German Federal Institute for Risk Assessment

Communication 14/2025

30 April 2025

Pesticides and mineral oils in part-baked bread rolls: no need for concern

According to measurements carried out by a magazine, part-baked bread rolls available for purchase contain traces of plant protection product (PPP) residues and mineral oils. In this context, the German Federal Institute for Risk Assessment (BfR) wishes to clarify that detection of residues in foods does not necessarily constitute a health risk for consumers.

The residues of PPP referred to in this case are generally to be expected in foods. However, the article does not contain any names of active substances or information on concentrations that form the basis for risk assessment. No reports of maximum residue levels (MRL) being exceeded have been made. All substances mentioned in the report have been toxicologically assessed and are contained in PPPs that are authorised in Germany and therefore classified as safe.

Additionally, residues of mineral oil saturated hydrocarbons (MOSH) were found in the part-baked bread rolls. The quantities detected are within the range expected in baked goods. In 2023, the European Food Safety Authority (EFSA) published a health risk assessment stating that the current intake of MOSH via foods is not a cause for concern.

According to the BfR, the current state of knowledge provides no evidence of adverse health effects from the consumption of part-baked bread rolls.

Traces of plant protection product residues

Residues of one to three active substances were detected in conventionally produced products at a maximum level of 0.01 milligrams (mg) per kilogram (kg). The report did not provide any more precise information. Even when PPPs are used properly and as intended, residues can still remain in the harvested crop and in the food and feed produced from it. The residues must be low enough that they do not pose a risk to consumer health. PPP residues are permitted in foods up to the legal MRLs. The BfR has extensive scientific knowledge on the effects of multiple residues of PPP active substances. The performed assessments are sufficiently conservative. As no exceedances of the legal MRLs for PPP

active substances are mentioned in the report, BfR does not expect, any adverse health effects from the consumption of the part-baked bread rolls examined. However, a risk assessment in regard to PPP residues is not possible due to the incomplete data.

According to the relevant EU regulations, the health risks for consumers which may arise from use of PPP are assessed by one EU Member State and applied to all other Member States. The actual authorisation of individual PPPs is carried out nationally. In Germany, this is performed by the German Federal Office of Consumer Protection and Food Safety (BVL). The authorisation process involves the Julius Kuhn Institute – German Federal Institute for Cultivated Plants (JKI), the German Umweltbundesamt (UBA), and the German Federal Institute for Risk Assessment (BfR). These institutions perform subassessments within their area of responsibility.

Traces of mineral oils

Mineral oil components can enter into foods in a variety of ways. On the one hand, there are expected transfers into food, for example, authorised food additives, additives used in the manufacture of packaging or during food processing. On the other hand, contamination from environment, agricultural machinery, unsuitable transport or processing methods, and accumulation along the food chain are also possible. Also, mineral oil components can be transferred from recycled cartons to food.

The mineral oil hydrocarbons detected in the part-baked bread rolls according to the magazine are complex mixtures of mineral oil saturates hydrocarbons (MOSH). Mineral oil aromatic hydrocarbons (MOAH) were not detected. In chemical terms, MOSH are branched or unbranched chain-shaped or (partially) ring-shaped molecules consisting only of carbon and hydrogen and having no double bonds (saturated compounds).

In 2023, the European Food Safety Authority (EFSA) updated its 2012 assessment with new data. The result showed that, with the exception of very high doses in animal experiments, no harmful effects relevant to humans were observed. According to current knowledge, the current intake of MOSH through food does not therefore represent a cause for concern from a health perspective.

Further information about PPPs on the BfR website:
Risk assessment of plant protection products
https://www.bfr.bund.de/en/risk_assessment_of_plant_protection_products-197927.html

Further information about mineral substances on the BfR website:
Questions and answers on mineral oil components in food
https://www.bfr.bund.de/cm/349/questions-and-answers-on-mineral-oil-components-in-food.pdf

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. The BfR advises the Federal Government and the States ('Laender') on questions of food, chemicals and product safety. The BfR conducts independent research on topics that are closely linked to its assessment tasks.

This text version is a translation of the original German text, which is the only legally binding version.

Legal notice

Publisher:
German Federal Institute for Risk Assessment
Max-Dohrn-Straße 8-10
10589 Berlin, Germany
T +49 30 18412-0
F +49 30 18412-99099
bfr@bfr.bund.de
bfr.bund.de/en

Institution under public law
Represented by the president Professor Dr Dr Dr h. c. Andreas Hensel
Supervisory Authority: Federal Ministry of Food and Agriculture
VAT ID No. DE 165 893 448
Responsible according to the German Press Law: Dr Suzan Fiack

BfR | Identifying Risks – Protecting Health