



## Insects – an option for a climate-friendly diet?

Insects are a novel food, are rich in protein and nutrients and can be produced in a climate-friendly way.

Date published online: 04/2024



Explainer videos

The media contribution was created by Lukas Reiche as part of his degree in Lebensmittel- und Gesundheitswissenschaften (Food and Health Sciences) (M.Sc.) at the University of Bayreuth for the Ernährungsradar project and is published online in the E-Tutor section. The video consists of his own film and image material. The video was animated by Marie Gehrke as part of her studies in Lebensmittel- und Gesundheitswissenschaften (Food and Health Sciences) (M.Sc.) at the University of Bayreuth. Graphics were computer-drawn and inserted into the video. Subtitles for the video are available in German and English and can be switched on and off via the YouTube settings.

## English translation of the German explainer video transcript

Roasted maggots with herb dip, ants and grasshoppers coated in rose oil or rather a delicious forest ant mash for dessert. Sounds good, doesn't it? Probably most of you feel a certain disgust at the thought of this food variation and can't imagine that our everyday diet could look like this or something similar in the future. But in this video, you can find out why this could be the case.

Besides soy and pulses, insects are also considered a source of high-quality proteins. In contrast to some Asian countries, however, they are not yet found in German cuisine. This consumption, also known as entomophagy, is already an integral part of the daily diet of about 2 billion people, especially in parts of Asia, Africa, and Latin America. Insects belong to the most species-rich group of all living creatures on this planet. In Germany, they make up about 70 percent of all animal species. You may have already had the opportunity to eat insects, for example at a street food festival. Preferably beetles are eaten, followed by caterpillars of butterflies and moths, ants, bees and wasps. Grasshoppers, bugs, and cicadas make up a smaller proportion of human insect consumption.

From a legal point of view, insects and insect products fall under the so-called Novel Food Regulation of the European Union, which requires that these products undergo a health assessment and an authorisation procedure before they can be sold. At the beginning of 2021, the

European Food Safety Authority determined in a risk assessment that mealworm or products processed from it can be consumed without hesitation. However, there is a risk for particularly sensitive people who already have allergies to crustaceans or dust mites. Eating mealworms could trigger allergic reactions in them. From a global perspective, insect consumption therefore has a strong influence in some regions. Furthermore, insects are harmless from a health perspective and are available in sufficient quantities.

### **But what other arguments are there for eating them here in Germany?**

Eating insects would have several advantages for our bodies, because they are rich in unsaturated fatty acids, vitamins, minerals, and fibre. Above all, however, they contain a lot of protein. In addition, insects offer the advantage that they are very easy to digest and contain essential amino acids. Once again, we recommend the video on protein quality from our series.

Furthermore, it would be beneficial for our environment if even more people ate insects regularly. This is due, among other reasons, to the lower greenhouse gas emissions generated by insects in relation to conventional livestock farming. In comparative terms, pigs produce 10 to 100 times more greenhouse gases per kilogram of body mass than mealworms. Moreover, insect farming consumes less land than livestock farming. Initial analyses show that, for example, an area of about 3.6 square metres per year is needed to produce one kilogramme of mealworms. That is not even the size of a ping-pong table. Since mealworms contain about 45 grams of protein per 100 grams when freeze-dried, this means that we would need 18 square metres per year to produce one kilogram of edible protein from mealworms. That is just about the size of a football goal. In comparison, the production of milk requires up to 3.2 times more land than mealworms, chicken up to 2.8 times, pork 3.5 times and beef up to 14 times. Accordingly, insect production requires between 50 per cent and 90 per cent less land.

After all, insects consume less water. Due to climate change, water shortages are expected in many parts of the world in the future. Agriculture is responsible for 70 per cent of global water consumption. Livestock farming consumes a little more than 8 per cent. While about 6,000 litres of water are needed for each kilogram of pork, only about 4,300 litres of water are needed to raise one kilogram of mealworms. Insects are therefore much better prepared for impending droughts than our previously known farm animals.

All these advantages demonstrate: in the future insects are a possible alternative contributing to a climate-friendly diet, conserving resources, and still providing sufficient nutritional value. The European Union has also recognised the potential of insects and, in addition to yellow mealworms, has also approved the migratory locust as a novel food in 2021, allowing it to be sold in dried, frozen, or powdered form, for example.

Perhaps you are now thinking: "The benefits are all well and good, the products are exciting and interesting, but I will definitely not eat insects." To this end, I would like to allay your fears that mere live insects will probably not be on our plates for the present. Instead, more insect-processed products will be on the market, so that you won't notice insects visually. So, take heart and try a little bit of the future.

The current status of insects authorised as novel food in the EU can be found at the following link: [https://germany.representation.ec.europa.eu/insekten-lebensmitteln-die-fakten\\_de](https://germany.representation.ec.europa.eu/insekten-lebensmitteln-die-fakten_de)

## [FC1]Literature

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