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POPs pesticides in Lake Sevan and rivers of Armenia

Anahit Aleksandryan[1] and Gabrielyan B[2]
[1]Ministry of Nature Protection of the Republic of Armenia, Armenia
[2]National Academy of Sciences of the Republic of Armenia, Armenia

In 2012, monitoring studies were performed for persistent organic pollutants (POPs) in water from the Lake Sevan and rivers flowing into it.

The following pesticides residues were revealed in studied samples of surface water with the help of gas-chromatograph/mass-spectrometer GCMS-QP2010 SE EI 230V CELV incl. GC-2010 *Plus* (Shimadzu Corporation, Japan):

- Hexachlorcyclohexane isomers varied from 0.006 to 1.1 mcg/L
- DDT and its metabolites made 0.004-0.5 mcg/L
- Heptachlor amounted 0.1- 0.86 mcg/L
- Hexachlorbenzene made 0.09-0.3 mcg/L
- Aldrin: 0.01-0.3 mcg/L
- Dieldrin: 0.01-0.2 mcg/L
- Endrin: 0.02-0.2 mcg/L
- Mirex: 0.01-0.1 mcg/L

According to study results in all tested samples of surface water, the residual amounts of pesticides were revealed at microgram (mcg) levels.

In analyzed samples of water, the summary quantity of HCH isomers varied in the range of 0.00013-0.0014 mg/L, while DDT and its metabolites made 0.00002-0.0015 mg/L.

DDT was determined only in Masrik and Gavaraget rivers; in other water basins, only products of DDT degradation were found: DDE and DDD.

The comparison of research results obtained in 2012 with earlier data of 2002-2003 demonstrated that the tendency was observed to a decrease of organochlorine substances residual amounts in surface water of Armenia.

Biography

Anahit Aleksandryan has completed her Ph.D. at the age of 30 years from Institute of Continuing Medical Education, St. Petersburg, Russia. In 2011, she was granted the title of Science Doctor in Biology. From 1996 to present, Dr. Aleksandryan is the employee at Ministry of Nature Protection of the Republic of Armenia. Since 2010, she is the head of Hazardous Substances and Waste Policy Division. Her research publications exceed 70, including 3 monographs.

anahit.aleksandryan@yahoo.com