

Pollution Pattern in the Mokuro Dam in Ile-Ife.

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Abstract:

Bacteriological and physical-chemical analyses of the Mokuro Jam (in Ile-Ife) and its distribution system were carried out from December 1982 to November 1983 at monthly intervals, and the quality of water was assessed to establish the pollution pattern.

Generally, the population density of aerobic heterotrophic bacteria varied between wet and dry seasons. While there was an increase in the mean monthly population of bacteria from 4.2×10^2 /ml in November to 4.8×10^6 /ml in February (i.e. dry season) there was a comparative decrease from 11.0×10^6 /ml in June to 1.8×10^3 /ml in October (i.e. rainy season), in the distribution system. In the stream and in the dam, the seasonal trends of total aerobic bacterial distribution followed more or less the same pattern as in the distribution system. In the dam, the faecal coliform populations ranged from zero to 33 MPN/100 ml during the rainy season and from 2 to 221 MPN/100ml in the dry season. The same pattern was observed in the distribution system. Both faecal streptococci and *Clostridium perfringens* were also detected in the water samples with no definite pattern of population distribution between the seasons. The mean monthly faecal streptococci ranged from zero to 2.8×10^4 /ml, while *Clostridium perfringens* ranged from zero to 538 MPN/100ml.

Nitrate, phosphate, chloride and dissolved solid levels were generally low. These compounds ranged from zero to 1.16 mg/l; from zero to 0.038 mg/l, from 3.6 to 54 mg /l, and from 0.0001 to 0.058 g/100ml, respectively. The BOD varied with a range of 1.0 to 12.6mg /l in the dam. In the distribution system, the chlorine residual was generally below 1mg/l, decreasing with distance away from the chlorination point.

Keywords: Pollution/ chlorination/ population density/ aerobic heterotrophic bacteria

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