School students working as environmental scientists-”Global POP”

Dioxins in fish with BDS CALUX

Eldbjørg Sofie Heimstad[1], Gaute Grønstøl[2], Karl Torstein Hetland[3], Javier Martinez Alarcon[4], Charlotta Rylander[1,5] and Espen Mariussen[4,6]

1NILU, The Polar Environmental Centre, Tromsø. 2Centre of Schools' Science Education, University of Bergen, Bergen. 3 Norwegian Centre for Science Education, Oslo. 4Norwegian Institute for Air Research (NILU), Kjeller. 5Institute of Community Medicine, University of Tromsø, Tromsø. 6Norwegian Defence Research Establishment (FFI), Kjeller

Objectives

- Increase youth's interest for environmental issues and natural sciences
- Pupils participate with field work and data publishing in a research project
- Investigate dioxins and dioxin-like compounds (CALUX) in fish common for consumption

School activities

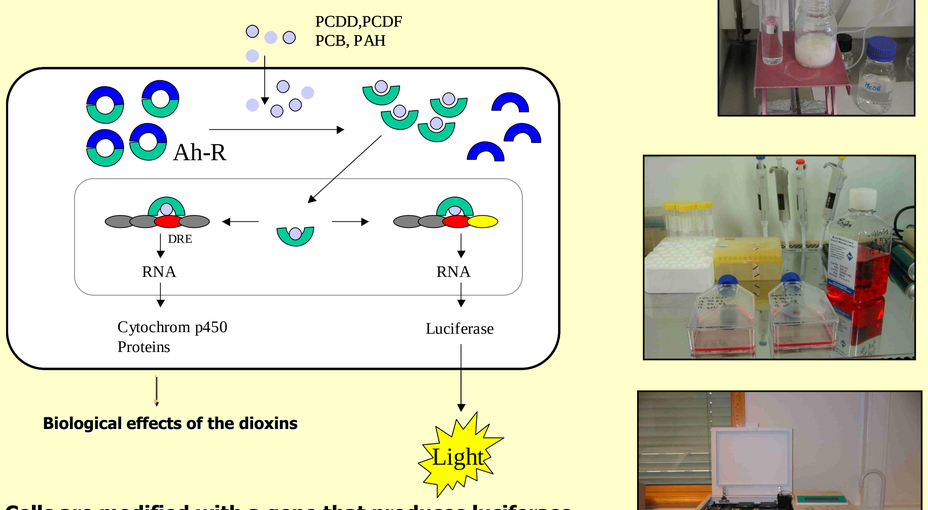
- Registration on the project web site sustain.no/projects/globalpop
- Fishing- 3 fish of same species- common as food item
- Scientific correct sampling of 3 fish filets with clean (sterile) scalpel and gloves
- Record and publish important field- and fish-data to project web site
- Packing, marking and shipment of sample to NILU
- NILU analyses the samples (BDS CALUX method)
- NILU publishes results on the web site with corresponding data reported from schools
- School reports and presentations on the project web site

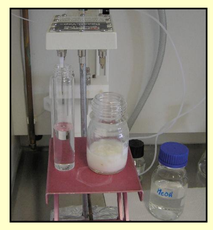
Acknowledgements

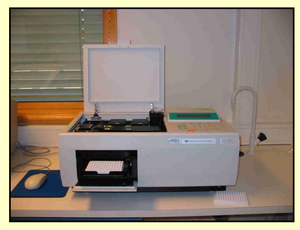
We are very grateful to all the schools for their good scientific work with fish sampling, important data collection and publishing.

Funding from the Research Council of Norway through the International Polar Year, project no.182184, is highly acknowledged.

