



### **Importance**

*Escherichia coli* is still used as the principle indicator for drinking water pollution monitoring, however, despite the thorough monitoring the proportion of waterborne disease outbreaks has been increasing over the years. Since it has been established that the probability of pollution detection according to monitoring program of Water Directive is rather low it may be concluded that the traditional methodology for water sampling and analysis is not always able to ensure public safety. The sampling strategy is limited to sampling the water only, whereas most of the bacteria are attached to the inner surfaces of the pipes forming the biofilm and the fate of these (ingress, virulence, detachment) is not clear.

### **Approach**

A method, DVC-FISH was developed whereby the cells are incubated with an antibiotic preventing the cell division but not growth, then concentrated on filter membranes and hybridized with a fluorescent probe. After this procedure the cells are viewed and quantified under the epifluorescence microscope. For this an accurate quantification procedure was also developed.

### **Result**

This report summarizes the efforts and results obtained using DVC-FISH method, indicates some potential problems and advantages. It also provides some recommendations for the use of the method.

### **More information**

Presence of even low number of *E. coli* cells in biofilm compromise water quality, thus more attention to on-line monitoring is needed.

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