Geophysical Research Abstracts
Vol. 12, EGU2010-10095, 2010
EGU General Assembly 2010

Assessing the Mercury Content in Mediterranean Calcareous Soils

C. Gil (1), J. Ramos-Miras (1), L. Roca-Pérez (2), R. Boluda (2), and J. Bech (3)

(1) Dept. Edafología y Química Agrícola, Escuela Poltécnica Superior, Universidad de Almería, Ctra. de Sacramento s/n, 04120 La Cañada, Almería, Spain, (2) Dept. Biologia Vegetal, Facultat de Farmàcia, Universitat de València, Av. Vicent Andrés i Estellés s/n, 46100 Burjassot, València, Spain, (3) Dept. Fisiologia Vegetal, Facultat de Biologia, University of Barcelona, Avda Diagonal 645, Barcelona (Spain)

Soil constitutes the greatest reservoir of mercury in terrestrial ecosystems and is the main pollution route for aquatic systems and the food chain. We determined the mercury total content in Mediterranean calcareous soils by thermal decomposition, amalgamation and atomic absorption spectrophotometry, and on the base of the background level and geochemical baseline concentration concepts the contamination degree in some agricultural soils were assessed. Fifty-three samples from five soil use groups (natural, dry land, greenhouse, irrigated and rice farming soils) were analysed. The results showed that the levels of mercury in these soils were 9.4 to 1585 µg kg-1. Soil organic matter has been related to mercury content in soils. The background level, geochemical baseline concentrations and the reference value were established from natural soils being the followings: 25.1, 9.8–64.3, and 64.3 µg kg-1. These results indicated that rice farming soils (gleyic–calcaric Fluvisols, Fluvaquents), irrigated soils (calcaric Fluvisols, Xerofluvents) and some greenhouse soils (cumulic Anthrosols) presented much higher levels, indicating contamination. Hg accumulation in these soils was associated with local anthropogenic sources.