

**Effect of Different Aerobic and Anoxic Time Periods
on the Effluent Water Quality of a Sequence Batch
Reactor in a Meat Processing Plant**

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by

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Abstract

The performance of a model Sequencing Batch Reactor (SBR) has been studied in aerobic-anoxic sequence for simultaneous COD, BOD, nitrogen and some phosphorus removal. The reactor was operated under eight different variations of aerobic-anoxic sequence, viz. 4+4, 4+3, 4+2, 4+1, 3+1, 3+2, 2+2 and 2+1 hours of react period. Every sequence was operated totally 20 hrs of react period alternatively the aerobic and anoxic period according to above different time combinations. This was carried out with average influent COD level 5183.79 mg/L, BOD 1992.38 mg/L, total nitrogen 10.1 mg/L, ammonia nitrogen 8.95 mg/L and total phosphorus 0.527 mg/L. It has been observed that 95.02 ± 0.17 % of COD removal, 90.24 ± 1.08 % of BOD removal, 89.26 ± 0.3 % of total nitrogen removal would be possible at the end of combination of 4.0 hour aerobic and 2.0 hour anoxic cycle of overall 20 hours reaction period.

Key words: Sequencing Batch Reactor, chemical oxygen demand, biological oxygen demand, nitrification, denitrification.