

Report on the Follow-up EU-China Twinning Exchange Project

Title: Publicizing and communicating the chicken egg dioxin research

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Background

Jitka Strakova from Arnika Association, Czech Republic and Mao Da from Nature University participated to the EU-China NGO Twinning Exchange project in 2014. During their exchange in the year, they worked together on a research of sampling and testing dioxin level from free range chicken in pollution hotspots in China, as part of the project “Strengthening the capacity of pollution victims and civil society organizations to increase chemical safety in China” funded by the European Union.

The reported project is a follow-up activity of Jitka and Mao’s twinning exchange and the necessary extension of their research on egg dioxin research, which include collecting and testing additional samples, translating the report from English to Chinese, designing and printing the Chinese version of the report, organizing press conference to release the report and visiting the sampling site to give feedback to pollution victims.

About the report

Free range chicken eggs were used for monitoring levels of contamination by POPs at certain places in many previous studies. Eggs have been found to be sensitive indicators of POP contamination in soils or dust and are an important exposure pathway from soil pollution to humans, and eggs from contaminated areas can readily lead to exposures with exceeding thresholds for the protection of human health.

Chickens and eggs might therefore be ideal “active samplers” and indicator species for evaluation of the level of contamination of sampled areas by POPs, particularly by dioxins (PCDD/Fs) and PCBs. Based on this assumption, we have chosen sampling of free range chicken eggs and their analyses for selected POPs as one of the monitoring tools within the project “Strengthening the capacity of pollution victims and civil society organizations to increase chemical safety in China”.

The data and analyses of free range chicken eggs discussed in this report were obtained during a two and quarter year-long joint project of three NGOs: IPEN (Sweden), Nature University (China) and Arnika – Toxics and Waste Programme (Czech Republic). They were obtained from local people and/or sampled by Chinese NGOs Nature University during field visits in 2013 and 2014 from seven different localities in China. Additional sampling was done in Likeng in November 2015.

The report concludes that:

High levels of PCDD/Fs and DL PCBs were found in free range chicken egg samples from hot spots in China. All of the free range chicken eggs samples exceeded the EU ML either for PCDD/Fs or for sum of both PCDD/Fs and DL PCBs. More regular monitoring of dioxins and DL PCBs in food samples should be undertaken by national authorities, as there is not much data about levels of POPs in this common part of the diet in China. The cell based screening test DR CALUX(R) method has shown to be effective to find new polluted areas as well as for an estimation of overall contamination of food stuff (eggs) by PCDD/Fs and DL PCBs collected from Chinese hot spots, although it can also show response to a broader range of contaminants such as brominated dioxins, for example.

An extremely high level of PBDD/Fs was revealed in free range chicken egg samples taken close to waste incinerators in Hanyang city, Wuhan, accompanied with high levels of BFRs and HCB in the same pool sample. This finding provokes questions about the level of our knowledge about contamination of food in China and other countries with high disposal volumes of e-waste containing PBDD/Fs and BFRs, as it is not the first indication of very high concentrations of PBDD/Fs in the environment. It also raises questions about the potential listing of PBDD/Fs under the Stockholm Convention, as this group of chemicals shows similar properties to other U-POPs already listed in its Annex C.

High levels of PCDD/Fs and DL PCBs measured by bioassay analyses in samples from the vicinity of the metallurgical complex in Beihai, as well as in samples from the vicinity of three Chinese waste incinerators (Likeng, Shenzhe and Wuhan),

highlight the importance of monitoring homegrown food sources in neighbourhoods of U-POPs source categories listed in Annex C to the Stockholm Convention; in particular in developing countries with a fast growing industry like China. To take appropriate measures to decrease releases of U-POPs from these sources is an even more important step.

High levels of POPs in free range chicken eggs from the vicinity of several waste incinerators underline the needs to 1) increase non-toxic waste recycling in China instead of massive building of new large waste incinerators, and 2) tighten the control of management of waste incineration residues and other pathways of U-POPs releases from waste incineration. The BAT/BEP Guidelines of the Stockholm Convention (Stockholm Convention on POPs 2008) contain a good list of potential measures for waste management which can improve the situation in that field.

