John P's talk on Canadian RA for BPA

- John P's talk on Canadian RA for BPA
  - Ministerial Challenge programme
  - Part of 5-year plan to assess ~190 substances
  - WoE and precautionary approach (not just based on RCR)
  - Peer review and public consultation
- Met criterion for inherent ecotoxicity (chronic tox <0.1 mg/L)

Canadian concs

- Mostly below ug/L level
- Sludge – mostly above mg/kg level??
- Considered to be P under anaerobic conditions
- Does not meet B criterion

Canadian Ecotox

- Standard endpoints similar to those used in EU RAR
- ED
  - Extensive literature on this
  - Most effects between 1 to 1000 ug/L....but some data on effects below 1 ug/L – although some lack of consistency in results between organisms, study protocols, etc.

RCRs

- RCRs below 1 for most receptors/compartments
- RCR of 9.9 for pelagic orgs
  - CTV of 1.75 ug/L used (103d LOEC reduced semen quality) – felt more certain and more relevant to Canada then snail data
  - PEC = 1.???
- Secondary poisoning mamm receptors
  - RCR mink = 1.25 to 12.5
  - RCR otter = 4.2 to 42

Canadian next steps

- Not a prohibition
- Probably controls for pollution prevention & WWTP.
- 2 years after decision on assessment

Peter Matthiessen

- Presentation available
- Molluscs imp group
- OECD DRP under prep UK/Germany
- Partial & full lifecycle tests should be developed (not enough knowledge of mollusc endocrinology to allow diagnostic screens)
- Looked at 21 spp, candidates are
  - P. antipodarum (New Zealand mudsnail)
  - L. stagnalis (great pond snail)
  - C. gigas (Pacific oyster)
- DRP published in 2010 & validation probably take at least 5 years (e.g. to check on seasonality) – maybe 10 years to internationally validated test.

Is the EU hazard assessment of BPA up to date? If not, what do new studies show that might alter its conclusions

- Yes, up to date.
- Snails – what to do with Marisa data we have?
  - Further lab work probably not useful until have standardised method.
  - Should Oehlmann be funded further to re-run Marisa test in a larger, fully supervised study to see if results change? But is this just going over old ground – hasn't he already repeated studies sufficiently (published 2006)? Group divided on this.
  - We should use the existing "luxurious" Marisa data more effectively (e.g. in meta-analysis) to reach a conclusion on this species if possible. But why are the Oehlmann and Forbes data so different? Would info on snail tissue concs be useful in explaining this?
  - Would a mesocosm (flow through) study with snails be useful? But must consider dosing issues – can it be done in a way that resolves low dose issues (e.g. Macrophytes mopping up BPA, degradation can be very high - >90%)? Some concern that study would not produce clean & useful data.
  - Eco-epidemiology approach could be used to show if effects on prosobranchs occur in the field?
  - There is a general issue for regulatory authorities about how to build appropriate incentives for industry to perform tests into their decision-making about chemicals.

Any relevant lessons from mamm tox?

- Possibly use mamm tox data further for more detailed secondary poisoning assessment (e.g. Canadian approach)
- Some tissue specimen databanks available that might be used to support estimates of BPA uptake (Dreissena, bream, seagull eggs, brown algae, eelpout held by FHI).

Any important gaps in env haz assess?

- Why brown trout data critical to Canada not used? – several methodological issues for EU. Disagreement about how to treat it.
- Several fish studies (e.g. Secondary sexual characteristics in fatheads; swordtail tail length) should also be re-evaluated in WoE approach?

Are reliable field data available

- Not really....but no evidence of changes in e.g. Snail populations in nature (contrast with TBT and dogwhelks)

How reliable are in vitro/in vivo hazard data & what do they tell us about EA of BPA?

- Enough reliable data to tell us that BPA is clearly an ED for different taxa.
- Ecotoxicity in vivo data not conclusive about BPA potency.

Potential for additive effects with other EDCs in env?

- Yes, there is potential

Are all relevant environmental compartments covered?

- Water is most important compartment.
- Potential for accumulation in anaerobic sediments and WWTP sludges needs further assessment?

Is availability of exposure data adequate?

- BPA producers have collected data on exposure concentrations – mostly available for surface water. Some available on biota, sediment, soil data. Should be more investigation of sediment data that are available.
- Concentrations in Canada appear to be similar to Europe (although sometimes >1ug/L). Some apparent differences could be due to different LoDs.
- Should assume median WWTP efficiency of 66%. Some inefficiencies might be due to non-optimal microbes.....should be able to achieve up to 99%.

Potential for sources/releases from BPA derivative compounds?

- Have not considered all compounds (but have considered one in EU RAR).

Accumulation potential (food chain effects)?

- Look at Canadian approach to see why different conclusions to EU RAR on secondary poisoning.
- Binding to proteins and other factors affecting bioavailability may need to be considered in any feeding studies.

All covered adequately?

- Environmental compartments? Yes, (except sediments)
- Trophic levels? yes
- Receptor species? Yes (soils? But no further species to use? Microbes?)
- Endpoints & effects? General for EDCs – many organisms with “general” estrogen receptor (e.g. some annelids)
- Population relevant MoA? Yes

Is BPA of equivalent concern (SVHC)?

- It is widely used at high concs (and increasing) and released into env
- It is toxic at low concs
- It can be considered “pseudo-persistent” because continuously released plus it can be P in anaerobic sediment.
- Not B
- ....are ED-mediated effects on snails & fish sufficient to classify BPA as SVHC?....it’s not currently of VERY high concern.
- ....REACH submissions from manufacturers/importers will need to address outstanding issues in transitional dossiers.