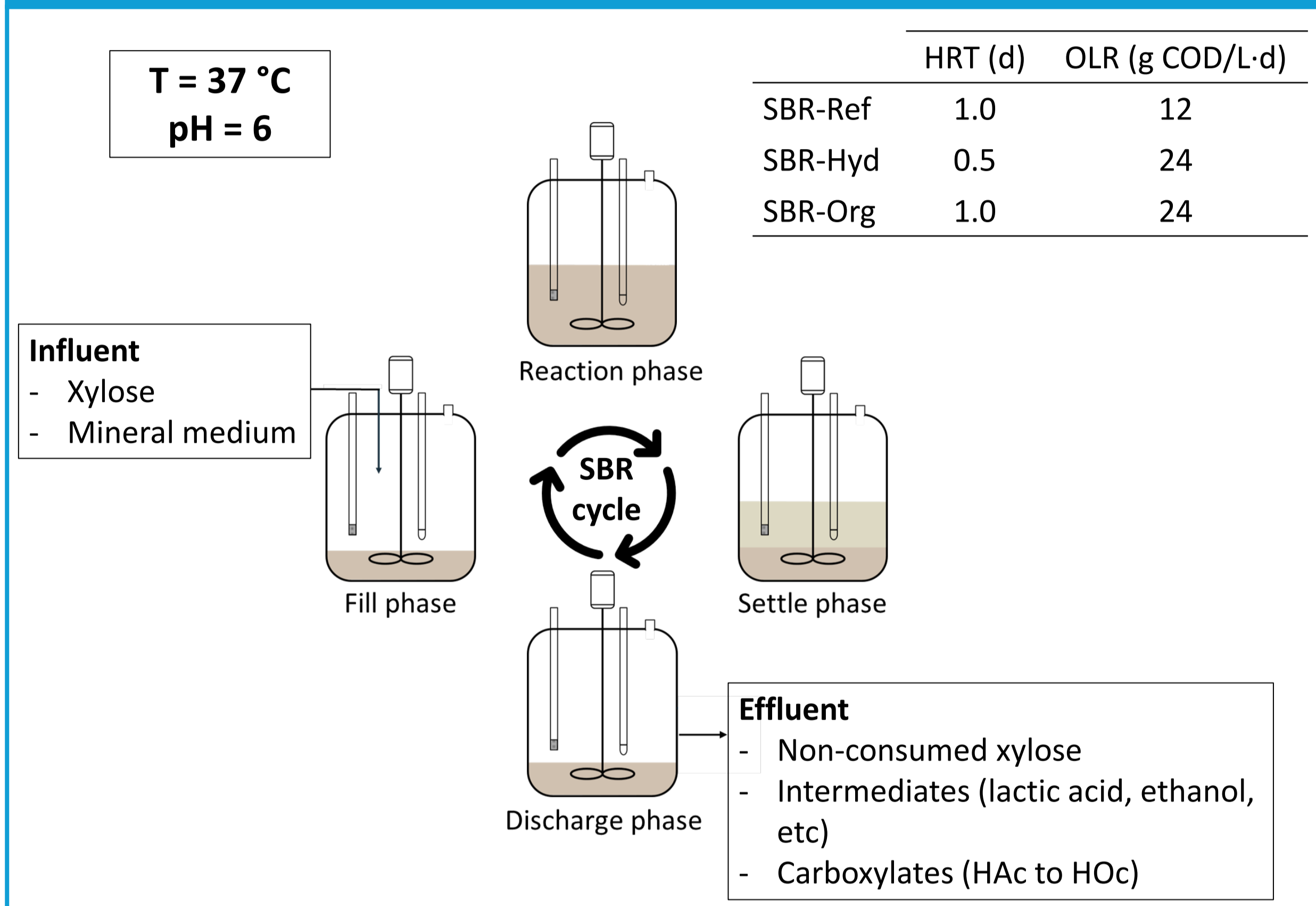


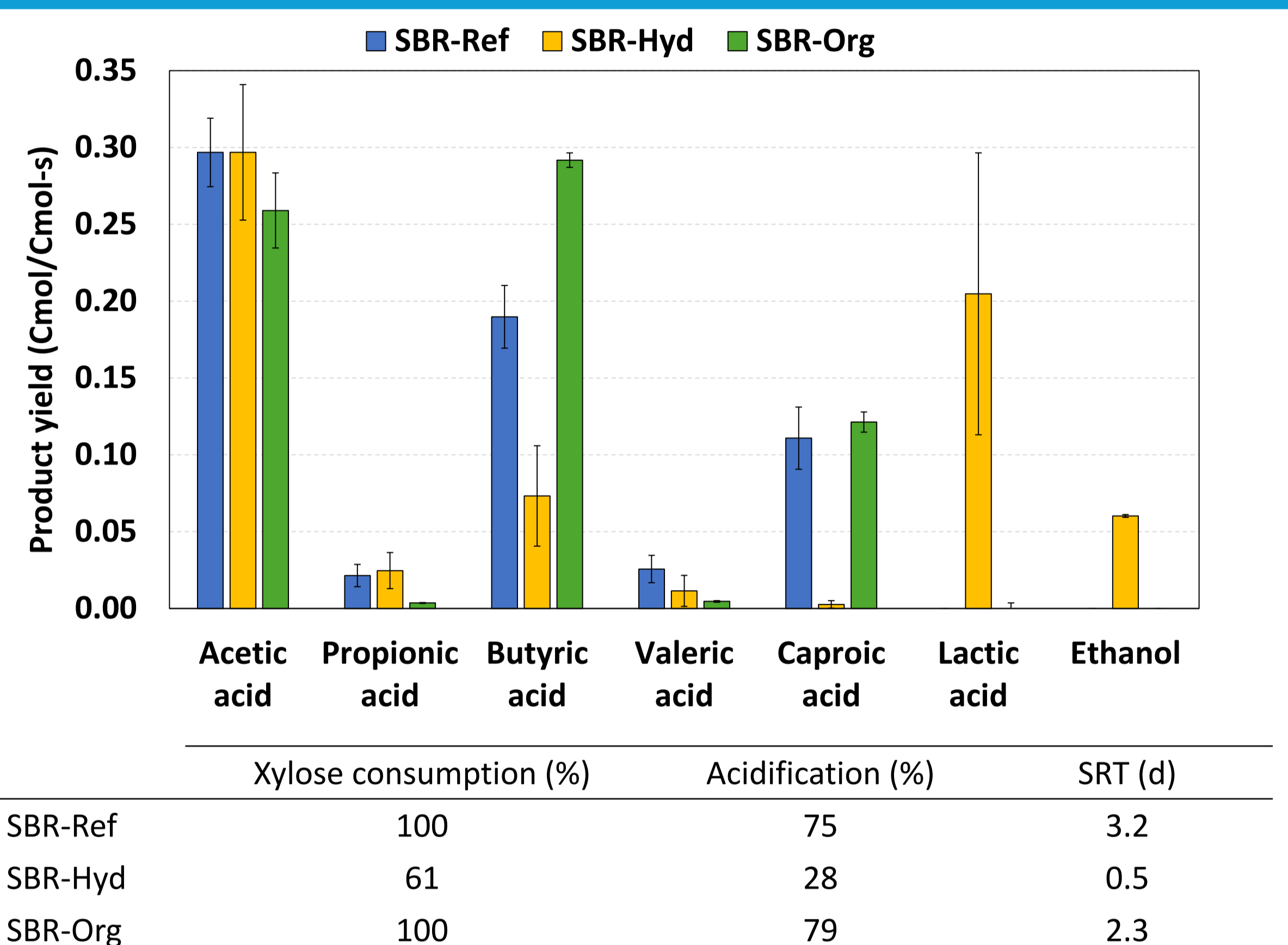
INTRODUCTION

The organic loading rate (OLR) is a useful parameter in the design of mixed-culture fermentation as it relates to the specific activity that microorganisms can deploy. In the case of carbohydrate-rich waste conversion into medium chain carboxylates (MCC), a high OLR is related to an increased lactic acid production due to the fast growth rate of lactic acid bacteria, which