



How representative is pesticide monitoring in Swiss streams?

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The surveillance of surface water quality in Switzerland is the task of the 26 cantons. This includes the assessment of the level of pesticide pollution. Each of the cantons may follow different procedures, which makes a comparison difficult and cumbersome. Nevertheless, in this study presents the main results of the first nation-wide compilation and interpretation of cantonal and federal monitoring data as well as results from specific research projects on agricultural and urban pesticides are presented.

Overall, more than 345'000 concentration data of 281 biocidal compounds have been analyzed. This set of substances includes 203 compounds that have been registered either only as agricultural plant protection ($N = 149$) product or only as urban biocide ($N = 18$), but also some ($N = 36$) which were registered for both uses. This data set contains 70 out of the 100 most sold agricultural plant protection products in 2010. A comparable assessment for the representativeness of the biocide data is hardly possible due to a lack of systematic use data.

The data stem from 565 measuring sites. However, these sites are not representative for all size classes of the Swiss stream network. While about 75% of the total length of the stream network is made up by small streams (Strahler order 1 and 2), only 28% of the measuring sites are located on such streams. In combination with the sampling strategies that have been used - about 50% grab samples and 50% composite samples - it can be concluded that the 2% of measured values $> 100 \text{ ng L}^{-1}$ most probably severely underestimates the true level of pesticide pollution in the Swiss stream network. In the future, more emphasis has to be put on small streams, where higher concentrations are expected and thus also actual ecological effects.