

BASIC KNOWLEDGE IN MARINE SCIENCES

Edited by

Normawaty Mohammd-Noor



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Introduction

Microalgae live freely in the water column. They migrate up and down according to light intensity. In order to estimate the primary productivity of a water body, the cell density of microalgae needs to be determined. A healthy water body will have a high diversity of microalgae species while in some cases, a few species indicates an unhealthy water body. Prior to determining the cell density, the species of microalgae needs to be identified. To determine the cell density quantitatively, water samples containing microalgae needs to be collected using a Van Dorn water sampler or a plankton net of 20 μm mesh size with a flow meter (Fig. 1) attached to it. The flow meter will record the volume of water which passes through the plankton net and this known volume is important in calculating the final cell density. Another method is the qualitative technique, whereby an estimated sample containing phytoplankton is collected using a plankton net.

Collecting microalgae samples

The depth of microalgae collection depends on the objective of the study. The different collecting depths are 1) the surface sample i.e. about 0.5 m below water surface, 2) according to the depth of light penetration and 3) the whole water column. Microalgae sample is collected at 0.5 m because microalgae needs light for photosynthesis and a depth of 0.5 m is considered to be the best depth for microalgae to get enough sunlight for photosynthesis. For determination of the