



## **Improving soil contamination monitoring in Hungary**

M Dombos, J Szabó, A Anton, and L Pásztor

Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences, GIS Lab, Budapest, Hungary (pasztor@rissac.hu / 36-1-355-1440)

Development of national surveys and monitoring activities of soil contamination is currently one of the most important challenges in soil protection studies. In Hungary, the national Soil Information and Monitoring System (SIMS) has been established aiming to estimate changes in soil contaminants in agricultural lands and identify contaminated sites. However, besides the relatively high sample sizes of TIM (1236 point measurements) accuracies of the derived information on soil contamination are not known.

The objectives of MONTABIO project are (1) to estimate the accuracy of SIMS by using additional up-to-date samplings of the typical soil contaminants using new field measurement methods; and (2) to develop spatial sampling design to improve the accuracy of the monitoring system.

Towards aim (1) we measured toxic inorganic pollutants: heavy-metals, organic pollutants: pesticide residues and hydrocarbons in fields with different agricultural practices. Soil, soil water sampling and chemical analyses were completed according to standards. Differences and statistical power of the datasets provided by SIMS and our field sampling will be evaluated.

In the interest of aim (2) regionalization of soil contamination coupled with further information (actual agricultural practices, soil physical and chemical parameters) will be conducted to optimize the spatial allocation of sampling points, to identify the relevant affecting factors and to minimize the required sample sizes.