J. Limnol., 2012; 71(2): 339
DOI: 10.4081/jlimnol.2012.e36

Supplementary Material

Zooplankton as an early warning system of persistent organic pollutants contamination in a deep lake (lake Iseo, Northern Italy)

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Supposing an equilibrium condition between sediments and water, we used the Karickoff's equation (Karickoff, 1981) to calculate the Log K_{oc} values for each compound that express the affinity of contaminants to sediments.

$$\text{Log } K_{oc}=\text{Log } K_{ow}-0.21 \qquad \text{(eq. 1)}$$

Subsequently, for each compound we calculated the K_p values (partitioning coefficient taking into account the percentage of organic matter in sediments), considering that at the top (2 cm) the organic matter content (expressed as Loss On Ignition – LOI) was on average 16.1% (Bettinetti *et al.,* 2011):

$$K_p=K_{oc}{}^{*}\,\text{LOI\%} \qquad \text{(eq. 2)}$$

It was then possible to calculate the expected concentration in water knowing the measured concentrations in sediments:

$$C_w=C_s/K_p \qquad \text{(eq. 3)}$$

where C_w is the expected concentration in water and C_s the measured concentration in sediments.

Log K_{oc} for each compounds therefore were (eq. 1):

	Log K_{ow}	Log K_{oc}
PCB138	6.83	6.62
pp'DDE	5.70	5.49
pp'DDD	5.50	5.29
pp'DDT	6.19	5.98
HCB	5.80	5.59
γ– HCH	3.80	3.59

Considering that the LOI% content was 16.1%, the K_p for each compound were (eq. 2):

	K_{oc}	K_p
PCB138	4168694	671160
pp'DDE	309029	49754
pp'DDD	194985	31393
pp'DDT	954992	153754
HCB	389045	62636
γ– HCH	3890	626

The expected concentrations in water were (eq. 3):

	Sediment ng g^{-1} d.w.	Water ng L^{-1}
PCB138	8.7	0.013
pp'DDE	221.5	4.452
pp'DDD	30.2	0.962
pp'DDT	22.5	0.146
HCB	0.8	0.013
γ– HCH	0.5	0.798