

Simulation of atrazine transport in soil with a large packed soil column experiment

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Abstract Transport of atrazine in soil was investigated with column experiments. The observed atrazine breakthrough curves through three packed columns were fitted with a two-region nonequilibrium model to obtain the sorption and degradation parameters of atrazine. The transport of atrazine in the three columns was also simulated with the same model but using the sorption and degradation parameters calculated from the batch experiment results. The relatively high concentration of atrazine reaching the bottom of the columns suggests a high risk of groundwater pollution. The model with parameter values calculated from the batch experiment results can simulate the atrazine transport in the columns well. The optimized sorption and degradation parameters from the column experiments were found to be in good agreement with the means of the values obtained from the batch experiments. This suggests that column and batch experiments can be jointly used for large scale modelling.

Key words atrazine; batch experiment; column experiment; degradation; sorption
