



PFAS Pesticides: Threat to Health and the Environment

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PFAS pesticides – context

- **PFAS restriction proposal submitted under REACH exempts PFASs that are active substances used in pesticides** (or biocides) considering that they can be dealt with under the specific regulatory frameworks (Regulation (EC) No 1107/2009 for pesticides)
- **EU pesticide legislation is among the strictest worldwide:** active substances are subject to rigorous risk assessments and periodic reviews. Criteria for approval already consider persistency, toxicity, and bioaccumulation – as well as water pollution, the key properties of concern for PFAS substances.
- **Approval criteria are robust:** substances that are CMRs or endocrine disruptors, persistent organic pollutants (POP), persistent, toxic and bio-accumulative (PBT), or very persistent, and very bio-accumulative (vPvB), are not eligible for approval under EU rules. Neither are those that lead to unacceptable water pollution.

PFAS active substances

- As a result of the strict criteria in the EU legislation on pesticides (and biocides), in the past decade **~20 PFAS active substances have been removed from the EU market** – either by expiration of approval due to lack/withdrawal of renewal application or due to non-renewal decisions (most recently flufenacet).
- As of 1 February 2026, **30 PFAS active substances** (OECD definition) are approved under Regulation (EC) No 1107/2009, of them:
 - 9 are Candidates for Substitution
 - 2 do not contain the C-CF₃ moiety (not potential TFA generators)
- **For 24 the renewal process is on-going** and for six the renewal process will start in the future (two of them in March and April 2026). EFSA Conclusions are available for 4 – discussions with Member States are ongoing.

Exposure to PFAS and TFA

- Exposure and risk to active substances and their metabolites are **assessed as part of the assessment of active substances and plant protection products (PPPs)**. This includes exposure to humans (dietary + non-dietary), non-target organisms and the environment e.g. **surface and groundwater**
- Dietary exposure: EFSA analysed the combined EU multi-annual control programme (MACP) and multi-annual national control programme (MANCP) data extracted for 47 PFAS active substances used currently or in the past for all fruits and vegetables for the years 2011-2021: **in 99% of cases there were no quantifiable results of PFAS**
- The **possible formation/uptake of TFA in crops and the environment** and the possibility for contamination of groundwater is assessed
- If an active substance or toxicologically relevant metabolites lead to groundwater pollution above the limit of 0.1 µg/l in all pertinent scenarios (and cannot be mitigated), it cannot be approved
- Concerns about TFA have grown over recent years. Challenges over its detection in standard regulatory studies have been identified and are being followed up (see later slide)

TFA – context

- It is widely recognised that **TFA is a ‘substance of multiple sources’** - refrigerants and blowing agents (atmospheric deposition via precipitation), industrial output, municipal wastewater, liquid manure, PPPs and others all contribute to environmental exposure.
- **Exposure routes may vary** between Member States and even within areas of individual Member States - depending on the nature of agriculture, industry etc. **TFA is found in areas where there is no PPP use.**
- Swiss groundwater monitoring: *“exceptionally high peak values of over 10 µg/l were recorded at two neighbouring monitoring sites located near a watercourse that also contains treated industrial wastewater”.*
- A 2024 report from Denmark concluded that precipitation contains TFA at a concentration between 0.2 – 1 µg/L and therefore is a major source of groundwater contamination.
- **PPPs are thus not the only source of contamination.** However, it is recognised that they play a role in contamination and therefore it is essential to fully assess and carefully regulate their use.

TFA – exposure vs risk

- Presence of TFA in the environment does not itself indicate risk to health or the environment. Exposure levels must be evaluated against established toxicological reference values.
- The 0.1 µg/L parametric limit for pesticides and their relevant metabolites in groundwater is a quality standard to ensure protection of groundwater as a compartment per se and not a health-based safety limit.
- For TFA, current health-based thresholds are significantly higher: health-based guidance values set by Member States range from 2.2 to 100 µg/L
- **Proposed classification relates to hazard and current concentrations observed by monitoring do not necessarily indicate risk:**

The German Federal Institute for Risk Assessment (“BfR”) noted that *“The toxicological effect was only detectable in animal models at TFA concentrations that were significantly above the concentrations found in the environment. Therefore, adverse health effects are not currently expected when water or food contaminated with TFA is consumed.”*

TFA – ongoing activities

- The process for **harmonised classification and labelling** for TFA is ongoing in ECHA – legal deadline for the RAC Opinion is 26 October 2026
- The Commission mandated EFSA to **re-assess the toxicological reference values** for TFA. A public consultation on the draft assessment was already carried out. (**DL: 31 July 2026**)
- The Commission has sent a second mandate to both EFSA and ECHA, focused on the adequacy of current test methods to detect the **formation of TFA in soil and water (DL: 1 June 2027)**
- The Commission has signed an agreement with the World Health Organization to **determine the relevant PFAS in drinking water** and recommend health-based values for those relevant PFAS
- In parallel, the Commission launched a study to analyse **treatment techniques** and their related costs for the removal of PFAS (and TFA) from drinking water
- From 12 January 2026, Member States must monitor 'Sum of 20 PFAS' (not including TFA) **or** 'PFAS Total' (including TFA) in drinking water at the tap to ensure compliance with limits set in Directive 2020/2184 on Drinking Water

What next?

- Individual assessments of PFAS active substances will continue – full evaluation of the properties of the active substances as well as metabolites, including TFA, will be undertaken
- A case-by-case approach is justified since the formation of TFA varies depending on substance and soil
- Conclusions from the mandates sent to EFSA/ECHA will be taken up in risk assessments
- In the meantime, Member States can act at any time to amend or withdraw authorisations of PPPs – as recently done by Denmark (based on TriFluPest). Other Member States are also carrying out reviews: NL, SE, NO, FI.
- PFAS and TFA remain standing points on the Standing Committee agenda for discussion of developments with Member States - 3 Member States have called for early review under Art. 21 of 6 substances not currently under renewal, but so far not much support from others

Thank you for your attention!

Further information:

- Trifluoroacetate (TFA): Laying the foundations for effective mitigation – Spatial analysis of the input pathways into the water cycle. German Environment Agency. 167/2023
- <https://www.bafu.admin.ch/bafu/en/home/topics/water/groundwater/groundwater-quality/tfa-im-grundwasser.html>
- Albers, C. N. (2024). Diffus grundvandsforurening med trifluoreddikesyre (TFA). GEUS. Danmarks og Grønlands Geologiske Undersøgelse Rapport Vol. 2024 No. 4 <https://doi.org/10.22008/gpub/34725>
- TriFluPest. Trifluoreddikesyre (TFA) fra pesticider. Anders R. Johnsen, Trine Henriksen og Christian N. Albers, De Nationale Geologiske Undersøgelser for Danmark og Grønland (GEUS) ISBN: 978-87-7038-688-3