



IV Iberian Congress on Biotechnology
I Ibero-American Meeting on Biotechnology

BIOTEC'98

BOOK OF ABSTRACTS

Edited by

MANUEL MOTA and EUGÉNIO C. FERREIRA

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This volume contains abstracts presented at the IV Iberian Congress on Biotechnology, I Ibero-American Meeting on Biotechnology, from 12 to 15 July 1998 at the Universidade do Minho in Guimarães, Portugal.

The event was sponsored by:

British Council

EXPO'98

Fundação Luso-Americana para o Desenvolvimento

Fundação para a Ciência e Tecnologia

Governo Civil do Distrito de Braga

Instituto do Vinho do Porto

Sociedad Española de Biotecnología

Sociedade Portuguesa de Biotecnologia

Universidade do Minho

título: BIOTEC'98 - Book of Abstracts
edited by Manuel Mota and Eugénio C. Ferreira

edição: 1ª edição, Julho de 1998
ISBN: 972-97810-0-1
Depósito legal: #####/98
Tiragem: 600 exemplares

publicado por: Departamento de Engenharia Biológica, Universidade do Minho
Campus de Gualtar, 4700 Braga, Portugal

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Screening of Methods for Dry Weight Biomass Determinations in Cultures of Microalgae

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Key words: biomass determinations, dry weight, ash-free dry weight, microalga

Ash-free dry weight (AFDW) determinations are a common laboratory technique used to assay for the growth rate of cultures of microalgae in terms of weight of solids. Another alternative determination is dry weight (DW), a less frequently used measure of weight of solids, because it implies an extra washing step (in order to eliminate residual medium from the cell vicinity) which may promote cell lysis due to osmotic variations. Nevertheless, DW provides a wider range of information than AFDW, so efforts to use the former were undertaken.

In this experiment a saline microalga, *Pavlova lutheri*, was chosen to test several potential washing solvents for DW determinations. The solvents used were (i) an isotonic solution, (ii) a 2.25% (w/v) saline solution (i.e. with the same salinity as the culture medium), and (iii) a two-step washing procedure, with HCl 0.5 N and deionized water. The experiments were run in quadruplicate and the DW and AFDW values obtained in each treatment were compared to one another and with those of control cultures (without washing step).

Similar results were obtained for AFDW values in cultures washed with solvent (iii) and control cultures; then, a second approach was performed using this method for cultures harvested at different growth phases and using different sample volumes, all of which yielded comparable results with those of the control. Hence, the two-step washing process described is a suitable and reproducible method for biomass dry weight determinations.