



Supplementary Materials

Table S1. Parameters Estimated from Gompertz Modified Model and First-Order Model Using Anaerobic Sludge

Parameters	Control	Control*	R ₂	R ₂ *
K	0.1102	0.0935	0.0855	0.1063
R ²	0.9094	0.928	0.8509	0.888
R _m	13.67	12.32	18.57	21.26

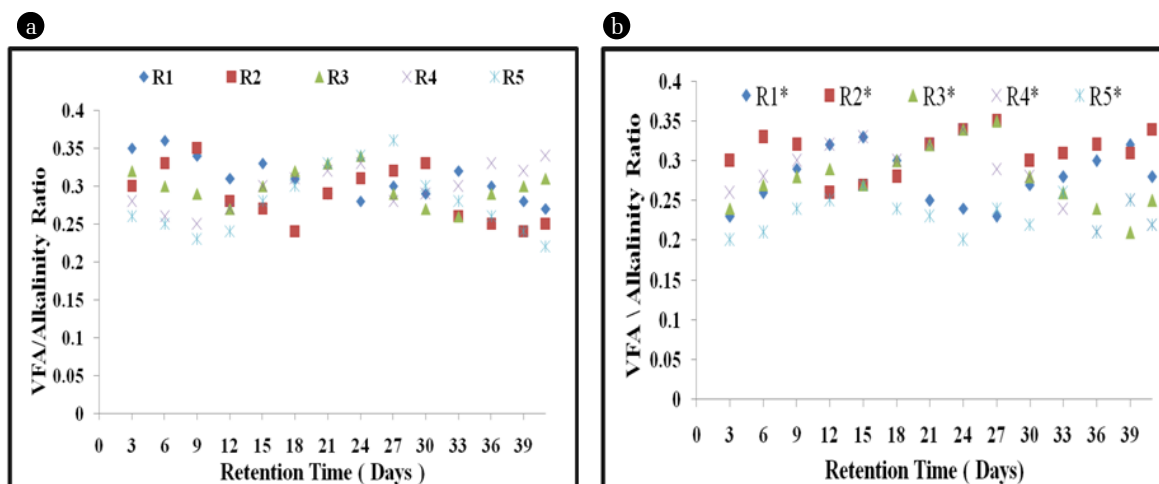


Fig. S1. VFA/Alkalinity ratio at different (I/S) ratios (a) using AS (b) using AS +CD

Table S2. Present Study Compared with the Previous Study

No	Substrate	Cumulative biogas Yield(ml/g VS)	Temp (°C)	Methane Content	Digestion Mode	Inoculum used	References
1.	FVW + Sugarcane Bagasse	2600ml /d	37	Not reported	Batch	Waste Activated Sludge	[1]
2.	FVW	265-444 Nml / g VS	37	248-471 Nml / g VS	Batch	Sewage Sludge	[2]
3.	Food waste	448.9	37	61.1±0.8	Semi-continuous	Seed Sludge	[3]
4.	Catering waste and treated parthenium biomass	559 ml L ⁻¹ d ⁻¹	30	Not reported	Semi-continuous	Cattle Manure	[4]
5	50% FW + 50% Yard waste	296.0 ± 19.9	37	63.5 ± 1.3	Semi-continuous	Seed Sludge	[3]
6	FVW	459.49	37	64%	Batch	Anaerobic Sludge	Present Study
7	FVW	468.82	37	61.2%	Batch	Anaerobic Sludge +Cow dung	Present Study

References

1. Vats N, Khan AA, Ahmad K. Effect of substrate ratio on biogas yield for anaerobic co-digestion of fruit vegetable waste & sugarcane bagasse. *Environ. Technol. Innovation*. 2019;13:331-339. <https://doi.org/10.1016/j.eti.2019.01.003>
2. Safar KM, Bux MR, Aslam, UM. Waste to energy: power generation potential of putrescible wastes by anaerobic digestion process at Hyderabad, Pakistan. *J. Mater. Cycles Waste Manag.* 2018;20:1239-1247. <https://doi.org/10.1007/s10163-017-0689-y>
3. Mu L, Zhang L, Zhu K, Ma J, Ifran M, Li A. Anaerobic co-digestion of sewage sludge, food waste and yard waste: Synergistic enhancement on process stability and biogas production. *Sci. Total Environ.* 2020;704:135429. <https://doi.org/10.1016/j.scitotenv.2019.135429>
4. Tayyab A, Ahmad Z, Mahmood T, et al. Anaerobic co-digestion of catering food waste utilizing *Parthenium hysterophorus* as co-substrate for biogas production. *Biomass Bioenerg.* 2019;124:74-82. <https://doi.org/10.1016/j.biombioe.2019.03.013>