



**VYSOKÁ ŠKOLA
CHEMICKO-TECHNOLOGICKÁ V PRAZE**

Overview of EMERCON (EMERging CONtaminants) project activities

Identification and quantification of emerging organic contaminants in the Czech aquatic ecosystem and food market supply.

*With focus on perfluorinated alkylated compounds (PFC):
EMERCON*



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Emerging Contaminants (EmerCon)

Identification and quantification of emerging organic contaminants in the Czech aquatic ecosystem and food market supply.

With focus on perfluorinated alkylated compounds (PFC): EMERCON

Donor of the grant: National Training Fund
Norway Grants & EEA Grants - Research Support Fund

Focus area of research: 4.3 R&D in food safety and quality

Registration number of the project: A/CZ0046/2/0026

MAIN GOAL

The here presented project aims to provide the first thorough data collection on fish contamination by PFC, not only predominant PFOS and PFOA but also other PFC compounds, in the Czech Republic, including complete data of the range of fresh water fish species contamination, both free living and aquaculture species.

Since no data on PFC levels in food from the Czech market are available, monitoring of PFC levels in selected food products will also be performed and an assessment of the daily intake of PFC by humans due to the consumption of fish and various food products will be provided to receive the first data in the Czech Republic on the PFC contaminated food related risks.

Appropriate analytical methods will be developed and applied enabling an assessment of the spreading of PFC in fish in water bodies of the Czech Republic and selected food products at the Czech market. These methodologies will be available for other analytical labs involved in the project and all interested regulatory bodies and other stakeholders in the Czech Republic.

Last update: 15.05.2010

NEWS

[NEWS ARCHIVE](#)

25-26 MAY 2010

EMERCON project workshop on Quantitative trace analysis of Perfluorinated compounds (PFCs) in food and environmental matrices will be organised at VSCHT Praha, Czech Republic.

[More >>>](#)

22 FEB 2010

EMERCON project evaluation meeting has been organised at NILU, Kjeller, Norway.

[More >>>](#)

12 FEB 2010

EMERCON activities have been presented at seminar Fast chromatographic methods for many analytes in various matrices "Trend in food and environmental analysis" (Rychlé chromatografické metody pro mnoho analytů v různých maticích: „Trend v analýze potravin a životního prostředí“).

[More >>>](#)



PROJECT PARTNERS:

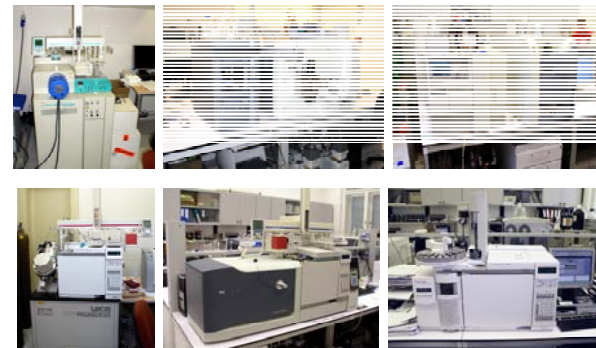
Institute of Chemical Technology Prague, Czech Republic

Project manager: Prof. Ing. Jana Hajšlová, CSc.



www.vscht.cz

- Participation in many in many national and international research projects
Development / optimization of modern analytical methods for assessment of food quality and safety
- Accreditation (EN-ISO/IEC 17025)



Norwegian Institute for Air Research, Oslo – Kjeller & Tromsø, Norway

Contact person: Prof. Dr. Roland Kallenborn



www.nilu.no

- Participation in many in many national and international research projects
The main topics in which NILU participates are related to radiation, global climatic changes, satellite validation, environmental chemistry urban pollution problems, regional and global dispersion of environmental toxins, standardization and monitoring methods, electronic distribution of environmental data and environmental influence on building materials.
- Accreditation (EN-ISO/IEC 17025)



State Veterinary Institute, Prague, Czech Republic

Contact person: Ing. Jan Rosmus



www.svupraha.cz

- National Reference Laboratory (NRL)
(i) pesticides (animal origin and high fat content samples)
(ii) PAHs (polycyclic aromatic hydrocarbons)
- Accreditation (EN-ISO/IEC 17025)



PROJECT ACTIVITIES:

PROJECT MANAGEMENT

Project manager: Prof. Ing. Jana Hajšlová, CS.
Project assistant: Ing. Monika Tomaniová, Ph.D.

