

Supplementary Information

Biogas Production from Food Residues – The Role of Trace Metals and Co-Digestion with Primary Sludge

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Anaerobic Digestion (AD) trial of Organic Fraction of Municipal Solid Waste (OFMSW) digestion, along with Commercial Trace Elements Mixture Solution (CTES) addition

Table S1. CTES Dosing in reactors fed only with OFMSW.

Days	OLR, Clarification of testing strategies	OLR (g/L/d)	Dosage of CTES (μL/g VS/d)	Specific biogas production during stable process conditions (mL/g VS/d)	Methane content (%)	Comments
1–31	Start point	OLR 1.0	7	638.03 (+/- 148.83)	54	Dosing start
32–47	An attempt to increase the OLR	OLR 2.0	7	Rapid decrease in specific biogas production to below 100 mL/g VS/d	52	Result in high VFA/TA ratio (max 0.96)
48–112	Decreasing the OLR	OLR 1.0	7	Increase in specific biogas production to original levels	52	Result in low VFA/TA ratio (0,07)
113–124	New attempt to increase the OLR	OLR 2.0	7	Decrease in specific biogas production to approximately 300 mL/g VS/d	54	Result in high VFA/TA ratio (max 0.35)
125–157	Decreasing the OLR	OLR 1.0	7	641.21 (+/- 159.38)	54	Result in low VFA/TA ratio (0.072)
158–190	Cautiously increasing the OLR	OLR 1.5	14	Specific biogas production within original levels	54	Continued low VFA/TA ratio
190–222	Cautiously increasing the OLR	OLR 2.0	14	634.87 (+/- 168,66)	54	Continued low VFA/TA ratio
223–289	Increasing the OLR	OLR 3.0	14	664.97 (+/- 138.78)	54	Continued low VFA/TA ratio
289–309	Increasing the OLR	OLR 4.0	14	Slight decrease in specific biogas production	54	Result in High VFA/TA ratio (max 0,31)

310– 322	Slight decrease of the OLR	OLR 3.5	14	Increase in specific biogas production to original levels	54	Result in lower VFA/TA ratio (0.14)
322– 331	Increasing the OLR	OLR 4.0	14	Slight decrease in biogas production	54	Result in High VFA/TA ratio (max 0,30)
332– 363	Slight decrease of the OLR for longer period	OLR 3.5	14	Increase in specific biogas production to original levels	54	Result in low VFA/TA ratio (0.071)
363– 411	Cautiously increasing the OLR	OLR 4.0	14	670,46 (+/- 96,14)	54	Continued low VFA/TA ratio