Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – 3rd and 4th Round
ASSESSMENT ON PERSISTENT ORGANIC POLLUTANTS – THIRD ROUND 2016/2017 – NON-DL POPS

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OVERVIEW

- 3rd Exercise in series
- 175 Laboratories from 66 countries registered: a sharp increase in comparison to the previous assessment with 105 laboratories
- Test materials:
  - test solutions
  - sediment
  - air (extract)
  - water (PFASs only)
  - fish
  - human milk
  - human plasma (PFASs only)
SATISFACTORY Z-SCORES

- OCPs
- PCB
- PCDD/PCDF
- PBDE
- HxBB
- Toxaphene
- HBCD
- PFAS

% satisfactory data

- Test solution
- Sediment
- Fish
- Human milk
- Human plasma
- Air extract
- Water
Dieldrin in sediment, per method

Graph showing the concentration of dieldrin in sediment, categorized by ECD and MS methods, with laboratory codes.
DIELDRIN IN FISH - EXPERIENCED AND NEW LABS
P,P′-DDE IN SEDIMENT, EXPERIENCED AND NEW LABS
PCB 153 IN SEDIMENT, PER METHOD
PBDE AIR

Concentration in ng/g

Asian WEOG GRULAC Africa CEE

Laboratory code
**PBDE AND PBB RESULTS (CV%)**

<table>
<thead>
<tr>
<th>Congener</th>
<th>Test solution n=39</th>
<th>Sediment n=27</th>
<th>Fish n=23</th>
<th>Human milk n=10</th>
<th>Air extract n=25</th>
</tr>
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<tbody>
<tr>
<td>47</td>
<td>16</td>
<td>75</td>
<td>20</td>
<td>31</td>
<td>9</td>
</tr>
<tr>
<td>99</td>
<td>8</td>
<td>96</td>
<td>8</td>
<td>49</td>
<td>12</td>
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<td>100</td>
<td>19</td>
<td>92</td>
<td>15</td>
<td>35</td>
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<tr>
<td>183</td>
<td>21</td>
<td>23</td>
<td>14</td>
<td>32</td>
<td>18</td>
</tr>
<tr>
<td>BB153 (n = 5 - 9)</td>
<td>37</td>
<td>429</td>
<td>20</td>
<td>9</td>
<td>51</td>
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</tbody>
</table>
### HBCD RESULTS (CV%)

<table>
<thead>
<tr>
<th>Diastereomer</th>
<th>Test solution</th>
<th>Sediment</th>
<th>Fish</th>
<th>Human Milk</th>
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</thead>
<tbody>
<tr>
<td>α</td>
<td>14</td>
<td>48</td>
<td>21</td>
<td>167</td>
</tr>
<tr>
<td>β</td>
<td>13</td>
<td>91</td>
<td>120</td>
<td>-</td>
</tr>
<tr>
<td>γ</td>
<td>12</td>
<td>36</td>
<td>97</td>
<td>-</td>
</tr>
</tbody>
</table>
PCB RESULTS OF LAST THREE EXERCISES

![Bar chart showing PCB results for different categories over the years 2010/2011, 2012/2013, and 2016. The categories are test solution, sediment, fish, human milk, and air extract. The chart displays the coefficient of variation (CV%) for each category across the different years.](chart.png)
OCP RESULTS OF LAST THREE EXERCISES
CONCLUSIONS AND RECOMMENDATIONS AFTER 3 ILS

• Laboratories need to carry out POP analyses on a regular basis in order not to lose the built up knowledge. Governments should support their laboratories herein.

• Laboratories are encouraged to train their own technicians by repeatedly analysing certified and internal reference materials.

• Laboratories analysing OCPs are encouraged to use GC-MS and $^{13}$C labelled standards to improve their analysis.

• As it is extremely difficult to obtain test materials with a relevant contamination degree for all POPs, in future materials may need to be fortified for some of the POPs, in order to provide materials with realistic levels.

• Continuation of this interlaboratory assessment studies is needed to monitor and improve the overall level of performance of POPs analysis.

• Training, instruction and capacity building is necessary in the developing regions (CEE, Africa, GRULAC and parts of the Asian and Pacific region) for all POPs with particular attention to clean up of difficult matrices such as sediment and fish.
Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – Fourth Round 2018
Test samples

- Fish
- Water
- Test solutions
- Sediment
Preparing test samples (Fish)

Pike perch originating from a river in The Netherlands
Preparing test samples (Fish)
Preparing test samples (Fish)
Preparing test samples (Fish)
Preparing test samples (water)
Preparation of test samples (status)

- Fish:
  - Is ready for all compounds except Toxaphene

- Water:
  - Ready

- Test solutions:
  - Compounds are ordered and delivered

- Sediment:
  - Sediment has been approved for all compounds
  - Analyses for PFASs suitability is going on right now