COLLECTION OF SAMPLES

Activity leader: Ing. Jan Rosmus
Participants: ICT Prague, SVI Prague, NILU



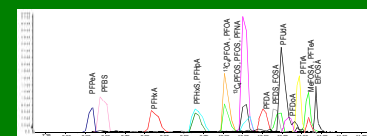
PERFLUORINATED HYDROCARBONS LEVELS IN FOOD SAMPLES

Activity leader: Dr. Rolland Kallenborn
Participants: ICT Prague, SVI Prague, NILU



EVALUATION OF OBTAINED RESULTS

Activity leader: Ing. Jana Pulkrabová, Ph.D.
Participants: ICT Prague, NILU



TECHNOLOGY TRANSFER

Activity leader: Ing. Monika Tomaniová, Ph.D.
Participants: ICT Prague, SVI Prague, NILU

PROJECT AIMS:

Contribution to the national and international scientific knowledge on PFC in the Czech food basket through:

- ⇒ Development and optimization of new ultra-trace analytical methods for the compound specific quantification of selected PFC compounds
- ⇒ Evaluation of potential hazardous effects of PFC on humans and environment through own investigations as well a literature studies
- ⇒ Providing an effective knowledge and method transfer between involved analytical laboratories in Norway and the Czech Republic

Research area:	4.3 R&D in food safety and quality
Project duration:	08/06/2009 – 31/12/2010 (19 months)
Budget:	€ 188 850 granted 90 % (€ 169 965)

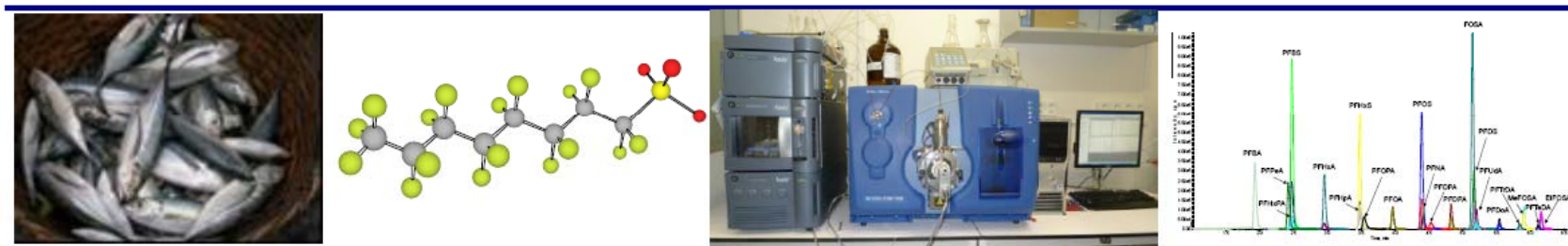


PROJECT OBJECTIVES:

The overall objectives of the project are:

- To develop robust and reliable analytical tools for the determination of PFC in food items,
- To use developed methods to qualify and quantify PFC in fish and selected food products,
- To assess PFC dietary intake by humans in the Czech Republic.

The methods are planned to be utilised for a first screening of PFC levels in the Czech environment.



PROJECT SUB-OBJECTIVES:

The main project sub-objectives are:

- To develop robust, easy-to-use, reliable, sensitive, and where necessary, new analytical methods for quantification of a suite of fluorinated compounds including both predominant PFOA and PFOS and nonpersistent precursors in a wide variety of matrices, including fish and different food matrices.
- To ensure that the quality of the data from analytical measurements meets criteria related to reproducibility, repeatability and traceability.
- To organize inter-laboratory comparison to confirm applicability of developed analytical methodologies into the practice and support knowledge transfer.
- To use the analytical methods to produce a database on PFC levels in fish and other food matrices.

- To make an assessment of the daily intake of PFC by humans in the Czech Republic due to the consumption of fish and selected food products.

- *Two free living fish species, representing omnivores, **chub and bream**, and two farmed **fish, carp and trout**, will be collected to distinguish possible influence of feeding habits and living conditions on PFC levels during April – June 2010.*

- ***Sampling sites** have been selected with respect to the evaluation of different contamination levels supposing areas with background levels, highly polluted areas close to expected sources of contamination and fish farming ponds.*

- ***Fish products** to detect influence of possible environmental contamination, processing technology applied and packaging materials used have been also analyzed.*

- To compare PFC levels found in the Czech Republic aquatic environment with the ones in water bodies of Norway and other European and non-European countries.
- To create website dedicated to the sub-project where methodology, database with results obtained and other information will be available for all interested stakeholders, particularly to relevant control bodies in the Czech Republic and governmental institutions, to support technology transfer.
- To identify potential suspected point sources of PFC to the aquatic environment system of the Czech Republic based on database prepared with the information on PFC contamination in fish.