could enhance MCC production through chain-elongation process (Liu et al., 2022). However, other studies have reported low OLR as a better strategy (Wang et al., 2023) because chain elongators require a minimum retention time for growth. The OLR is dependent on HRT and substrate concentration in the feeding. **The objective of this study is to assess how a hydraulic (SBR-Hyd) and organic (SBR-Org) overload affect xylose conversion to caproic acid in a Sequential Batch Reactor (SBR).**

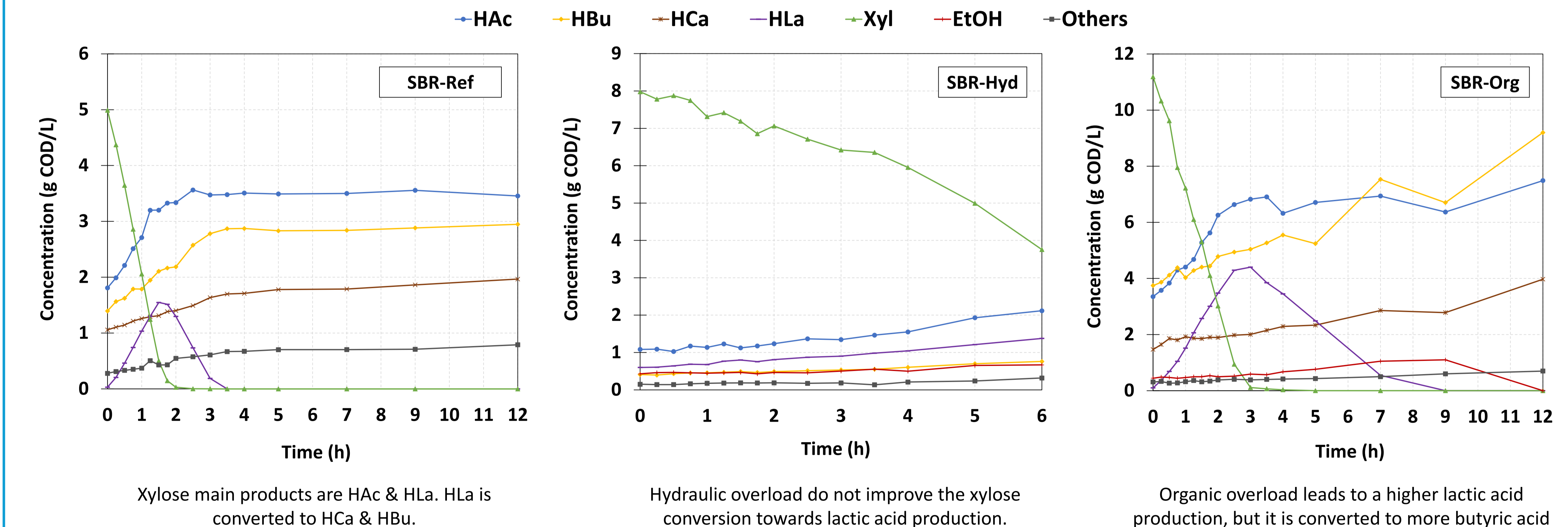
EXPERIMENTAL CONDITIONS



RESULTS & DISCUSSION



Cycle characterisation



CONCLUSIONS

- Hydraulic overload leads to partial xylose conversion and no caproic acid production.
- Organic overload do not affect caproic acid yield but fosters butyric acid yield.
- SBR system can cope with high substrate loads yielding caproic acid if sufficient HRT and SRT is applied.

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