# Czech Academy of Agricultural Sciences

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## *Soil and Water Research*



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Soil and Water Research

**Long-term progress in water quality after grassing and fertilization reduction in spring areas of the Šumava Mountains**

Žlábek P., Bystřický V., Ondr P., Kvítek T., Lechner P.:

Soil & Water Res., 3 (2008): 121-128

[ fulltext ]

The changes in water quality caused by grassing of arable land followed by the reduction in the use of fertilisers after 1989 are demonstrated on an example of two tile-drained subcatchments in spring areas in the Šumava Mountains. The original water quality monitoring was performed in the mid-1980s, at the time when the area was used as tile-drained arable land. The monitoring was renewed in 2004 under different, i.e. extensive, land use conditions. The principal reason for the new monitoring at the site was to see what sort of changes, if any, in water quality had occurred in the location, particularly in terms of nitrate nitrogen leaching. The concentrations and ranges of the values of all water quality indices monitored decreased after grassing. The average nitrate concentration of 39.5 mg/l (min. 9.2 mg/l, max. 104.8 mg/l) in 1983–1985 dropped to 17.5 mg/l (min. 3.5 mg/l, max. 33.3 mg/l) in 2005–2007. The greatest decrease (by 85%) was found in average ammonium concentrations. A positive effect of current agricultural management in foothill areas on the reduction of all water quality parameters

monitored was confirmed.

**Keywords:**

subcatchment; land use change; tile drainage; water quality

[ fulltext ]