

Supplementary Materials

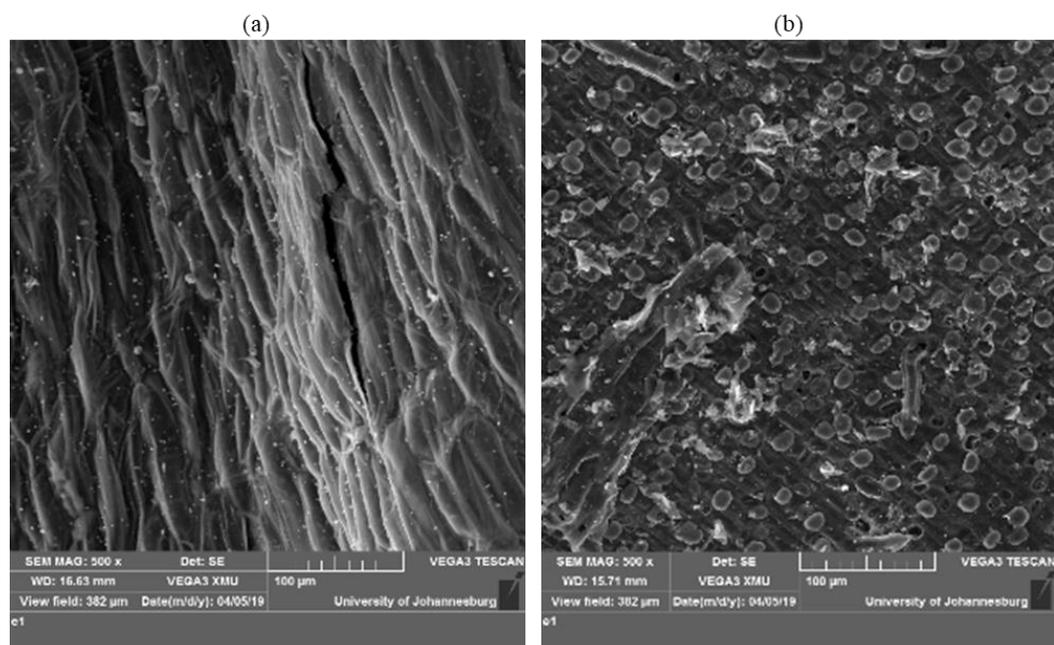


Fig. S1 Scanning electron microscope (SEM) pictures of the corn stover biomass before (a) and after the pyrolysis process (b).

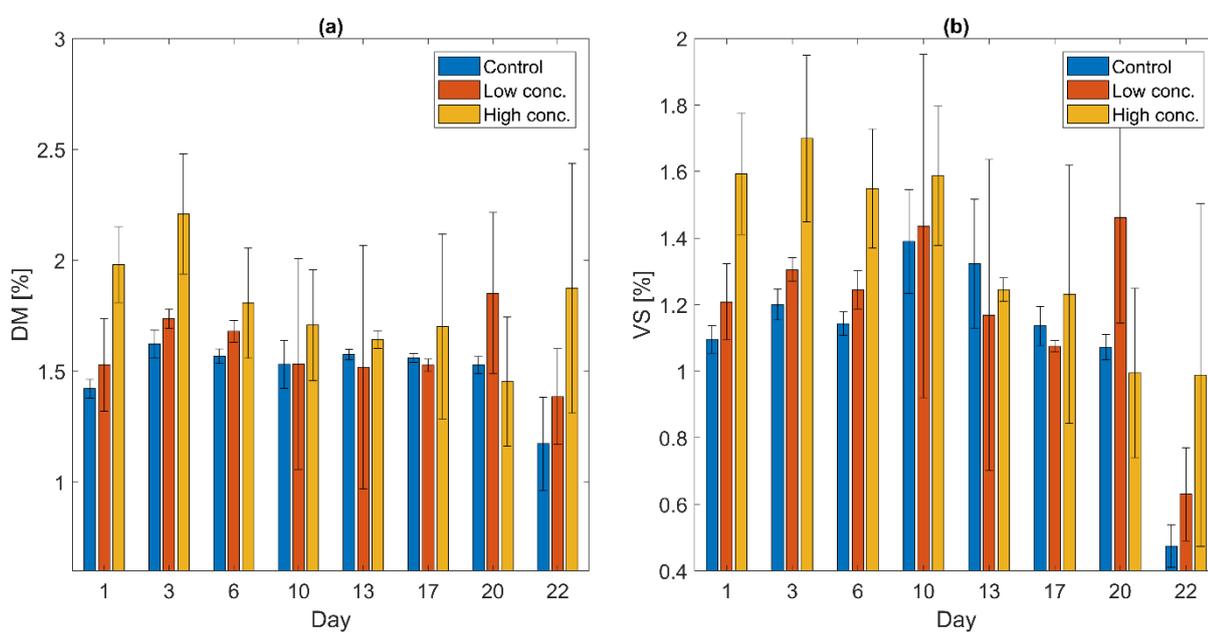


Fig. S2 Dry matter (DM) (a) and volatile solids (VS) content (b) in lab-scale bioreactors operated at 45 °C over a period of 22 days. Different colours indicate the addition of low (0.25 g g⁻¹ VS) and high (0.5 g g⁻¹ VS) concentrations of biochar. Reactors without biochar addition served as control. The plot shows the means ± standard deviation (n = 3).

