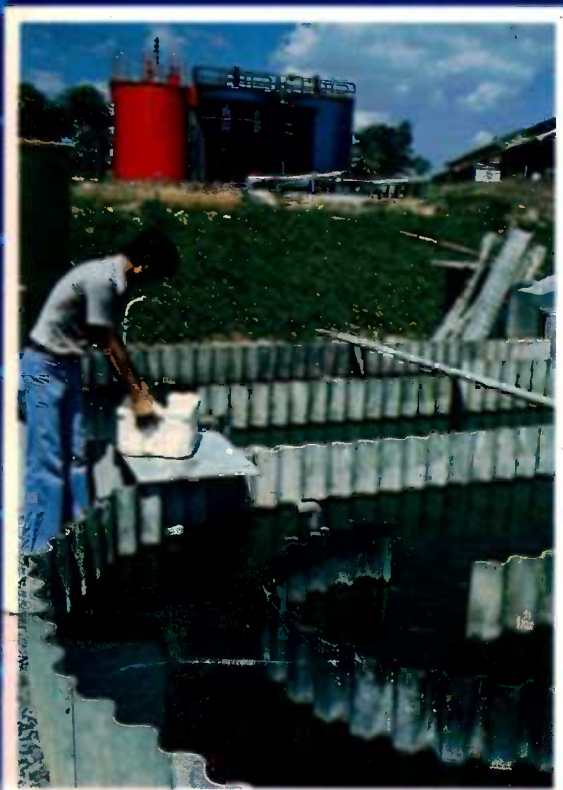


Wastewater Treatment and Resource Recovery

Report of a workshop on high-rate algae ponds,
Singapore, 27-29 February 1980



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IDRC, Ottawa CA
Singapore. Ministry of National Development, Primary Production Dept. SG
IDRC-154e

Wastewater treatment and resource recovery : report of a workshop on high-rate algae ponds, Singapore, 27-29 February 1980. Ottawa, Ont., IDRC, 1980. 47 p. : ill.

/IDRC publication/, /waste waters/, /water treatment/, /waste recycling/, /renewable resources/, /algae/— /biomass/, /cultivation techniques/, /feed production/, /harvesting/, /processing/, /Singapore/, /Israel/, /list of participants/, bibliography.

UDC: 628.357.2

ISBN: 0-88936-260-2

Microfiche edition available

39729

IDRC-154e

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*Sponsored by the International Development Research Centre in
collaboration with the Primary Production Department, Ministry of
National Development, Republic of Singapore*

ARCHIV
62P.357
W 6
1980

Contents

Foreword 3

Overview of Wastewater Treatment and Resource Recovery

Lee Boon Yang, Lee Kam Wing, Michael G. McGarry, and
Michael Graham 5

Introduction 6

High-Rate Algae Pond 10

Harvesting 13

Utilization 21

Economic Analysis 25

Singapore: A Case Study 30

References 38

Abstracts of Presented Papers and List of Participants 41

A study of a sewage-fed, high-rate stabilization pond
in Thailand Peter Edwards, Onanong Sinchumpasak, and
Ely A.O. Ouano 42

High-rate algal growth pond study under tropical conditions
B. Adan and E.W. Lee 42

Recycling of palm-oil mill sludge discharge nutrients through SCP
(*Chlorella vulgaris*) culturing P.M. Sivalingam 42

Microbial treatment and utilization of night soil M.C. Lo
(presented by H.W. Huang) 43

Freshwater cultivation of algae with possibilities of utilizing rural wastes in
India L.V. Venkataraman, K. Madhavi Devi, and
M. Mahadevaswamy 43

Culture of algae in Bangladesh F.Z. Majid, Momena Khatun, and
Rahima Khatun 43

Waste treatment and nutrient removal by high-rate ponds
G. Shelef, Y. Azov, R. Moraine, E. Sandbank, and G. Oron 44

Critical factors in the large-scale production of microalgae
E.P. Lincoln and T.W. Hall 44

Production of algae from pig wastewater in high-rate ponds
Lee B.Y. and Joseph C. Dodd 44

Harvesting algae grown on pig wastes in Singapore
Joseph C. Dodd 45

A nutritional evaluation of pig wastewater-grown algae
M.F. Ngian and S. Thiruchelvam 45

Participants 46

The complete texts of the papers presented at the workshop are included in an unedited form on the microfiche pocketed on the inside back cover of this book.

Abstracts of Presented Papers¹

A study of a sewage-fed, high-rate stabilization pond in Thailand

Peter Edwards, Onanong Sinchumpasak, and Ely A.O. Ouano

A high-rate stabilization pond is described that is part of a sewage driven, combined waste treatment recycling system consisting of three stages: a 200 m² high-rate stabilization pond, a series of 4 m³ concrete fish ponds, and a maize plot. Because the sewage was very weak, the pond was nutrient-limited and not light-limited. At a detention time of 3 days, the mean phytoplankton concentration was 94 mg/l, and the mean phytoplankton yield 15.7 g/m²-day or an extrapolated yield of 57.3 tonnes/ha-year. A yield at least double this should be attainable in Thailand without nutrient limitation in a high-rate stabilization pond. The phytoplankton community in the high-rate pond was generally stable but collapsed on two occasions. No seasonal variations in composition of the phytoplankton community were discernible. The land required to treat domestic sewage from a hypothetical city of 100 000 people was estimated to be 8.93 ha, and the phytoplankton concentration and the algal yield were calculated to be 420 mg/l and 32.8 g/m²-day (120 t/ha-year) respectively, using Thai solar irradiance data.

High-rate algal growth pond study under tropical conditions

B. Adan and E.W. Lee

High-rate algal growth pond systems for waste treatment are usually less expensive to construct and operate than conventional waste treatment systems, are reliable for BOD and nitrogen removal, and provide for nutrient reclamation. For these reasons, a study in the Philippines was made of a high-rate algal pond to determine the feasibility of the system to treat sewage, remove nutrients, and possibly reclaim water and nutrients. The background and theory of the system are provided, and the experiments and their results are explained. The probable significance of these findings to the overall water-management program in Laguna de Bay is also discussed.

Recycling of palm-oil mill sludge discharge nutrients through SCP (*Chlorella vulgaris*) culturing

P.M. Sivalingam

A strain of *Chlorella vulgaris* that thrives well in the adverse conditions of palm-oil mill sludge effluent was isolated. The characteristics for its optimum prop-

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