in tropical countries in particular. Insects are rich in proteins, fats, vitamins and minerals. But in the West, there is still little appetite for them, according to research done in 2020 by Hans

Dagevos, a consumption sociologist and senior researcher at Wageningen Economic Research. Dagevos and his colleagues compared the acceptance of alternative protein sources in 2019 and 2015. They found an increase in the intention to eat alternatives such as plant-based meat substitutes, grains or seaweed, but that people didn’t necessarily choose them once they were in the shop. The participants were asked whether their attitude towards certain protein alternatives was positive or negative, on a scale of one to seven. Insects proved to be the least accepted alternative protein source: they did not >



‘The aversion comes largely from the fear of the unknown’

**‘Don’t forget that this kind of transition takes a long time’**

elicit positive emotions. In fact, they aroused the most disgust. But there was an increase in the influence of social norms relating to eating insects, the unwritten codes of conduct. These play an important role when it comes to eating: people want to know, for example, whether others have tried something and whether it is considered normal to do so.

In another study, Dagevos specifically looked at literature on consumer research done since 2019 on the consumption of insects (known as entomophagy) in the Western world. What the study shows could be summed up as: we don’t like what we don’t understand. ‘The hesitance and aversion can largely be explained by the fear of the unknown,’ says Dagevos. ‘Insect products are few and far between in supermarkets and restaurants. As long as consumers don’t come into contact with them, they cannot get to know them so they won’t start eating them en masse.’

### **GROUND UP IN BISCUITS**

There are three approaches you can take to getting consumers to eat more insects, Dagevos explains. There is the indirect route, where pigs and chickens are fed insects and people then eat the meat or eggs. And there is a direct route, where people are served either the whole insect as a dish or biscuits, pasta and soups containing ground-up insects. ‘At the moment, most eyes are on the latter route.’ A striking finding from the literature review, says Dagevos, is that hardly anyone has explored whether people are more drawn to entomophagy if they know about ways of making insect farming circular, such as feeding insects on restaurant waste. ‘I wondered whether that circularity could help make people overcome their fear and disgust.’ Through the involvement of McDonald’s in the project on the ‘Role of insects in



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new production cycles’, which Dagevos’s research is part of, he came up with a design for a study in which test subjects read an online story about a fictitious owner of a fast-food restaurant who wants to make his business operations more sustainable and decides to start taking his food waste to an insect farmer.

The farmed insects then come to the restaurant as an ingredient in various products, from insect burgers to ice cream containing insect protein, and from wraps made with insect flour to chicken nuggets from insect-fed chickens. In total, the more than 1000 participants saw 18 dishes with insects on an illustrated menu. In some products, the insects were clearly visible; in others, like the ice cream, they were present in the form of meal. There were no insect-free dishes.

### **What did you want the participants to tell you?**

‘The study consisted of two rounds. In the first round, we confronted the participants with the products and asked them if they were inclined to order them. Round two came two weeks later, and then we presented the participants with a bunch of statements about sustainable behaviour and how important it was to them. After that, they were asked about eating insects and whether they found it scary. Then they read the information about circularity in the fast-food restaurant and could once again answer the question as to whether they would choose the products.’

### **So does the information on circularity change people’s minds?**

‘We haven’t analysed all the results yet, but

it seems that the idea of circularity doesn't have much impact. If people are very committed to sustainability, the information does affect their willingness to eat insects, but not very much. Another hypothesis was that if people have a very strong aversion to the idea of eating insects, hearing about circularity will not do much to change it. And that proved to be the case. It seems an aversion doesn't just disappear if you give people information about circularity'.

**Not too surprising in itself. You had already concluded from your literature study that information alone will not be enough to change behaviour.**

'That's right. And even if the information aligns with the values of the target group, such as people who already live very sustainably, it does not change their intentions very much, we now see. If people were to choose any of the products, they would go for the dishes in which the insects are least visible. This confirms the idea that it is best to market food containing ground insects, in addition to the indirect route of using insects as animal feed'.

**If insects are only present in a product in processed form, to what extent are people aware of that? And can that then be a prelude to eating unprocessed insects?**

'That will depend on how visible you make the insects on the packaging. If they are mentioned somewhere on the back in the ingredients list, it will not make much difference. Not many people look at the back of the packaging. It's a different story if it becomes part of the marketing and insects are clearly visible on the front of the packaging. Something like what OERei does. That egg producer shows on the box that the chickens are fed on insects. Whether this makes people more or less inclined to eat whole insects themselves, we don't know yet.'

**The last time Wageningen World published an article on eating insects was in 2010. At the time, professor of entomology Arnold van Huis said: 'We are often not taken seriously, but I would like to speak to those critics again in five years' time. Even the conservative Dutch will be tucking into insect burgers.' Fellow professor of entomology Marcel Dicke added: 'Within 10 years the shops will be full of insects.' Well, 12 years have gone by now and not much has come of it. Why is that?**

'Twenty years ago, the idea was that we would start eating whole insects. From recent research we now know that that is still three bridges too far for most people. We don't yet crave our portion of grasshoppers. We will have to focus on the other two routes, I think. Don't forget that transitions like this take a long time. You can see this in the case of the protein transition too. How long has it taken for people to begin to cut down on meat and for the transition to a more flexitarian diet to gain a serious foothold? People would like to eat less meat, but in reality, it happens slowly. Now that the supply of plant-based meat substitutes is increasing, more people are buying these products. So there's a big role for supply.'

**Will insects ever be prominent in the Western diet?**

'I'm going to be a lot more cautious than Van Huis and Dicke now. I don't see it happening in the short term. And if it does happen, I expect it will take decades rather than years. As to what form it will take, that's anyone's guess. But prioritizing the circular economy may help to get insect farming off the ground and of course, it is also important to develop a highly attractive product range.' ■

[www.wur.eu/insects](http://www.wur.eu/insects)

Insects that the EU currently allows to be bred and sold for human consumption:



House cricket (*Acheta domesticus*)



Banded cricket (*Gryllobes sigillatus*)



Migratory locust (*Locusta migratoria*)



Mealworm (*Tenebrio molitor*)



Buffalo worm, also known as the lesser mealworm (*Alphitobius diaperinus*)