Use of GEMAS data for risk assessment of cadmium in European agricultural and grazing land soil under the REACH Regulation

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Over 4000 soil samples were collected for the "Geochemical Mapping of Agricultural and Grazing Land Soil of Europe" (GEMAS) project carried out by the EuroGeoSurveys Geochemistry Expert Group. Cadmium concentrations are reported for the <2 mm fraction of soil samples from regularly ploughed fields (agricultural soil, Ap, 0 - 20 cm, N - 2218) and grazing land soil (Gr, 0 - 10 cm, N - 2127). The samples were collected in 33 European countries, covering 5.6 million km^2 at a sample density of 1 sample each per 2500 km^2 and were analysed in an aqua regia extraction followed by an ICP-MS finish. The median Cd value is 0.181 mg/kg for the Ap and 0.202 mg/kg for the Gr soil samples. The data allow a directly comparable country-specific regional exposure and risk characterisation for all EU countries covered. Direct risks of Cd for terrestrial organisms are only predicted for a few isolated sample sites: 2.3% of the Ap and 4.5% of the Gr sites, respectively.

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