COMPARISON OF MODERN AND TRADITIONAL PIG WASTEWATER TREATMENT IN SERIAN, SARAWAK

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ABSTRACT

Pig farming is an important industry in Sarawak. Efforts have been made by pig farmers to treat pig wastewater by installation of oxidation ponds. However, little information is available on the effectiveness of the ponds installed. In this study, wastewater quality was investigated in two pig farms in Serian, Sarawak. Farms selected were a farm with 8,000 standing pig population (SPP) uses multiple pond system (TB farm) and another farm with 800 SPP use only one pond system (HB farm). The oxidation ponds of TB farm reduced TSS, BODs, COD, and NH3-N by 54%, 39%, 35% and 56%, respectively, whereas in HB farm reductions were 29%, 15%, 10% and 9%, respectively. DO concentrations for TB farm and HB farm increased 40% and 13%, respectively. Nitrate was reduced at 65% in the water samples of TB farm but there was an increase of 11% in the HB farm effluent. Even though TB farm has ten times more SPP than HB farms, the final discharge from TB farm was of significantly better water quality than that of HB farm. It is recommended that at least three ponds of appropriate size with separator be installed for the treatment of pig farm wastewater before being discharged into the river.

INTRODUCTION

During the last 20 years, the livestock industry experienced an exponential growth resulting in integrated large intensive animal farming units that created the need for laws and regulations to control animal waste pollution and minimize the environmental impact of the associated malodors. Pollution from pig, cattle, and poultry farms has become one of the most challenging...