



So far, more than 9200 data points have been generated under the UNEP-WHO agreement. The results are from pooled samples whereby one country is represented by one data point per sampling round. Figure 5 shows the concentrations of PCDD/PCDF (in pg WHO₁₉₉₈-TEQ/g fat) according to declining concentrations. It can be seen that the highest concentrations were found in relatively old samples such as from 1992 (Belgium, Spain, UK, Canada). Among the developing countries, the sample from India (collected in 2009) had the highest median concentration.

Figure 5: PCDD/PCDF in pools of human milk

Discussion

At present, the global data base is not sufficient to establish a clear relationship along the pathway release from source – environmental concentration (*e.g.*, in air or water) – human body burden. It also has to be taken into account that the POPs presently listed in the annexes of the Stockholm Convention have different chemical-physical properties, different sources and pathways in the environment. Although largely, food intake is the most important source of human exposure, for PBDE and other brominated flame retardants inhalation may contribute significantly to the body burden. For PFOS, water is the major transport medium and pathway for human exposure. Therefore, assessments source-environment-humans have to be done on compound/POPs-specific basis and often on congener-specific basis.

Despite many efforts, the quality and coverage of source inventories vary highly; the most satisfactory are for PCDD/PCDF; they are also available in quite large numbers (presently close to 90 national inventories). A further complication is that due to long-range transport and transformation in the environment, patterns of POPs at source can be different from patterns at receptor. Finally, only for very few POPs, human risk assessments have been undertaken.

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References:

- 1 Stockholm Convention on Persistent Organic Pollutants (2001 and updates): www.pops.int
- 2 National reports are accessible from the following webpage
<http://chm.pops.int/Countries/Reporting/NationalReports/tabid/3668/Default.aspx>
- 3 National implementation plans are accessible from the following webpage
<http://chm.pops.int/Implementation/NIPs/NIPTransmission/tabid/253/Default.aspx>
- 4 UNEP (2015): Initial Situation Analysis on DDT – Status 2015; accessible for download as document UNEP/POPS/COP.7/INF/7 from
<http://synergies.pops.int/2015COPs/MeetingDocuments/tabid/4243/language/en-US/Default.aspx>
- 5 UNEP (2015): Preliminary assessment of efforts made toward elimination of PCB; accessible at
http://www.unep.org/chemicalsandwaste/Portals/9/POPs/PCB/Preliminary%20Assessment%20of%20Efforts%20Made%20Toward%20the%20Elimination%20of%20PCB_UNEP%20Chemicals%20Branch_2015_Final.pdf
- 6 Second regional reports (2015), accessible as UNEP/POPs/COP.7/INF.38 from
<http://synergies.pops.int/2015COPs/MeetingDocuments/tabid/4243/language/en-US/Default.aspx>.
- 7 UNEP (2015), BRS Secretariat: POPs GMP data visualization and analysis, available from
<http://www.pops-gmp.org/>
- 8 Fiedler H (2015): *in*: Recent advances in the environmental chemistry of dioxins and related POPs, Springer