

Lactate metabolism and microbiome composition are affected by nitrogen gas supply in continuous lactate-based chain elongation

Carlos A. Contreras-Dávila, Arielle Ali, Cees J.N. Buisman and David P.B.T.B. Strik*

Environmental Technology, Wageningen University & Research, Bornse Weiland 9, 6708 WG, Wageningen, the Netherlands.

*Correspondence: david.strik@wur.nl

4 figures

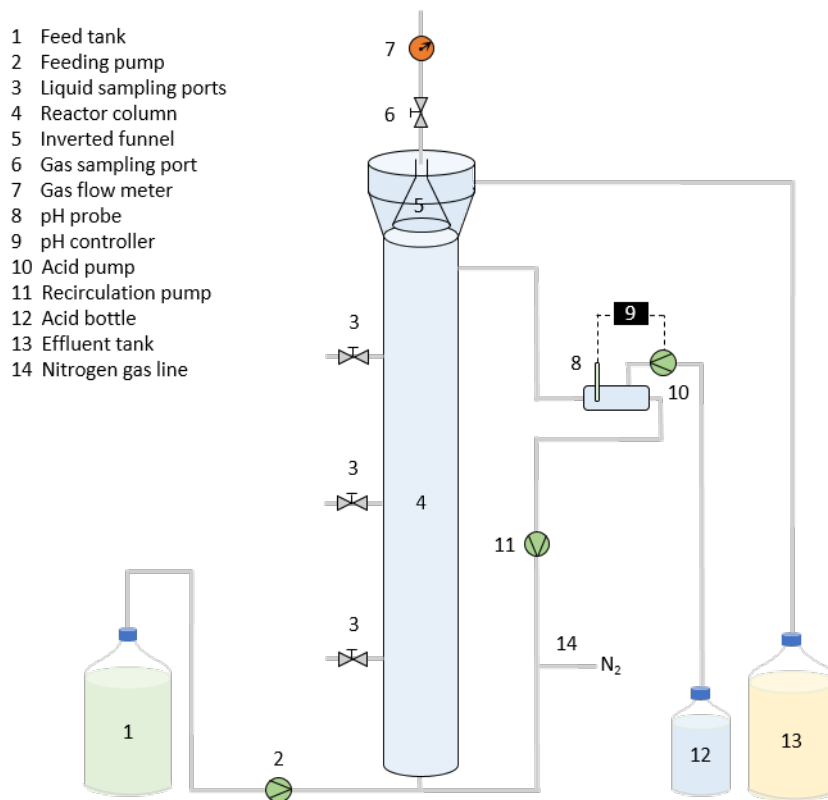


Figure S1. Schematic of upflow anaerobic reactor set-up.

