

Mealworm instead of mincemeat

The BfR is examining novel protein sources as alternatives to meat, eggs, and cheese.

Whether lupins, insects, or meat derived from cell cultures – alternative protein sources are becoming more important as a way of meeting growing global demand. While there has long been research into plant proteins such as lupins and peas, little research has been done to date into new sources such as insects, algae, and cell-culture-based meat substitutes.

NEW FOOD – NEW CHALLENGES

Many of the new protein sources are from what are termed “novel foods”. They are approved for use as novel foods in Europe only after a thorough risk assessment. “Before alternative proteins can land on plates, their risks must be clear,” says Hermann Broll, a biologist at the German Federal Institute for Risk Assessment (BfR). Possible health risks include allergic reactions and microbiological risks such as viruses and bacteria. Some new protein sources may contain substances that are potentially harmful to health, while other risks may arise during the production process.

PREPARING FOR THE FUTURE

The BfR is already investigating alternative proteins, for example from insects or aquaculture. “We are developing detection methods for alternative protein sources and tests to identify their potential to trigger allergies,” says biologist Broll. “We are not currently doing any research into other sources of protein such as meat substitutes, but we want to be informed and ready for their safe use as food and feed.”

With this work, the BfR is supporting the bioeconomy strategy of the German Federal Ministry of Food and Agriculture as well as international measures such as the European Union Green Deal (EU) and the United Nations Sustainable Development Goals. One goal is the sustainable production of raw materials and products of biological or organic origin.

INTERNATIONAL EXCHANGE

In order to promote international exchange on new protein sources between stakeholders from science, business, and government authori-

ties, in December 2024 the BfR and national authorities for food safety from Iceland, the EU, Singapore Food Agency, and the USA jointly held an international conference in Berlin, Germany. The focus was on consumer awareness as well as safety and nutritional aspects. Alternative protein sources will play a key role in food security, both on Earth and perhaps even in space, where innovative solutions to supply space missions may be required in the future. Ideas have already been floated. —

More information



BfR information
“Proteins”

More information



BfR-Forschperspektive
“Alternative Proteins”
(in German)