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# What does the difference in the terbuthylazine degradation rate in selected soils of Apace Valley catchment means for the pesticide leaching potential?

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The degradation of the selected pesticide terbuthylazine was investigated in the three different soil samples, which occurs frequently in agricultural area of Apace valley (53 km2), Slovenia. Selected soil samples were similar in organic matter content (1.9-2.1 %), pH (4.5-5.3), and in C/N ratio (7-9); whereas differed in texture (silty loam and loam) and in pesticide usage history (»integrated« and intensive soil management). Triazine herbicides were intensively used for several years in high rates in soil sample S9+, which consisted of 9 % of sand, 65 % of silt, and 26 % of clay. The other two soil samples, S8 (8 % sand, 72 % silt, 20 % clay) and S45 (45 % sand, 44% slit, 11 % clay), were not treated with triazine herbicide for 2 years before experiment.
The degradation experiment was conducted under constant laboratory conditions using 14C-ring labelled terbuthylazine. Volatile 14C-compounds, including 14CO2 released after 14C-terbuthylazine mineralization, have been measured three times a week. Two months after terbuthylazine application, the total amount of 14C in soil samples, bound residues as well as extracted terbuthylazine and its metabolites were determined. Cumulative mineralization was from 5 to16 % of applied terbuthylazine. The highest cumulative mineralization was in soil sample S9+, soil sample with the most intensive pesticide usage; hence the lag phase was the shortest. Interestingly, the cumulative mineralization was similar also in soil sample S45 (14% of applied terbuthylazine), however the lag phase in this soil was much longer and comparable to soil S8. Leaching potential of terbuthylazine in Apace Valley catchment was assessed with model PELMO 3.22, using soil and long-term climate data of the Apace Valley. Results will be presented in the conference.