



Introduction

Assimilable organic carbon (AOC) concentrations in drinking water are used for the assessment of regrowth potential and biological stability of drinking water. This report compares the different methods for AOC determination used by the different TECHNEAU partners on a theoretical basis.

Importance

Different research groups use different methods to assess AOC in drinking water. While all the methods are based on the same principle (assessment of growth of bacteria in the target water sample), there are numerous variations in the specific aspects of the methods. For an accurate comparison of data derived from different methods, it is important to understand the underlying differences between the methods.

Approach

By means of a questionnaire to the various partners, the methods that are used, the purpose for using the methods and the experience obtained with the methods, were investigated. These methods were then compared with each other with the purpose of highlighting the essential differences between the methods and theoretically assessing their comparability.

Results

Two key issues were identified as factors that can have a large influence on AOC results. The first is the use of natural microbial communities as inoculum in some AOC assays, opposed to pure culture strains used in other assays. Clear experimental data on this does not exist, but it has been suggested that natural communities are capable of utilising a broader substrate range (hence more AOC detected). A second factor is the use of a variety of methods to quantify microbial growth (plating, ATP, turbidity and flow cytometry) and together with this a number of different conversion factors to convert the measured data into AOC equivalents. Therefore, the need for a comprehensive experimental comparison of different AOC methods has been highlighted.

More information

Full details on this deliverable can be found under D3.3.10. Further information can be requested from:

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TECHNEAU Knowledge Integrator (TKI) categorisation

Categorisation of Knowledge Packages

Categorisation (i.e. classification, contains and constraints) of knowledge packages (KPs) can be carried out by 'checking' the appropriate boxes in the attached tables. For example, for a KP investigating point-of-use treatment suitable for a developing world country, the following might be checked:

Classification: Process chain – Tap (Customer) – Point-of-use (POU).

Contains: Report; Literature review.

Constraints: Low cost; Simple technology; No/low skill requirement; No/low energy requirement; No/low chemical requirement; No/low sludge production; Developing world location.

Note that only the lowest level classification needs to be checked, e.g. Point-of-use (POU) in the above example.

Meta data can be included under the 'More Information' section of the Executive Summary Report, i.e. Author(s), Organisation(s), Contact details (name and email), Quality controller (name and organisation) and Date prepared. (The TKI administrator can enter Source (= TECHNEAU), Date submitted (TKI) and Date revised (TKI)).