

Distribution Characteristic of Organochlorine Pesticides (OCPs) in Urban Atmospheric Particles (TSP and PM₁₀) of Inner Mongolia

TA Na¹ WU Yun¹ BAO Hai¹ A Gula¹ AKIRA Kondo²

¹Inner Mongolia Key Laboratory of Green Catalysis, School of Chemistry and Environmental Science, Inner Mongolia Normal University, Hohhot, Inner Mongolia 010022, China;

²Sustainable Energy and Environmental Engineering, Graduate School of Engineering, Osaka University, Japan)

Organochlorine Pesticides (OCPs) is a one kind of Persistent Organic Pollutants (POPs) that have higher monitoring detection rate in various environmental media currently. The paper studied the pollution levels and distribution characteristics of OCPs of TSP and PM₁₀ in four cities of Inner Mongolia. The collection of samples were carried out from June 20 to July 9 in 2012, and 2~3 sample sites were located in Hohhot city, Ordos city, Chifeng city and Tongliao city of Inner Mongolia. Totally, 177 samples were collected. The samples were subjected to soxhlet extraction, concentration, purification by silica gel column, followed by GC- MS determination.

1. Pollution levels and detection rates

Table 1 Σ OCPs concentration levels in TSP and PM₁₀ of four cities of Inner Mongolia

Particle size	TSP	PM ₁₀
Hohhot	3.24-5.77	4.30- 5.86
Ordos	3.39-5.67	4.95-7.88
Chifeng	3.42-5.75	3.46-4.40
Tongliao	3.06-5.90	4.37-5.93

Table 2 Detection rates of OCPs in TSP and PM₁₀ of four cities of Inner Mongolia (%)

OCPs	Hohhot		Ordos		Chifeng		Tongliao	
	TSP	PM ₁₀	TSP	PM ₁₀	TSP	PM ₁₀	TSP	PM ₁₀
α -HCH	4.76	4.76	0.00	0.00	9.52	9.52	20.8	12.5
β -HCH	23.8	9.52	4.76	4.76	33.3	47.6	12.5	33.3
Endosulfan I , II	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other OCPs	100	100	100	100	100	100	100	100

2. Distribution Characteristic of OCPs

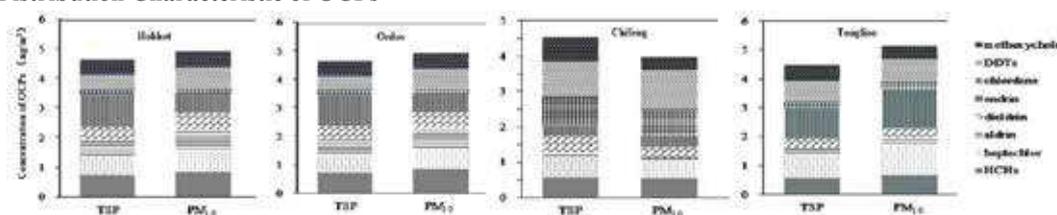


Fig. 1 Concentration of OCPs in TSP and PM₁₀ of four cities of Inner Mongolia

References:

- [1] Oday M. Jaward et al. Passive air sampling of pcbs, pbdes, and organochlorine pesticides across Europe [J]. Environ. Sci. and Technology. 2004, (38):34-41.
- [2] Hyun-Gu Yeo, et al. Concentration distribution of PCBs and OCPs and their relationship with temperature in rural air of Korea [J]. Atmospheric Environment, 2003, (37):3831-3839.

Acknowledgments: We acknowledge funding from the Chinese National natural function Programs (No.21167012) and (No. 21667022)