Wastewater Treatment and Resource Recovery

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

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 m$^2$ high-rate stabilization pond, a series of 4 m$^3$ 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/m$^2$-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/m$^2$-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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