

Communication 013/2025

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Trifluoroacetic acid (TFA) in wine According to the current state of knowledge, no impairments to health are to be expected

According to measurements by an environmental protection organisation, commercially available wines contain residues of TFA (trifluoroacetic acid). The average concentration was 0.122 milligrams (mg) per litre (I), the highest value reported was 0.320 mg/l. In response to enquiries from the public, the BfR has made an initial assessment based on the published values.

The result: a person with a body weight of 60 kilograms (kg) would have to drink at least 9 litres of wine a day to exceed the health-based guidance values for TFA of 0.05 mg per kg body weight, based on the highest measured value. The BfR assesses TFA as toxic for reproduction. The responsible national and international scientific institutions and authorities are currently working intensively on this substance on an interdisciplinary basis.

The BfR has no information on the actual sources of the reported concentrations of trifluoroacetic acid in wine. TFA can be formed as a metabolite of various pesticide active substances. However, other routes of entry are also known, for example via fluorinated refrigerants and propellants.

As part of the review of the approval of the active substance flufenacet, an acceptable daily intake (ADI) of 0.05 milligrams per kilogram body weight was derived for TFA. An acute reference dose was not considered necessary by the European Food Safety Authority (EFSA) as part of this procedure. In accordance with the current scientific and technical knowledge, BfR agrees with EFSA's assessment regarding the ADI, but considers it necessary to also derive an ARfD. In the BfR's view, the ARfD should be set at 0.05 milligrams per kilogramme body weight, too. The BfR assesses TFA as toxic for reproduction. The responsible national and international scientific institutions and authorities are currently working intensively on this substance on an interdisciplinary basis.

The average concentration of TFA in the samples measured was 0.122 milligrams (mg) per litre (I), with the highest value reported being 0.320 mg/l. The German Federal Institute for

Risk Assessment (BfR) does not have enough information to check the reliability and reproducibility of the measurements. The sample size (n=39) is small. In response to enquiries from the public, the BfR has made an initial assessment based on the published values. The result: based on the highest measured value, a person with a body weight of 60 kilograms (kg) would have to drink at least 9 litres of wine per day to exceed the health-based guidance values of 0.05 mg per kg body weight.

Underestimated risk: alcohol in wine

In this context, the BfR points out that wine also contains ethanol, a neurotoxic and carcinogenic substance. The German Nutrition Society (DGE) therefore recommends avoiding alcoholic beverages. Those who do consume alcoholic beverages should above all replace large amounts of alcohol. This applies in particular to young people. Children, adolescents, pregnant women and breastfeeding mothers should generally avoid alcohol (in German: <u>https://www.dge.de/fileadmin/Bilder/wissenschaft/referenzwerte/DGE-</u>Position Alkohol EU 2024 10.pdf).

According to the DGE, the risk of consequential damage is high if you consume more than 81 grams of alcohol per week. This is roughly equivalent to the amount of alcohol contained in a bottle of wine. In relation to the 9 litres of wine mentioned above - which a person with a body weight of 60 kg would have to drink at least once a day in order to exceed the health-based guidance values of TFA - it can be assumed that there is a health risk from ethanol with a significantly lower wine intake than a health risk from TFA.

Health-based guidance values for TFA

At the request of the European Commission, EFSA is currently reviewing the health-based guidance values for TFA. EFSA performs this review together with the Member States and the European Chemicals Agency (ECHA), which is responsible for the classification of the chemical properties of TFA (https://www.efsa.europa.eu/de/topics/per-and-polyfluoroalkyl-substances-pfas). The BfR will update its assessment if new findings emerge.

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.

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