

IMPACTS OF PIG FARMING ON SERIN RIVER, SARAWAK

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Pig farming is an important industry in Sarawak with 2,340 farms generating an estimated revenue of RM 60 million a year. In this industry, plenty of water is used to bath the pigs and clean the pens twice a day. Farmers are required to treat the wastewater containing pig waste and spilt food in oxidation ponds before discharge. However, information on the

impact of this industry on surface water quality is lacking. Therefore, the objective of this study was to determine the impact of pig farm effluent on the water quality of Serin River and its tributaries. Sampling was conducted at four selected stations of Serin river from October to December 2003. Results of analysis show that the tributary that received pig farm effluent has significantly higher mean total suspended solids, biological oxygen demand, chemical oxygen demand, ammonia-nitrogen and reactive phosphorus compared to that of the tributary that did not receive pig farm effluent. Similarly, comparisons between the stations upstream and downstream of the discharge point indicated that total suspended solids, biological oxygen demand, chemical oxygen demand, ammonia nitrogen and reactive phosphorus were higher at the downstream station that received effluent than at the upstream station that did not receive effluent. Dissolved oxygen was the lowest at the tributaries receiving effluent from pig farms with a mean of 2.40 mg/l. According to the Interim Water Quality Standard of the Department of Environment, water quality at the tributary that received pig farm effluent falls into Class III whereas that of the other stations falls into Class II. This indicates that pig farm effluent has negative impact on the water quality of the receiving water bodies. Several possible reasons for the poor water quality in the stream that received effluent are the wastewater may not have been properly treated before discharge due to undersized oxidation ponds, poorly maintained oxidation ponds whereby sludge may have overloaded the ponds, and farmers might not have understood the importance of the maintenance of the oxidation ponds and the importance of environmental conservation. Therefore, it is recommended that farmers be given guidelines on the size of the oxidation ponds that should be constructed and also be trained on the maintenance of the oxidation ponds and the importance of environmental conservation.