**Methods of phytoplankton processing**

Samples were preserved with Lugol's (acidified iodine) solution and processed using the Utermöhl (1958) method. Phytoplankton biomass was calculated from counts of cells or colonies using a Nikon Eclipse Ti-S inverted microscope at x200 and x400 magnification. 3 ml of preserved sample was settled overnight. Identification and measurements took place in the course of counting. Counting units are independent (single) algal cells, colonies or filaments/trichomes.Biovolumes of algal cells, colonies and/or filaments were calculated using assigned geometric shapes dimensions, and converted to biomass assuming the specific density of 1 g $cm^{-3}$ in accordance with Edler (1979).

In the course of years several changes have taken place in sampling methods and the treatment of samples.

**Until 1990s,** the samples were preserved with formaldehyde solution. The samples for biomass analysis were concentrated by precipitation (R. Laugaste) or filtration (I. Ott, filter Synpor, pore size 1,5 µm), and counted on a striped microscope slide (R. Laugaste) or in the Fux-Rosenthal chamber (I. Ott). Counting was made with the microscopes MBI-3 (magnification 15x20 and 15x40).

Utermöhl technique has been employed since 1990s, and contemporary key-books became available at the same time.

Phytoplankton abundance was estimated in the samples collected by plankton net with different mesh-sizes in the course of time.

**References of methods accepted**

Approved by CEN on 14 July 2006 "Water quality - Guidance standard on the enumeration of phytoplankton using inverted microscopy (Utermöhl technique)" (CEN 15204, 2006) European Standard EN 15204:2006

**Edler**, L. (ed.) 1979. Recommendations on methods for marine biological studies in the Baltic Sea. Phytoplankton and chlorophyll. – BMB WG 9.

**Utermöhl, H.,** (1958). Zur Vervollkommnung der quantitativen Phytoplankton-Methodik. Mitteilungen der Internationale Vereinigung für Theoretische und Angewandte Limnologie 9: 1-38.

*Biovolume calculation for pelagic and benthic microalgae | Request PDF*. Available from: https://www.researchgate.net/publication/220031275_Biovolume_calculation_for_pelagic_and_benthic_microalgae [accessed Oct 29 2018]. The most commonly used traditional biomass estimate for microalgae is cell biovolume, which is calculated from microscopically measured linear dimensions (Steinman et al. 1991, Snoeijs 1994, Sommer 1994, 1995, Hillebrand and Sommer 1997).

**Key books, most representative**

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Косинская Е.К. 1960. Флора споровых растений СССР. Том 5. Конъюгаты и Сцеплянки. (2). Изд. АН СССР. Москва-Ленинград. 706 стр. In Russian.