Title: Enrichment of PHA-producing bacteria under continuous substrate supply

Authors: Leonie Marang, Mark C.M. van Loosdrecht, Robbert Kleerebezem

PII: S1871-6784(17)30121-8
DOI: https://doi.org/10.1016/j.nbt.2017.12.001
Reference: NBT 1037

To appear in:

Received date: 27-2-2017
Revised date: 28-8-2017
Accepted date: 4-12-2017

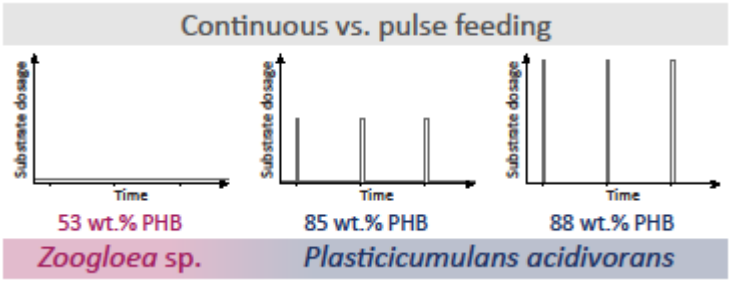
Please cite this article as: Marang, Leonie, van Loosdrecht, Mark C.M., Kleerebezem, Robbert, Enrichment of PHA-producing bacteria under continuous substrate supply.New Biotechnology https://doi.org/10.1016/j.nbt.2017.12.001

Enrichment of PHA-producing bacteria under continuous substrate supply

Leonie Marang, Mark C.M. van Loosdrecht, Robbert Kleerebezem*

Department of Biotechnology, Delft University of Technology, Van der Maasweg 9, 2629 HZ Delft, Netherlands

Graphical abstract



Highlights:

- Two continuously-fed SBRs to study the impact of the absence of a famine phase.
- When all acetate fed continuously; *Zoogloea* sp. enriched and 53 wt.% PHA stored.
- When half the acetate fed as pulse; *P. acidivorans* enriched and 85 wt.% PHA stored.
- Enrichment of PHA producer *P. acidivorans* not impeded by continuous acetate supply.
- To enrich superior PHA producers a true feast is essential, a true famine is not.

Abstract

* Corresponding author. *E-mail address:* r.kleerebezem@tudelft.nl (R. Kleerebezem).

Abbreviations: CSTR, continuous stirred-tank reactor; HPLC, high-performance liquid chromatograph; HRT, hydraulic retention time; PHA, polyhydroxyalkanoate; PHB, poly(3-hydroxybutyrate); SBR, sequencing batch reactor; SFBR, sequencing fed-batch reactor; SRT, solids retention time; TSS, total suspended solids.