

Supplementary Table S5 Statistical results of the heterogeneity test for biochar properties and initial composting properties among the maturity indicators

Compost maturity indicator	Biochar properties/composting / Bulking agent	Number of studies	df	Q_b	P (Chi-Square)
C/N ratio	Feedstock type	155	4	39.059	0.000
	Pyrolysis temperature	129	2	6.0829	0.048
	Size	96	1	11.156	0.001
	Carbon to nitrogen	141	2	14.108	0.001
	Electricity conductivity	92	2	5.973	0.015
	Surface area	68	2	2.274	0.132
	pH	136	1	0.464	0.496
	Pore volume	43	1	6.285	0.012
	Amendment rate	155	2	0.010	0.995
	Waste type	155	3	25.467	0.000
	Initial pH	148	2	12.276	0.002
	Initial carbon to nitrogen	155	3	26.956	0.000
	Initial moisture content	155	3	24.941	0.000
	Bulking agent type	139	2	2.004	0.367
GI	Feedstock type	145	4	12.668	0.013
	Pyrolysis temperature	122	2	8.586	0.014
	Size	87	1	1.819	0.177
	Carbon to nitrogen	116	2	12.255	0.002
	Electricity conductivity	83	1	1.330	0.249
	Surface area	54	1	3.365	0.067
	pH	111	1	19.882	0.000
	Pore volume	35	1	0.704	0.401
	Amendment rate	145	2	6.777	0.034
	Waste type	145	3	56.517	0.000
	Initial pH	122	2	23.470	0.000
	Initial carbon to nitrogen	141	3	43.510	0.000
	Initial moisture content	145	3	20.956	0.000
	Bulking agent type	140	2	13.717	0.001
NO ₃ ⁻ -N	Feedstock type	127	4	4.260	0.372
	Pyrolysis temperature	112	2	8.732	0.013
	Size	59	1	7.414	0.006
	Carbon to nitrogen	111	2	11.682	0.003
	Electricity conductivity	64	1	0.671	0.413
	Surface area	61	1	1.034	0.309
	pH	109	1	1.918	0.166
	Pore volume	34	1	26.375	0.000
	Amendment rate	127	2	6.498	0.039
	Waste type	127	3	55.633	0.000
	Initial pH	121	2	41.659	0.000

NH ₄ ⁺ -N	Initial carbon to nitrogen	122	3	22.227	0.000
	Initial moisture content	123	3	83.378	0.000
	Bulking agent type	113	2	1.094	0.579
	Feedstock type	135	4	6.717	0.152
	Pyrolysis temperature	116	2	0.672	0.715
	Size	70	1	3.756	0.053
	Carbon to nitrogen	119	2	6.354	0.042
	Electricity conductivity	74	1	0.409	0.522
	Surface area	63	1	5.043	0.025
	pH	116	1	1.389	0.239
	Pore volume	36	1	6.688	0.010
	Amendment rate	135	2	0.071	0.965
	Waste type	135	3	2.964	0.397
	Initial pH	130	2	1.123	0.570
	Initial carbon to nitrogen	135	3	5.909	0.116
CO ₂	Initial moisture content	132	3	11.127	0.011
	Bulking agent type	122	2	0.553	0.758
	Feedstock type	75	4	48.471	0.000
	Pyrolysis temperature	62	2	0.181	0.913
	Size	52	1	4.294	0.038
	Carbon to nitrogen	73	2	12.538	0.002
	Electricity conductivity	57	1	0.177	0.674
	Surface area	27	1	12.182	0.000
	pH	67	1	0.518	0.472
	Pore volume	16	1	8.165	0.004
	Amendment rate	75	2	5.997	0.050
	Waste type	75	3	65.634	0.000
	Initial pH	75	2	6.143	0.046
	Initial carbon to nitrogen	75	3	2.132	0.545
	Initial moisture content	75	3	55.059	0.000
CH ₄	Bulking agent type	70	2	0.617	0.734
	Feedstock type	55	4	25.731	0.000
	Pyrolysis temperature	46	1	0.098	0.755
	Size	39	1	0.033	0.856
	Carbon to nitrogen	50	2	4.159	0.125
	Electricity conductivity	39	1	0.482	0.488
	Surface area	31	1	0.007	0.931
	pH	49	1	4.671	0.031
	Pore volume	22	1	2.082	0.149
	Amendment rate	55	2	48.463	0.000
	Waste type	55	3	29.735	0.000
	Initial pH	55	2	1.959	0.376
	Initial carbon to nitrogen	55	3	9.359	0.025
	Initial moisture content	55	3	10.834	0.013

NH ₃	Bulking agent type	54	2	11.166	0.004
	Feedstock type	89	4	38.515	0.000
	Pyrolysis temperature	73	2	4.177	0.124
	Size	57	1	34.882	0.000
	Carbon to nitrogen	80	2	41.841	0.000
	Electricity conductivity	59	1	5.411	0.020
	Surface area	42	1	89.811	0.000
	pH	82	1	53.936	0.000
	Pore volume	34	1	25.771	0.000
	Amendment rate	88	2	110.592	0.000
	Waste type	89	3	60.142	0.000
	Initial pH	89	2	44.896	0.000
	Initial carbon to nitrogen	89	3	13.139	0.004
	Initial moisture content	86	3	17.469	0.001
	Bulking agent type	88	2	57.245	0.000
N ₂ O	Feedstock type	62	4	24.918	0.000
	Pyrolysis temperature	50	1	9.640	0.002
	Size	43	1	4.077	0.043
	Carbon to nitrogen	54	2	13.180	0.001
	Electricity conductivity	37	1	0.226	0.634
	Surface area	32	1	2.521	0.112
	pH	54	1	19.145	0.000
	Pore volume	22	1	8.284	0.004
	Amendment rate	62	2	7.344	0.025
	Waste type	62	3	30.515	0.000
	Initial pH	61	2	3.068	0.216
	Initial carbon to nitrogen	62	3	8.569	0.036
	Initial moisture content	59	3	16.440	0.001
	Bulking agent type	58	2	5.088	0.079