



Glyphosate and AMPA contents in sediments produced by wind erosion of agricultural soils in Argentina

Virginia Aparicio (1), Silvia Aimar (2), Eduardo De Gerónimo (1), Daniel Buschiazzo (3), Mariano Mendez (3), and José Luis Costa (1)

(1) INTA, AGRONOMY, Argentina (vaparicio@balcarce.inta.gov.ar), (2) Facultad de Agronomía, Universidad Nacional de La Pampa, cc 300, 6300 Santa Rosa, Argentina, (3) Institute for Earth and Environmental Sciences of La Pampa (INCITAP, CONICET).

Wind erosion of soils is an important event in arid and semiarid regions of Argentina. The magnitude of wind erosion occurring under different management practices is relatively well known in this region but less information is available on the quality of the eroded material. Considering that the intensification of agriculture may increase the concentrations of substances in the eroded material, producing potential negative effects on the environment, we analyzed the amount of glyphosate and AMPA in sediments produced by wind erosion of agricultural soils of Argentina. Wind eroded materials were collected by means of BSNE samplers in two loess sites of the semiarid region of Argentina: Chaco and La Pampa. Samples were collected from 1 ha square fields at 13.5, 50 and 150 cm height. Results showed that at higher heights the concentrations of glyphosate and AMPA were mostly higher. The glyphosate concentration was more variable and higher in Chaco (0.66 to 313 $\mu\text{g kg}^{-1}$) than in La Pampa (4.17 to 114 $\mu\text{g kg}^{-1}$). These results may be due to the higher use of herbicides in Chaco, where the predominant crops are soybeans and corn, produced under no-tillage. Under these conditions the use of glyphosate for weeds control is a common practice. Conversely, AMPA concentrations were higher in La Pampa (13.1 to 101.3 $\mu\text{g kg}^{-1}$) than in Chaco (1.3 to 83 $\mu\text{g kg}^{-1}$). These preliminary results show high concentrations of glyphosate and AMPA in wind eroded materials of agricultural soils of Argentina. More research is needed to confirm these high concentrations in other conditions in order to detect the temporal and spatial distribution patterns of the herbicide.