BDS DR CALUX use a line of liver cells from rat to analyze dioxins

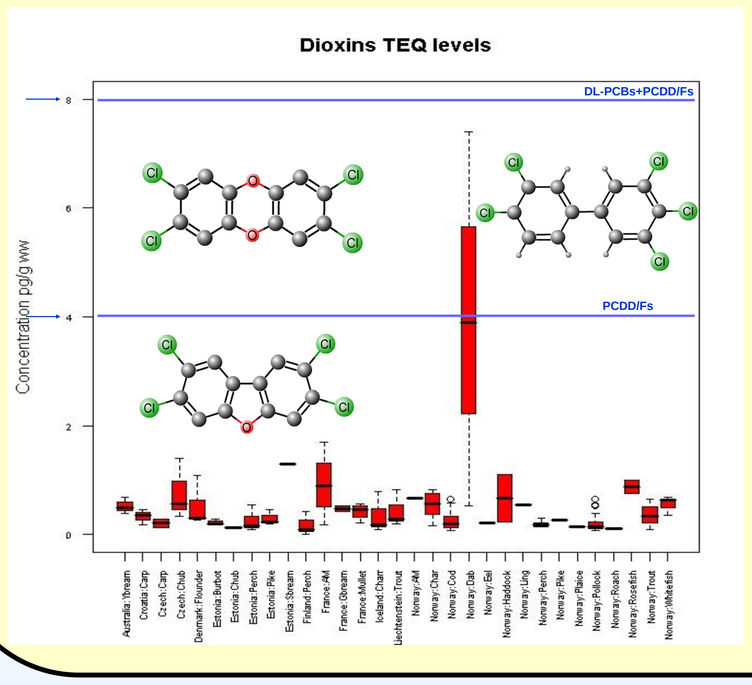


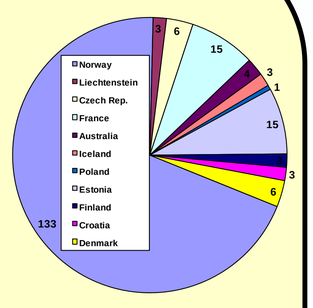




Cells are modified with a gene that produces luciferase
The cells give light under exposure with dioxins
Quantity of light given by cells is a measure of dioxins

Results

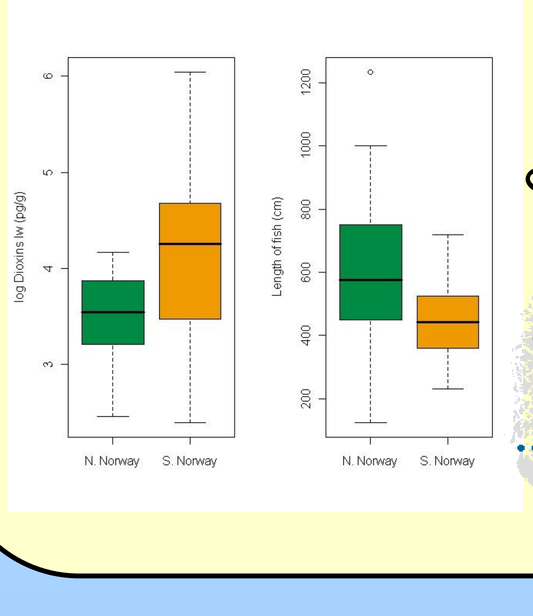


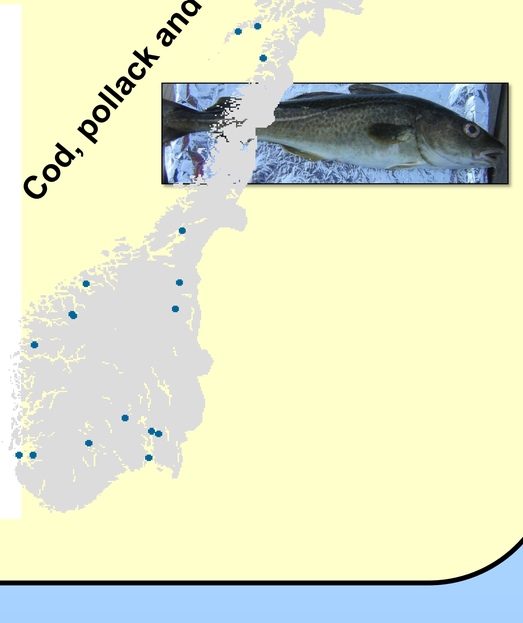


May 2009:
Countries: 11
Schools: 51
Fish samples: 192

Results

N Norway: n=27, S Norway n=43





sustain.no/projects/globalpop