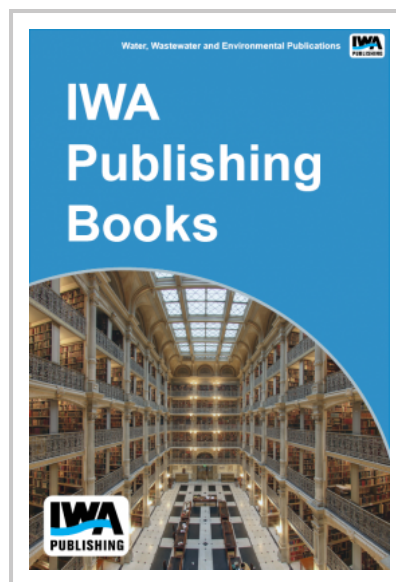


# Develop and Demonstrate Fundamental Basis for Selectors to Improve Activated Sludge Settleability: Phase 2 Lab Investigation

The primary objective of this research was to compare dilute sludge volume index (DSVI) control in equally-sized single- and multi-stage anoxic and anaerobic selectors relative to a control aerobic reactor without a selector, using a synthetic wastewater feed containing both readily biodegradable and slowly biodegradable substrates. A further objective was to compare filamentous microorganism populations and microbial community composition for the different systems by an automated ribosomal intergenic spacer analysis (ARISA) (Fisher and Triplett, 1999) method.

- Describes the kinetic advantage of using multiple stages versus a single stage design for anoxic selectors for removal of readily degradable and slowly degradable substrates
- Shows the importance of using a staged aerobic zone design after a selector to potentially improve sludge settling characteristics as indicated by sludge volume index (SVI)
- Indicates the importance of considering the effect of slowly biodegradable substrate on SVI control
- Indicates the advantage a properly designed sequencing batch reactor can have for SVI control
- Shows the potential for using a new molecular method, an automated ribosomal intergenic spacer analysis (ARISA), for characterizing activated sludge system microbial populations



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