



Published on *Horizon 2020* (<https://ec.europa.eu/programmes/horizon2020>)

---

Wednesday, 4 June, 2014

They may sound exotic or obscure to most of us, but they are an integral part of our everyday lives, whether we know about them or not. Known as perfluoroalkyl substances (PFAS), they are chemical compounds which are used in a wide variety of industrial products, from food and drink packaging to fire-fighting foams, to dirt- or water-proofing treatments for carpets or clothing. The drawback is that these chemicals have now spread throughout the environment. Often the contamination originates in the effluent from wastewater treatment carried out at industrial or municipal sites.



[1]

As a result, PFAS are now found in most water- and land-based ecosystems.

Many types of food and beverages, including simple drinking water, are thought to be contaminated to some degree. The European Food Safety Authority (EFSA) has set limits for PFAS intake, and current exposure estimates are believed to be well below these thresholds, however our understanding of the routes by which PFAS enter the human body and their potential effects on human health remains limited and there has also been a lack of sufficiently sensitive detection methodologies for quantifying PFAS exposure.

The EU funded research project PERFOOD has brought together a team of specialist European research institutes with expertise not only in the chemical analysis of PFAS but also in food consumption, water quality and food processing and packaging, PERFOOD had three core aims. The

first was to develop improved tools to detect the presence of PFAS and use these to gain a better understanding of the presence of PFAS in our diet. The second was to understand better how PFAS are transferred from the environment into our food and beverages. The third was to investigate how much, if any, of dietary contamination by PFAS is caused by materials that come into contact with food, such as packaging materials or the utensils used to prepare them, and how much by food and water processing.

The project team achieved significant progress in all three of these aims, including an improvement in the ability to detect PFAS in food and drinking water. *“As a result of the work of PERFOOD, detection limits were lowered by about a factor of 100, to the picogram [one trillionth of a gram] per gram level, or even below,”* explains PERFOOD’s project coordinator, Professor Pim de Voogt of the University of Amsterdam in the Netherlands.

By carrying out parallel studies at different locations in Europe, PERFOOD scientists found that certain foods may be more highly contaminated with PFAS than others. These include seafood and meat products. Moving on to examine the processes by which these PFAS may have entered the food chain, the project team found that, in cattle, PFAS could be transferred from feed and water into the meat and milk consumed by humans, while vegetables take up PFAS from water. Farmed fish, meanwhile, appear to have much lower levels of PFAS than wild fish as their feed contains low concentrations of PFAS.

Last but not least, the PERFOOD research team established a possible link between food contact materials with a fluorine-based coating and raised PFAS levels. These contact materials include baking paper, wrappings for butter and cheese, greaseproof papers and fast food packaging.

The pioneering work of the PERFOOD project has shed important new light on a subject of great importance for human health.

**See also:**

[CORDIS](#) [2]

**Project:**

PERFluorinated Organics in Our Diet

**Project Acronym:**

PERFOOD

---

**Source URL:** <https://ec.europa.eu/programmes/horizon2020/en/news/stepping-fight-against-food-contamination>

**Links**

[1]  
[https://ec.europa.eu/programmes/horizon2020/en/system/files/newsroom/fotolia\\_52750875\\_subscription\\_small\\_6964.jpg](https://ec.europa.eu/programmes/horizon2020/en/system/files/newsroom/fotolia_52750875_subscription_small_6964.jpg)

[2]  
<http://cordis.europa.eu/projects/index.cfm?fuseaction=app.details&TXT=227525%20&FRM=1&STP=10&SIC=&PGA=&CCY=&PCY=&SRC=&LNG=fr&REF=91268>