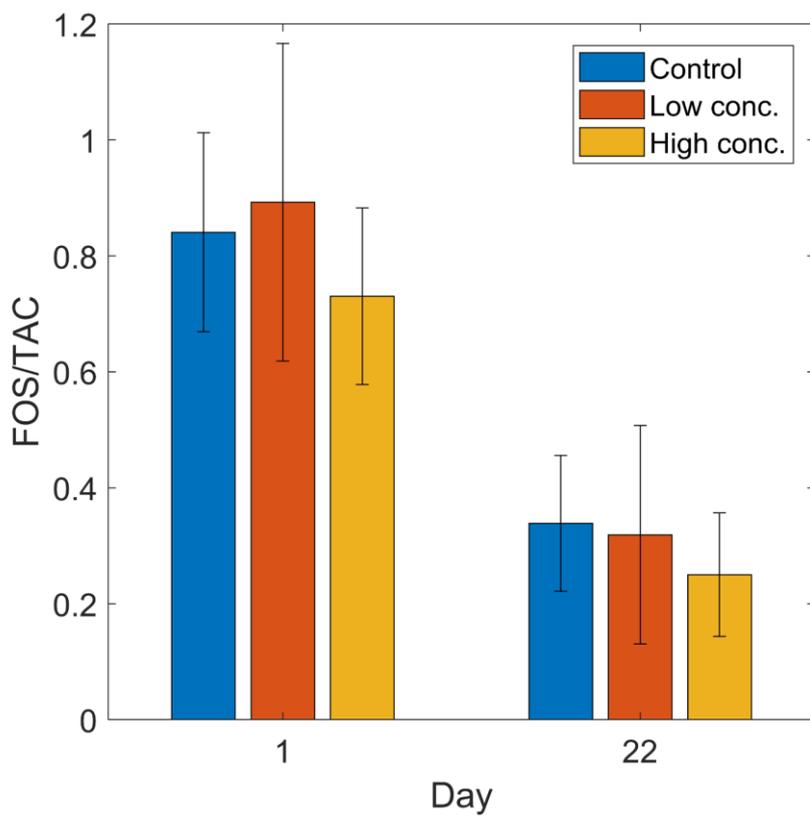


Fig. S3. FOS/TAC ratio in lab-scale bioreactors operated at 45°C at the beginning and end of the experiment. Different colours indicate the addition of low (0.25 g g⁻¹ VS) and high (0.5 g g⁻¹ VS) concentrations of biochar. Reactors without biochar addition served as control. The plot shows the means ± standard deviation (n = 3).

Table S1. Physico-Chemical Properties of Biochar, Cattle Slurry and Corn Straw (Atomic ratios are calculated from the elemental composition. MC = Moisture content, DM = Dry matter. FW = Fresh weight. VS = Volatile solids. BET = Brunauer-Emmet-Teller. n.d. = not determined)

Parameters	Unit	Biochar	Cattle slurry ¹	Corn straw ¹	
Physico-chemical	MC	% (w/w)	5	n.d.	n.d.
	DM	% FW (w/w)	n.d.	6.80	94.0
	VS	% FW (w/w)	16	5.00	89.1
	Ash	% (w/w)	6	n.d.	n.d.
	pH		8.25	7.79	n.d.
	Fixed carbon	% (w/w)	73	n.d.	n.d.
Elemental composition	Carbon	% DM (w/w)	76.0	39.9	45.0
	Hydrogen	% DM (w/w)	2.17	5.00	5.82
	Nitrogen	% DM (w/w)	0.87	2.75	0.84
	Sulphur	% DM (w/w)	0.00	0.87	0.44
	Oxygen	% DM (w/w)	20.9	32.8	45.3
Atomic ratio	O/C		0.28	0.82	1.01
	H/C		0.03	0.13	0.13
Physio-sorption isotherm	BET surface area	m ² g ⁻¹	0.49	n.d.	n.d.
	Total pore volume	cm ³ g ⁻¹	0.002	n.d.	n.d.
	Average pore size	nm	13.5	n.d.	n.d.

¹Data originating from Hupfauf et al. [1]

1. Hupfauf S, Plattner P, Wagner AO, Kaufmann R, Insam H, Podmirseg SM. Temperature shapes the microbiota in anaerobic digestion and drives efficiency to a maximum at 45 °C. *Bioresour. Technol.* 2018;269:309-318.