

Finnish National Reference Laboratories for Heavy Metals in Food and Feed

Introduction

Finnish Food Safety Authority Evira and Finnish Customs Laboratory functions as national reference laboratories for investigating the safety of foods and feeds. Evira operates as national reference laboratory in the research field of food of animal origin and feed, and the Customs Laboratory in the research field of food of plant origin, respectively.

The aim of Finnish Food Safety Authority Evira is to ensure food safety, promote animal health and welfare, and develop the prerequisites for plant and animal production, and plant health. The national reference laboratory department of Evira is Chemistry and Toxicology Research Unit. Two chemists and five laboratory technicians takes part in the NRL work.

Finnish Customs Laboratory examines the compliance and safety of consumer goods and non-animal foods. The Customs Laboratory also performs analytics concerning illegal imports, customs duties and taxation for Customs. The NRL team consists of two chemists and four laboratory technicians.

Analytics

Both laboratories are testing laboratories accredited by FINAS (Finnish accreditation Services) according to ISO/IEC 17025:2005.

The accredited analytical methods in Finnish Food Safety Authority Evira:

- Mercury (Hg) in food, feed and fertilizers with AAS-technique
- Elements (As, Cd, Co, Cu, Pb, Mn, Zn, Se) in samples of animal origin, food and feed with ICP-MS -technique
- Inorganic arsenic (As) in rice with HPLC-ICP-MS -technique
- Arsenic compounds in fish and baby food with HPLC-ICP-MS -technique

The accredited analytical methods in Finnish Customs Laboratory:

- Elements (As, Pb, Cd, Hg, Sn, Fe, Ca, Zn, Al) in food of plant origin with ICP-MS -technique

Proficiency tests, training and workshops

Proficiency test are not arranged by Finnish Food Safety Authority Evira nor Finnish Customs Laboratory. However, one of Evira's tasks is to collect and follow-up the success of official national laboratories in comparative tests. Also, Evira prepares a newsletter regarding current topics from the point of view of reference laboratory. The newsletter is sent 3-4 times per year to all official national laboratories approved by Evira.

Evira organizes different workshops and training courses e.g.

- Workshop regarding current topics in the laboratory field together with FINAS and Valvira (National Supervisory Authority for Welfare and Health)
- Relevant training courses, workshops and seminars together with NMKL (Nordic Committee on Food Analysis) e.g. sampling seminar
- Training courses for authorized inspectors (samplers)



Picture: Satu Mykkänen, Evira

Collaboration with International Organizations

Evira and the Customs laboratory take part in CEN (European Committee for Standardization) technical committee working groups. Evira participates in standardization work of fertilizers and liming materials (CEN/TC 260/WG7 - Chemical Analysis and CEN/TC 260/WG 8 - Organic and organo-mineral fertilizers). Both Evira and The Customs Laboratory follow the work of CEN/TC 275/WG10 - Elements and their chemical species.

Evira participates in cooperation with Nordic countries (Sweden, Norway, Denmark and Iceland) related to the food industry. In addition, the Baltic countries participate in some working groups. One of the main groups, NMKL (Nordic Committee on Food Analysis), compiles methods of analysis and guidelines and organizes training courses within the field of food analysis. The committee also acts as a network for Nordic food analysts.

Evira acts as one of the partners in the European Research Infrastructure project METROFOOD-RI. The general objective of this project is to enhance scientific excellence in the field of food quality and safety by promoting metrology in food and nutrition.

Functioning as a national reference laboratory for chemical elements in food of animal origin, Evira participates yearly in the workshops arranged by the EURL-CEFAO (The European Union Reference Laboratory for Chemical Elements in Food of Animal Origin).

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