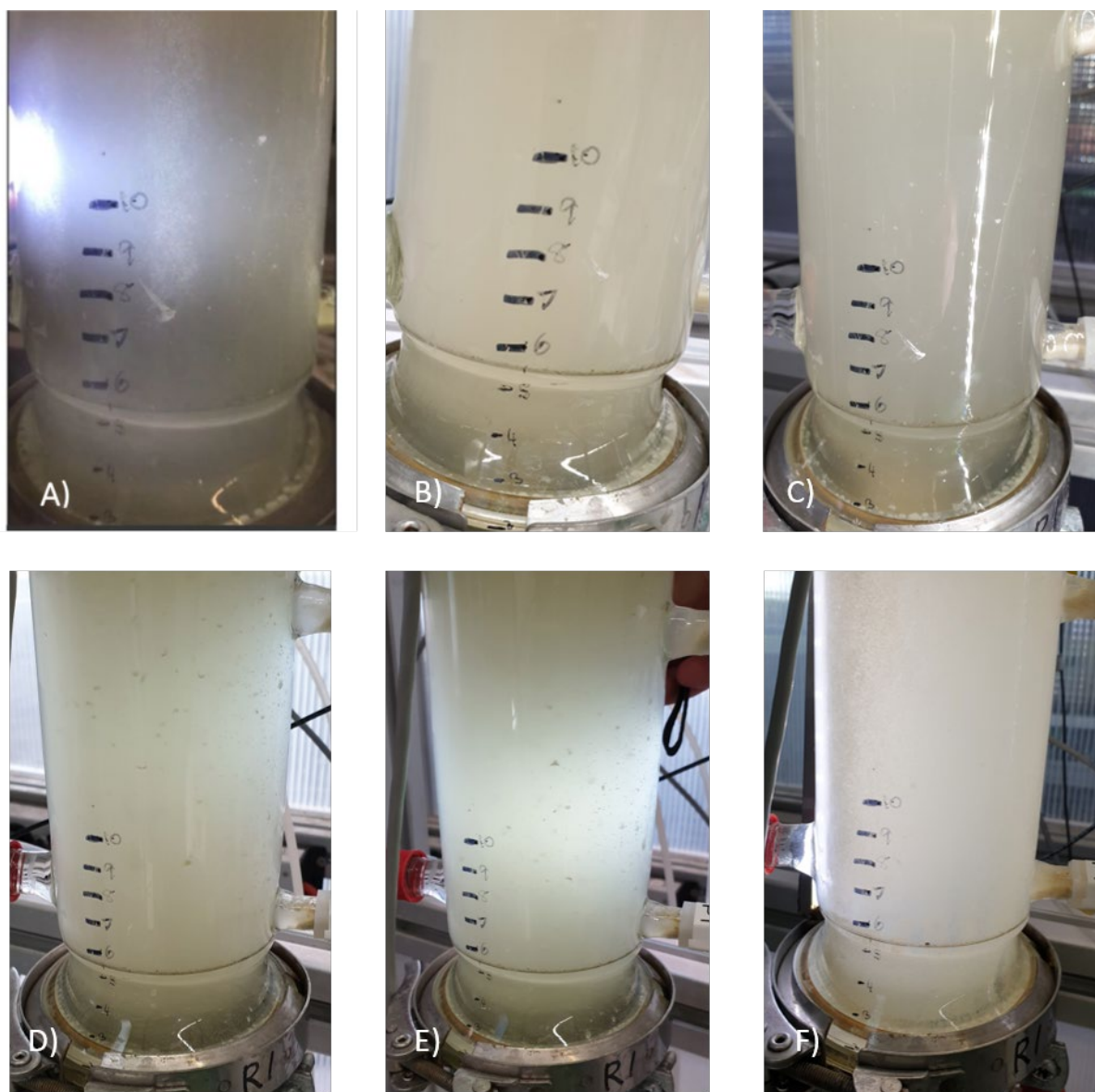


Figure S2. Biomass appearance (A) before continuous gas supply (day 57.7); (B) during continuous gas supply at $12 \text{ mL} \cdot \text{min}^{-1}$ (day 84.7); (C) during continuous gas supply at $120 \text{ mL} \cdot \text{min}^{-1}$; (D) intermittent gas supply at HRT 2 days (day 140.8); (E) intermittent gas supply at HRT 1 day (day 171.7); and (F) without gas supply (day 219).

