15<sup>th</sup> Euro Global Summit on

# **Toxicology and Applied Pharmacology**

July 02-04, 2018 | Berlin, Germany

## Study of ecotoxicological effect and soil environmental criteria of heavy metal chromium (VI) in China

Wang Xiaonan CRAES, China

Cystematic study about water quality criteria is being carried out in China, but study of soil environmental criteria is Ocomparatively insufficient. In this study, germination and root growth of 8 terrestrial plants (Triticum aestivum, Lactuca sativa, Cucumis sativus, Zea mays, Brassica pekinensis, Glycine max, Allium tuberosum and Solanum lycopersicum) and growth inhibition of one terrestrial animal (Achatina fulica) were used to determine the chronic ecotoxicological effects of chromium (VI) using the agricultural moisture soil of Baoding. In addition, with the native toxicity data selected, the HC5 (hazardous concentration of the 5% species) and the ecological protected soil environmental criteria of chromium (VI) in Baoding moisture soil were calculated using the log-normal species sensitivity distribution (SSD) method. Results showed that NOEC (no observed effect concentration) values for the growth of the terrestrial plants T. aestivum, L. sativa, C. sativus, Z. mays, B. pekinensis, G. max, A. tuberosum, S. lycopersicum, and the terrestrial invertebrate snail A. fulica were 19.0, 21.0, 28.0, 32.0, 28.0, 32.0, 32.0, 12.0 and 20.0 mg/kg, respectively. The comparison of species toxicity data that were tested in the same conditions showed that terrestrial plants S. lycopersicum was the most sensitive species to chromium (VI), T. aestivum and L. sativa had the same sensitivities to chromium (VI) exposure, whereas, plants C. sativus, Z. mays, B. pekinensis, G. max and A. tuberosum had the same sensitivities to chromium (VI) exposure. Finally, the HC5 value of chromium (VI) in the moisture soil of Baoding was calculated to be 7.66 (4.12<CI<11.34) mg/kg using the log-normal SSD method, and the ecologically protected soil environmental criteria of chromium (VI) was 1.53~7.66 mg/kg. With the investigation of this work, we expect that it could provide useful information in the study of soil environmental criteria in China.



#### **Recent Publications**

- 1. Wang Xiaonan et al. (2013) Development of aquatic life criteria for triclosan and comparison of the sensitivity between native and non-native species. Journal of Hazardous Materials. 260:1017-1022.
- 2. Wang Xiaonan et al. (2014) Comparison of species sensitivity distributions for species from China and the USA. Environmental Science and Pollution Research. 21(1):168-176.

### conferenceseries.com

### 15<sup>th</sup> Euro Global Summit on

# **Toxicology and Applied Pharmacology**

July 02-04, 2018 | Berlin, Germany

- 3. Wang Xiaonan et al. (2014) Assessment of toxic effects of triclosan on the terrestrial snail (Achatina fulica). Chemosphere. 108:225-230.
- 4. Wang Xiaonan et al. (2015) Derivation of predicted no effect concentration (PNEC) for HHCB to terrestrial species (plants and invertebrates). Science of the Total Environment. 508:122-127.
- 5. Xiaonan Wang et al. (2015) Development of predicted no effect concentration (PNEC) for TCS to terrestrial species. Chemosphere. 139:428-433.

#### Biography

Wang Xiaonan has his expertise in ecotoxicology, environmental criteria and risk assessment in China.

wangxn@craes.org.cn

Notes: