

## **WATER QUALITY AND FISH PRODUCTION AT PEJIRU POND, BAU, SARAWAK**

**Ella M. D.<sup>1</sup>, L. Nyanti<sup>2</sup> & Ling T.Y.<sup>3</sup>**

<sup>1,2</sup>Department of Aquatic Sciences

<sup>3</sup>Department of Chemistry

Faculty of Resource Science and Technology

University Malaysia Sarawak

94300 Kota Samarahan

Sarawak

### **ABSTRACT**

This study was conducted to determine the water quality and fish production at Pejiru Pond, Bau, Sarawak. Water samples were collected at 7 stations at the subsurface and bottom of the pond four times from July to December 2008. Fish production data was collected in February 2009. Results show that water quality parameters ranged from 42 to 62 cm for transparency, 10.2 to 102.8 NTU for turbidity, 13.3 to 113.3 mg/L for TSS, 27.7 to 33.3°C for temperature, 1.8 to 15.5 ppm for DO, 6.90 to 7.96 for pH, 0.01 to 0.12 mg/L for nitrate, 0.001 to 0.007 mg/L for nitrite, 0.01 to 0.12 mg/L for orthophosphate, 0.05 to 0.34 mg/L for ammonia nitrogen, 0.75 to 14.26 ppm for BOD<sub>5</sub>, and 34.5 to 129.2 µg/L for chlorophyll-*a*. DO in October and December was below 5 mg/L, the minimum required for aquatic organism. Water quality was affected by the input of nutrients from residential areas, oil palm, vegetables and padi farming around the pond through surface runoff during rainfall events. Fish production was low due to fish loss during flooding and the extensive culture practice. It is therefore recommended that cage culture be practised to increase production and lower the feed conversion ratio.

**Key words:** water quality parameter, fish production, Pejiru Pond

### **INTRODUCTION**

Aquaculture is one of the fastest growing aspects of the agricultural industry worldwide as it is one of the most important food sources. According to Brander (2007), the current global fisheries production is about 160 million tons and still rising due to the increase in aquaculture production. In aquaculture pond, one of the most important factors to be considered in order to maximize the fish production is the water quality of the pond. In Kampung Skibang, Bau, the Pejiru aquaculture pond is used for extensive fish culture. The main problem of the pond is the lacking of water inflow into the pond and thus is dependent on rain water. Moreover, the level of water

quality in this pond had not been studied although this pond is one of the important protein and economic sources for the villagers. This study aimed to investigate the water quality and fish production in Pejiru Pond and made appropriate recommendations for fish production.

### **MATERIALS AND METHODS**

This study was carried out at the Pejiru Pond, of the size of 22.5 acres (9.1 hectares), in Bau, Sarawak. Seven sampling stations were selected to determine the water quality of the pond. The sampling period was from August 2008 until December 2008.