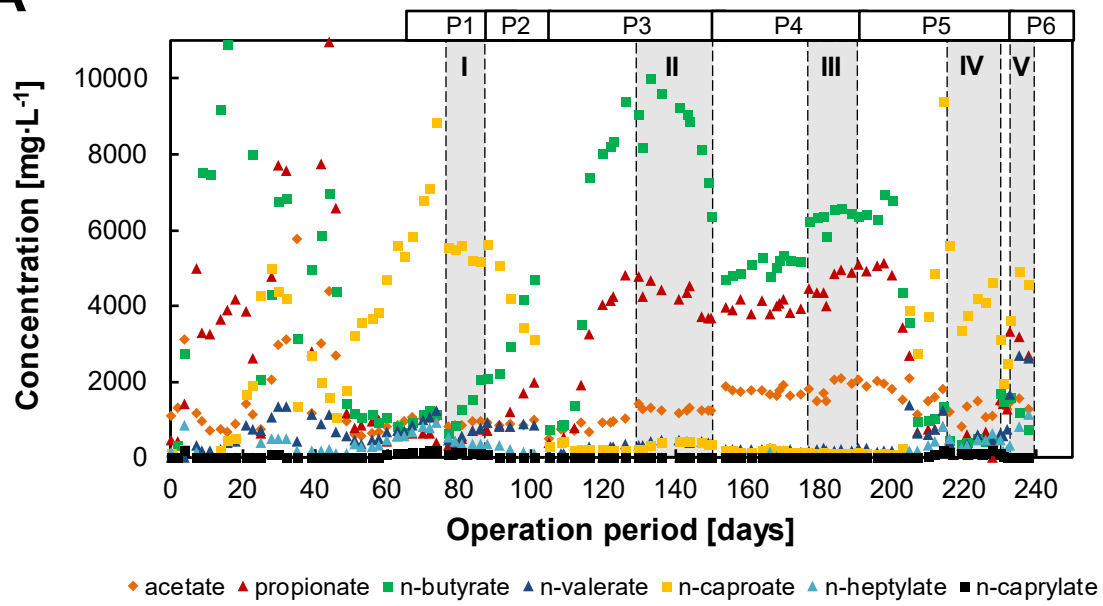
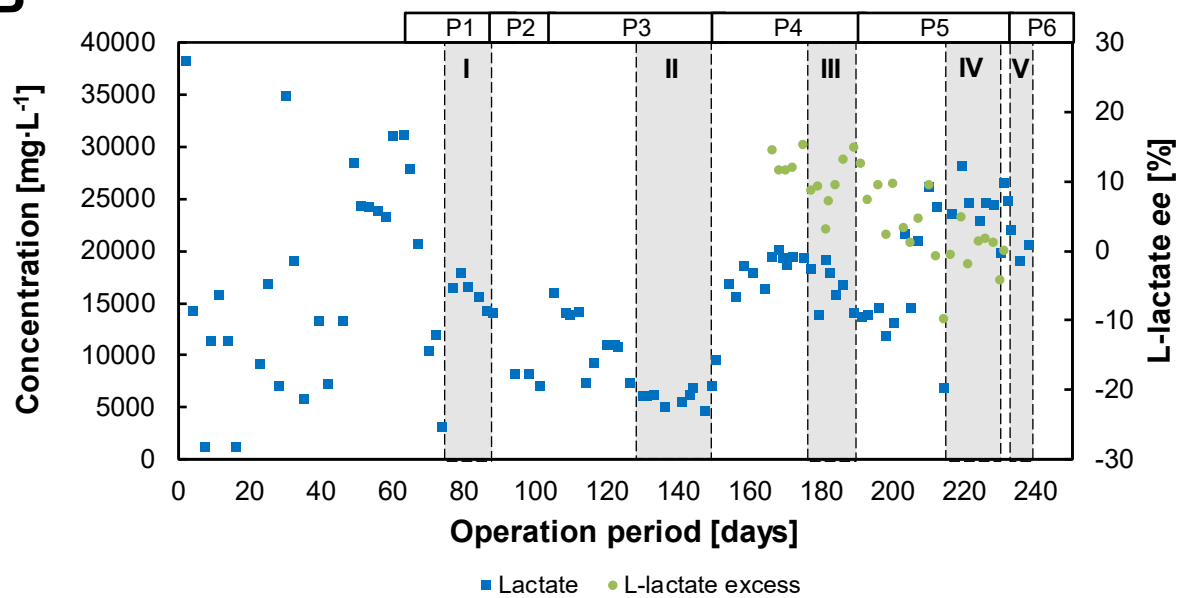
A**B**

Figure S3. Carboxylates concentrations over operation time. (A) Metabolites concentrations, (B) residual lactate concentrations and L-lactate enantiomeric excess (ee). Shaded areas I-V indicate stabilized operation time periods.

19	<i>Azospirillum</i>	Azospirillales
	<i>Arcobacter</i>	Campylobacteriales
1	<i>Glycocalyx</i>	Caulobacteriales
6	<i>Hyphomonas</i>	
9	<i>Clostridium</i> sensu stricto 12	Clostridiales
9	<i>Clostridium</i> sensu stricto 15	
	<i>Haloimpatiens</i>	
1	<i>Corynebacterium</i>	Corynebacteriales
	[Eubacterium] fissicatena group	Lachnospirales
	<i>Anaerocolumna</i>	
	<i>Anaerotignum</i>	
	<i>Pseudoclavibacter</i>	Micrococcales
25	<i>Caproiciproducens</i>	Oscillospirales
	<i>Candidatus Paracaedibacter</i>	Paracaedibacteriales
3	<i>Fusibacter</i>	Peptostreptococcales-Tissierellales
5	Unclassified	
	<i>Reyranella</i>	Reyranellales
	<i>Aquamicrobium</i>	Rhizobiales
	<i>Brucella</i>	
	<i>Devosia</i>	
	<i>Pannonibacter</i>	
10	<i>Paracoccus</i>	Rhodobacteriales
1	<i>Sphingopyxis</i>	Sphingomonadales
1	<i>Aminivibrio</i> EBM-39	Synergistales

Figure S4. Inoculum composition at genus level. Taxonomy was assigned based on SILVA 138 SSU Ref NR 99 database.