Li Gu, Gao Maolin et al., J Microb Biochem Technol 2017, 9:5 (Suppl)
DOI: 10.4172/1948-5948-C1-031

Design and performance of a water treatment system suitable for rice planting

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In this study, a novel water treatment system suitable for rice planting was designed and constructed to treat and recycle wastewater from aquaculture ponds. According to the performance results of the system, the water purification efficiency was optimal when the hydraulic load was 0.29-0.58 m/d and the gas water ratio was 2-4. The removal rates of TAN, TN, TP and CODMn from wastewater were 33.75%-34.31%, 59.21%-64.53%, 68.43%- 73.75% and 71.66%-74.37% respectively when the hydraulic load was 0.58 m/d and the gas water ratio was 2. Meanwhile, rice yield reached 7127.01 kg/hm2. Therefore, this water treatment system which can efficiently reuse nutrients from wastewater and purify water is a new technology for the treatment of aquaculture wastewater in agriculture-aquaculture system in China.

Biography

Li Gu has completed his PhD from Institute of Hydrobiology, The Chinese Academy of Sciences. He is Professor of Key Laboratory of Freshwater Biodiversity Conservation, Ministry of Agriculture of China. He has been specializing in the research of pond culture facility and ecological engineering technology and has published more than 60 papers in journals.

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