

## Abstract

In order to simulate the behaviour of nitrate movement in soils, two loessal soils were used which differed in their physical and chemical fertility. Undisturbed soil columns of 30 cm in length and 15 cm diameter were sampled. An unsaturated steady-state water flow in the columns was established and maintained by a Darcian flow of 5 cm solution/day. The nitrate fertilizer (tagged) was applied in solution form to the top of columns and in one lot. The study took place at 4 and 23°C in the laboratory.

The results show that there is good agreement between computed and measured curves. (This was achieved by the curve-fitting approach.) This demonstrates that measured curves can easily be described by simple computer models. However, to be able to merge the two curves, one has to take into consideration the physical and chemical characteristics of the soil. These factors have great influence on the transport of nitrate and other ions in soils.