



## **The influence of land use in recharge zones in small catchments on nitrate concentrations and loss - basis for agricultural management regulation in vulnerable zones designated according to the nitrates directive 676/91/EEC.**

**P. Zlabek** (1), T. Kvitek (1,2), A. Zajicek (2), P. Ondr (1), K. Pursova (2), V. Bystricky (1)

(1) University of South Bohemia, Czech Republic, (2) Research Institute of Ameliorations and Soil Conservation Prague, Czech Republic (zlabek@zf.jcu.cz / Fax: +42 038-5310122 / Phone: +42 038-7772778)

The research of nitrate concentrations and loss progress is carried out on two differently used agricultural catchments (four subcatchments) - two with arable land and two with grassland in recharge zones, all artificially drained in discharge zones. The influence of grassing on nitrate concentrations and loss progress in drainage water is evaluated in this study. The drainage runoff is the dominant runoff component in these catchments. The results of this study show, that in the catchments on crystalline rocks in Czech Republic, which are to a significant extent artificially drained, is the land use change (to grassland), especially in recharge zones, the critical factor of nitrate concentrations and loss decrease in water (Nitrates Directive 676/91/ECC). A significant influence of extreme spring runoff events (from snow melt) on total nitrate loss from researched catchments is documented.