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

eea grants
iceland liechtenstein norway

National Training Fund

norway grants
norwegian financial mechanism

www.emercon.cz

PROJECT PARTNERS:

Institute of Chemical Technology Prague, Czech Republic

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

VYSOKÁ ŠKOLA CHEMICKO-TECHNOLOGICKÁ V PRAZE

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

NILU

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

PRAHA SVÚ

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)

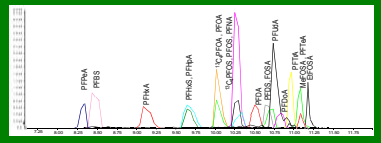
PROJECT ACTIVITES:

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

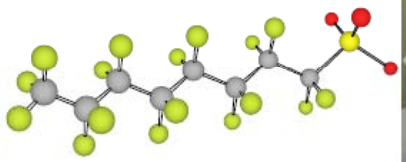
Research area:	4.3 R&D in food safety and quality
Project duration:	08/06/2009 – 31/12/2010 (**19 months**)
Budget:	€ 188 850 granted 90 % (€ 169 965)

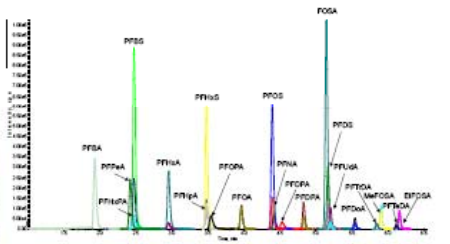
PROJECT OBJECTIVES:

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.