Size fractionated CHLOROPHYLL *a*

Serial filtration followed by fluorimetry after methanol extraction

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Chlorophyll a concentration was determined using the fluorimetric method proposed by Yenstch et Menzel (1963), adapted by Holm-Hansen et Rieman (1978) for pigments extraction by methanol, and described by Herbland *et al.*, 1985. Size fractionation was determined by filtration of 1.2-liter samples through polycarbonate filters (0.2, 0.6, and 2 µm; 47 mm) using Sartorius systems (see photo below) and very low depression (drop by drop). The 0.2 and 0.6 µm filters in the lower Sartorius system were separated by a nylon separator (NY8H04700, Millipore). Immediately after filtration, the filters (and the separator for the 0.2 µm filter) were put on cryotubes with 5 mL of methanol for pigments extraction (30 mn at 4°C). Then, the fluorescence was measured with a Turner designs 10-AU-005-CE fluorimeter equipped with a chlorophyll a Kit (F4T45.B2 lamp) according to Welschmeyer (1994).

Fluorescence was converted in chlorophyll a using :

$$[\textit{Chlorophylle a}] = Fo \,.\, Ko \,.\, v/V$$

F_0 = fluorescence
K_0 = calibration coefficient obtained with pure chlorophyll *a* (Sigma C5753)
v = extraction volume (5 mL)
V: filtrated volume (1200 mL)

References:

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