

CONTENTS

Preface

CHAPTER 1. SEPTIC TANK SYSTEMS

Septic tank systems - state of the art, 1988. 2
 IAN W. GUNN, Department of Civil Engineering, The University
 of Auckland, Auckland, New Zealand.

Passive removal of nitrogen and phosphorous using an alternative
 on-site wastewater system. 14
 REIN LAAK, Civil Engineering Department, University of
 Connecticut, Storrs, CT 06268, U.S.A.

Domestic wastewater management alternatives for the Mt. Lofty
 Ranges Wastershed. 22
 P.M. GEARY, Water Resources Branch, Engineering and Water
 Supply Department, Adelaide, Australia.

CHAPTER 2. BIOMASS PRODUCTION

Wastewater treatment using aquatic plants. 34
 P.J. FISHER, Sewage Treatment Planning, Water Board, Sydney
 N.S.W. 2000, Australia.

Irrigation of high - nitrogen containing wastes to pasture. 45
 J.M. RUSSELL, R.N. COOPER and A.M. DONNISON, Meat Industry
 Research Institute of New Zealand, P O Box 617, Hamilton,
 New Zealand.

The disposal of pulp and paper mill effluents by spray irrigation
 onto farmland. 55
 B. JOHNSON and T. RYDER, Technical Department, Tasman Pulp
 and Paper Company Limited, Kawerau, New Zealand.

Transorfations of nitrogen in a *pinus radiata* forest soil flood
 irrigated with treated domestic effluent. 67
 S.L. HAMES and M.J. NOONAN, Department of Biochemistry and
 Microbiology, Lincoln College, Canterbury, New Zealand.

CHAPTER 3. SOIL AND SUB-SOIL TREATMENT

Disposal of agricultural liquid waste by sub-soil injection. 82
 M.A. CHOUDHARY and C.J. BAKER, Agricultural Machinery
 Research Centre; L.D. CURRIE, Fertilizer and Lime Research
 Centre; T.J. LYNCH, Department of Agronomy, Massey
 University, Palmerston North, New Zealand.

- Design criteria for wastewater infiltration systems. 93
 P.D. JENSSEN, Institute of Georesources and Pollution
 Research, Agricultural University of Norway, N-1432 Aas-NLH,
 Norway.
- Promising technologies for the biological detoxification of
 hazardous waste. 108
 J.A. GLASER, United States Environmental Protection Agency,
 Hazardous Waste Engineering Research Laboratory, Cincinnati,
 Ohio 65268, USA.
- CHAPTER 4. COMPOSTING TECHNOLOGY**
- The use of aerobic thermophilic composting for the stabilizati
 of primary meat waste solids.
 G.M. KEELEY and J.L. SKIPPER, The Canterbury Frozen Meat
 Company Limited, Christchurch, New Zealand.
- Recycling of organic wastes through vermicomposting and mushroom
 cultivation.
 MIRA MADAN, NEETA SHARMA and RAGINI BISARIA, Centre for
 Rural Development and Appropriate Technology, Indian
 Institute of Technology, Hauz Khas, New Delhi-110016, India
- Drying of sewage sludge by aerobic solid state cultivation. 142
 S. OI and H. YAMADA, Faculty of Science, Osaka City
 University, Osaka 558; H. OHTA, Urban Engineering
 Information Centre, Osaka City Office, Osaka, 530 and H.
 TANIGAWA, Kansai Environmental Engineering Centre, Kita-ku,
 Osaka 530, Japan.
- CHAPTER 5 ANAEROBIC SYSTEMS**
- On-site hybrid anaerobic treatment of particulated poultry
 wastes.
 P.Y. YANG and M. CHANDRASEKARAN, Department of Agricultural
 Engineering, University of Hawaii at Manoa, Honolulu, HI
 96822, USA.
- Biogas recovery from a thermally treated sewage sludge by a
 fixed-bed anaerobic bioreactor. 166
 N. NISHIO, Department of Fermentation Technology Hiroshima
 University, Higashi-Hiroshima; T. KAWASUGI, Institute of
 Environmental Pollution Control Engineering, Kubota Ltd.,
 Naniwa-ku, Osaka; S. NAGAI, Department of Fermentation
 Technology, Hiroshima University, Higashi-Hiroshima 724,
 Japan.

CHAPTER 6 POSTER PAPERS

- Temperature controlled, aerated static pile composting of slaughter house waste solids. 174
 A.J. VAN OOSTROM and R.N. COOPER, Meat Industry Research Institute of New Zealand (Inc.), Hamilton, New Zealand.
- Aqueous waste substitution in the manufacture of giant cement as a low-cost reuse and disposal option. 185
 M.B. ZANOWICK and J.W. RAINEY, Giant Resource Recovery Company, Inc.; and R.J. SCHOENBERGER, Weston Consultants, Inc., USA.
- Evapo-transpiration for on-site residential wastewater disposal - the New Zealand experience. 197
 I.W. GUNN, Department of Civil Engineering, The University of Auckland, New Zealand.
- Microbiological treatment of brewery waste for resource recovery. 209
 T.S. SIM and J.C.S. OH, Department of Microbiology, National University of Singapore, Lower Kent Ridge Road, Singapore; and A.L. CHNG, Primary Production Department, Singapore.
- An alternative method for reducing numbers of faecal coliform bacteria in slaughterhouse effluent.
 M.J. NOONAN and N. HARMAN, Department of Biochemistry and Microbiology, Lincoln College, Canterbury, New Zealand and G.M.K. Technical Services Division, Canterbury Frozen Meat Company, Belfast, New Zealand.
- Treatability study of organic and ammonia nitrogen removal: Sludge settling and stabilisation in a rotating biological contractor - settling tank system.
 L.T. SUAN and K.H. AHN, Division of Environmental Engineering, Asian Institute of Technology, Bangkok, Thailand.
- Alternative waste treatment systems in southern New Zealand. 241
 K.P. McNEILL and J.W. BRADLEY, Royds Garden Ltd., 71 Armagh Street, Christchurch, New Zealand.