



Sorption and distribution of aged atrazine residues in the drainage system of an outdoor lysimeter experiment

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Even though the environmental impact of the herbicide atrazine [2-chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine] is a matter of controversy, it is still extensively applied for agricultural purposes. Particularly in the US, atrazine has been applied to approximately 70% of all corn acreages in the last 18 years. Atrazine is banned in the EU but its use is increasing in countries like China, Brazil and India. Therefore, the worldwide soil burden of this compound must be enormous.

Atrazine has been found to be highly persistent in the environment and it has been suggested that it is moderately mobile in the soil profile. As a result, it is found in most groundwater aquifers and surface waters in agricultural areas in the US. Even in Germany, where it was prohibited in 1991, it is still found in groundwater wells below agriculturally used land where it was formerly applied.

For a long-term outdoor lysimeter experiment with a disturbed soil column, a drainage system of fine gravel was originally embedded at the bottom of the lysimeter. In this drainage system, atrazine and its metabolite 2-hydroxy-atrazine were extracted as long as 22 years after the last atrazine application. Due to the radiolabelling, the spatial distribution of the atrazine residues can be evaluated in fractions like fine clay particles attached to the gravel or in the gravel itself. Approximately 2% of the total gravel consisted of carbonaceous, slag-like particles which might retain most of the atrazine and its residues. The latest data will be presented at the session.