The International POPs Elimination Project (IPEP)

Fostering Active and Effective Civil Society Participation in Preparations for Implementation of the Stockholm Convention

Contamination of chicken eggs near the Dandora dumpsite in Kenya by dioxins, PCBs and HCB

The International POPs Elimination Network (IPEN) asked whether free-range chicken eggs might contain U-POPs if collected near potential sources of U-POPs named by the Stockholm Convention.

For sampling in Kenya Dandora dumpsite located in the Eastlands suburb of Nairobi, the capital city of Kenya was chosen. The eggs were collected from two sites bordering the Dandora dump. One was from the western border of the dump, within the Dandora estate, and the other from the northern border, within the Ngomongo slum. The hens from which the eggs were picked were between 6 months and one year old, and were all free-range although occasionally provided with shop bought food supplements. The hens do not feed directly from the dump, but live at the edge where ash from the dump is easily deposited.

Egg sampling and results

Sampling was done at Dandora place about 30 meters from the edge of the dump in December 2004. The eggs analysis showed high levels of dioxins and PCBs. Dioxin levels exceeded background levels by almost 18-fold and were more than six times higher than the European Union (EU) dioxin limit for eggs. Levels of PCBs exceeded proposed regulatory limits by more than four-fold. To our knowledge, this study represents the first data about POPs in chicken eggs from Kenya.

Possible U-POPs sources

The high levels of U-POPs in free-range chicken eggs in these samples provoke the question of possible sources. The most obvious potential source of POPs releases at the site is the burning of chlorine-containing waste products such as commonly-found PVC plastics. Burning is common at the dump and there are several likely exposure pathways for such POPs contamination. One would be through the consumption of free-range chicken eggs or other products from animals (such goats, pigs and cows) that feed and drink from the surrounding area. Another would be through the consumption of vegetables grown along the banks of the river that passes around the edge of the dump. The direct inhalation of fumes from site would be the other likely pathway. The predominant wind direction is north westerly.

The toxic substances measured in this study are slated for reduction and elimination by the Stockholm Convention which holds its first Conference of the Parties beginning 2 May 2005. Kenya is a Party to the Convention since it ratified the Treaty in September 2004. The Convention mandates Parties to take specific actions aimed at eliminating these pollutants from the global environment. We view the Convention text as a promise to take the actions needed to protect Kenyan and global public’s health and environment from the injuries that are caused by persistent organic pollutants, a promise that was agreed by representatives of the global community; governments, interested stakeholders, and representatives of civil society. We call upon Kenyan governmental representatives and all stakeholders to honor the integrity of the Convention text and keep the promise of reduction and elimination of POPs.

Recommendations

1) More POPs monitoring in Kenya is needed;
2) More publicly accessible data about U-POPs releases from all potential sources in the region are needed to address them properly;
3) Stringent limits for U-POPs emissions and levels in waste should be introduced into national legislation.
4) PVC-containing waste should not be burned and preferably other materials that do not contain chlorine should be substituted for products currently using PVC.

ANGLOPHONE AFRICA

Persistent organic pollutants (POPs) harm human health and the environment. POPs are produced and released to the environment predominantly as a result of human activity. They are long lasting and can travel great distances on air and water currents. Some POPs are produced for use as pesticides, some for use as industrial chemicals, and others as unwanted byproducts of combustion or chemical processes that take place in the presence of chlorine compounds. Today, POPs are widely present as contaminants in the environment and food in all regions of the world. Humans everywhere carry a POPs body burden that contributes to disease and health problems.

The international community has responded to the POPs threat by adopting the Stockholm Convention in May 2001. The Convention entered into force in May 2004 and the first Conference of the Parties (COP1) will take place on 2 May 2005. Kenya ratified the Convention in September 2004.

The Stockholm Convention is intended to protect human health and the environment by reducing and eliminating POPs, starting with an initial list of twelve of the most notorious, the “dirty dozen.” Among this list of POPs there are four substances that are produced unintentionally (U-POPs): polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) The last two groups are simply known as dioxins.

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The sampling site in Dandora where the chicken live. Photo by: Rachel Wambui
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For full report visit IPEN and IPEP websites