



Microbial Source Tracking

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Key words

Microbial Source Tracking; water; fecal contamination; indicators

Aim of the study

- (i) Development of methods for microbial source tracking indicators, which can distinguish between human and animal fecal contamination in water.
- (ii) Testing of the practical applicability of the methods in field trials.
- (iii) Providing the methods to the cantonal enforcement authorities and other interested parties.

Material and methods

Microbial Source Tracking (MST) represents an advancement of the concept of using indicator bacteria to assess the microbiological quality of water. In contrast to the general indicators of microbiological quality, certain microorganisms (especially bacteria and viruses) are only found in particular types of faeces (e.g. bovine, human, equine etc.). Detection of these microorganisms (termed MST indicators) in polluted water samples can identify the source/s of faecal material present.

Various MST indicators published in the scientific literature were tested for their suitability for application in Switzerland. Furthermore, specific additional MST indicators were developed and characterized. The practical applicability of the methods was tested in field trials.

Results and significance (Formatvorlage Überschrift 2)

A "toolbox" of indicators has been developed to distinguish between human and animal contaminants in water. The field tests have shown that the methods are suitable for investigating certain situations of faecal contamination of water and for determining the source. The BLV will make the results of this work available to all interested parties on its website.

A major shortcoming of the MST "toolbox", however, is that the results of the tests only allow a limited conclusion to be drawn regarding a possible risk to human health. The interpretation of the results with regard to the safety of the water in question as drinking water for human consumption or as bathing water must be carried out with caution. Conclusive data are not yet available on the extent to which the detection of MST indicators correlates with the presence of pathogenic microorganisms in water. Further research work would be necessary to clarify this question.

Publications, posters and presentations (Formatvorlage Überschrift 2)

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