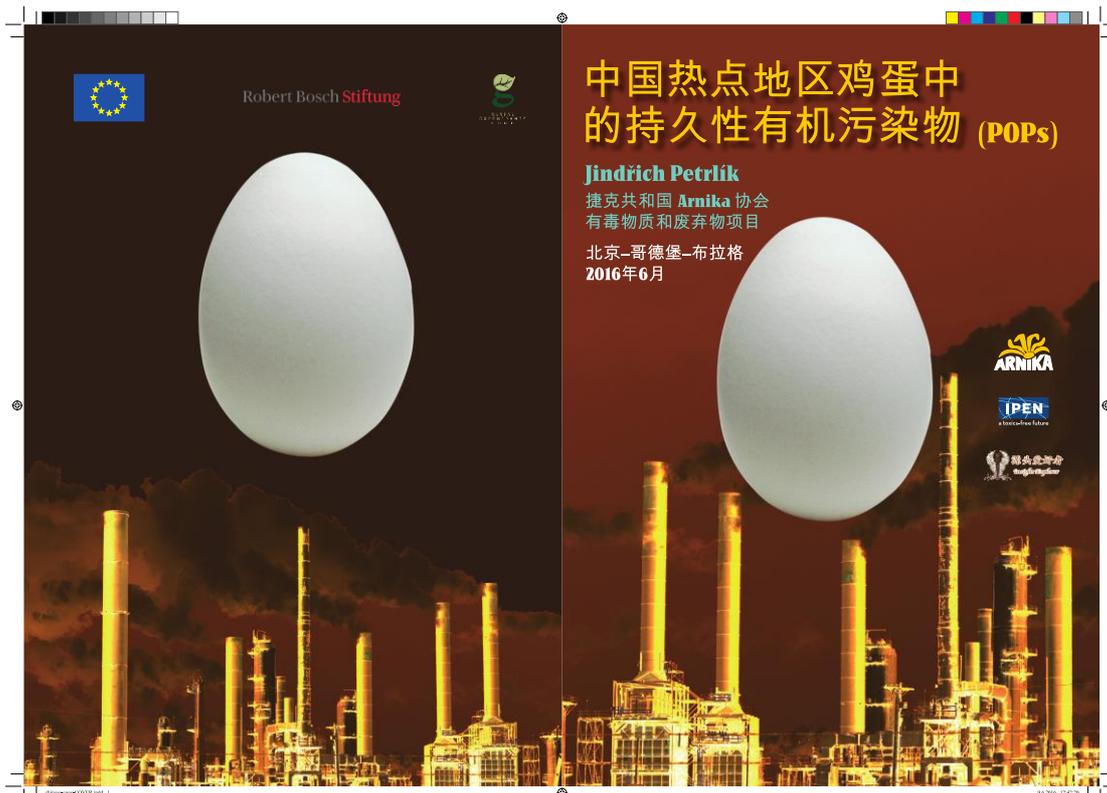
Additional Egg Samples from Likeng Incinerator, Guangzhou

With the support of the follow-up project, we had the opportunity to collect additional free range egg samples from Likeng incinerator, Guangzhou and have them analyzed by standard dioxin testing method. Such new data are very important because they make the comparison between different analyzing methods and different hotspot sites possible.

The Chinese Version of the Report

Before the follow-up project, Nature University had the report translated into Chinese already and the project later covered the translation, editing and design cost for the Chinese version of the report. Please see the report here: <https://slack-files.com/T2M51KC8J-F3NPSY2E-a53fa056cd>.

Later the report was printed into 350 copies (50 color and 300 black and white), with the cover the same as the English version.



Press Conference

With the support of the follow-up project, Arnika, IPEN and Nature University had the opportunity to further organize a press conference for releasing the report on June 12, 2016, with the participation of the author of the report, Jindrich Petrlik who traveled from Prague, Czech Republic to Beijing, China.

The conference was held in an NGO activity center in downtown Beijing and attracted over 30 attendants including several journalists and professionals from a dioxin lab of Tsinghua University.



The conference started from presentations given by Mao Da and Jindrich Petrlik who introduced the audience the essential message from the report. After a Q&A section, three guests further talked to the audience about where the egg samples were from and what was the implication of dioxin contamination in food to public health in China. They are Wang Baoqin, who lived near to a hotspot site, Chen Liwen, a Nature University colleague who went to the hotspot sites and Yao Jia, an independent researcher of dioxin pollution.



Media Coverage

China Economic Herald: <http://www.ceh.com.cn/shpd/2016/07/947308.shtml>

People.cn: http://paper.people.com.cn/smsb/html/2016-07/05/content_1692241.htm

All China Environmental

Federation: <http://www.zhhjw.org/a/hjxw/jdgz/2016/0623/6011.html>

Jiemian: <http://www.jiemian.com/article/707350.html>

Caixin: <http://china.caixin.com/2016-06-21/100956996.html>

South China Morning Post:

<http://www.scmp.com/news/china/policies-politics/article/2042436/call-tougher-dioxin-limits-after-carcinogen-found-hairy>

Field Trip to Guodingshan, Wuhan

Right after the press conference, Jindrich, Mao Da and an intern of Nature University left Beijing by high speed train and arrived in Wuhan on the evening of 12 June. They were going to visit the pollution victims who lived near to one of the hotspot sites (two waste incinerators) where recorded the highest dioxin level in sampled free range chicken eggs.

On June 13 morning, they went with the local pollution victims to the landfill receiving the fly ash of the incinerators, and witnessed the illegal operation of such hazardous waste. In the afternoon, they visited one of the victims' house and gave feedback of the research to them personally. Such report provided them evidence to further fight against the polluting incinerators.

Jindrich, Mao Da and the intern returned Beijing on the evening of 13 June and the follow-up activities finished.



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