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## Global trade influences substances in food

Due to the globalisation of the flow of goods, foods from all corners of the globe may end up on the German market. Depending on their geographical origin, they might contain different concentrations of undesirable substances. How does this influence the intake of substances in the population living in Germany, and is this sufficiently taken into account in standard exposure estimates? An example: the BfR has compared data on kiwi fruits from southern Europe, New Zealand and Chile, which are sold in German shops all year round. One result: kiwis from the EU contain less aluminium than kiwis from non-EU countries. In this example, the variation in concentrations is already taken into account in the standard exposure estimates. But this does not apply to all foods. Exposure assessments have to be refined, where applicable. A prerequisite for this is to better identify and document the food's origin.

### More information:

Fechner, C. et al. 2020. Refinement of dietary exposure assessment using origin-related scenarios. *J Expo Sci Environ Epidemiol* 30: 492–503. DOI 10.1038/s41370-019-0117-6 (open access)

## On the trail of animal ingredients in feed

The addition of animal ingredients in animal feed has been strictly regulated since the largest occurrence of mad cow disease (BSE) with more than 35,000 cases worldwide, particularly in Great Britain at the beginning of the 1990s. In the ANIMAL-ID research project, scientists from the National Reference Laboratory for Animal Proteins in Feed at the BfR, together with project partners, have developed analytical methods to detect certain animal ingredients in feed. The results are three new analytical methods: simultaneous detection of blood plasma from eight animal species, simultaneous detection of cattle's blood plasma, muscle and bone as well as detection of haemoglobin, the colorant of red blood cells, from ruminants. In the follow-up project ANIMAL-ID2, these methods will be tested according to international criteria and their application will be extended to the food sector (e.g. regarding the concentration of various animal ingredients in raw meat products and cooked sausages).

### More information:

Niedzwiecka, A. et al. 2019. A novel antibody-based enrichment and mass spectrometry approach for the detection of species-specific blood peptides in feed matrices. *Food Control* 98: 141–149. DOI 10.1016/j.food-cont.2018.11.036



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## Tracing aquatic animals and molluscs in food

Fish, shellfish and snails are eaten around the world. However, they can trigger allergies. Determining traces of these animal groups in food is a highly complex challenge, since they are among the richest in species. This is the exact aim of AQUALLERG-ID: to completely break down the allergenic proteins and genetic traces of molluscs, crustaceans, fish and, for the first time, insects in food. The three-year project is funded by the German Federal Ministry of Food and Agriculture (BMEL) and has been coordinated by the National Reference Laboratory for Animal Proteins in Feed at the BfR since November 2019. In addition to immunological rapid tests and affiliated partners' state-of-the-art gene decoding technology, DNA-based overview procedures are used at the BfR.

### More information:

[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Research > Third party projects of the BfR > Authenticity testing of food and feed