

6.123 ORGANOCHLORINE PESTICIDES IN THE ATMOSPHERIC AEROSOL AROUND MEXICO COUNTRY USING PASSIVE SAMPLERS.

Early Career Scientist

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Abstract:

Organochlorine pesticides (OP) are part of persistent organic pollutants. They show toxic, carcinogenic and mutagenic properties. OP and their degradation products can be detected in the atmosphere long time after their emissions and far away to their sources, like in the case of pristine zones. To evaluate the OP presence in remote areas, passive samplers have been employed. In our study, we used passive samplers with polyurethane foam (PUF) to collect atmospheric aerosol in five sites around Mexico Country. Samplings were carried out during 90 days on 2014 (n=8) and 2015 (n=20). Samplings sites are part of the Network of Atmospheric Observatories (RUOA) from Universidad Nacional Autónoma de México. PUF were located in a special homemade glass cell.

Dichloromethane was used to extract the OP from the PUF using an ultrasound bath. Temperature, potency and time were controlled. According to factorial design (2^3), the best extraction conditions were 50 °C, 40 % and 40 min, twice. Endosulfan I was found in all sites, except at the east of the country (Los Tuxtlas, protected natural area 530 m.a.s.l.). Other OP in minor concentrations were 4,4'-DDE y β -HCH. Actually, we are analyzing 60 samples, we will show their seasonal and spatial trend of the found OP.