Nitrate Contamination in Karst Aquifers in the Czech Republic

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Surface waters in the Czech Republic as a whole reveal the mean nitrate concentration of 12.5 mg.l\(^{-1}\) (the set of 14,237 samples). The mean nitrate concentration in surface waters of the karst areas is 26 mg.l\(^{-1}\), i.e. 2 times higher. However, many karst springs exceed the highest recommended values stipulated by legal standard for potable water in their nitrate concentration, i.e. 50 mg.l\(^{-1}\). Springs draining forested catchments usually range between 10 and 20 mg.l\(^{-1}\) in their nitrate contents at present. Many karstic catchments include not only forests but also intensively agriculturally utilized land. The springs in such catchments were often proved contain 60–100 mg.l\(^{-1}\) nitrates. State-supported application of industrial and organic fertilizers led, mostly in the 1960s to 1980s, to gradual increase in groundwater concentrations of nitrates in karst springs. After cutting down financial support in agriculture in 1990, the amounts of industrial fertilizers used substantially decreased.