

Supplementary Table S6 Statistical results of publication bias for biochar properties and initial composting properties among the maturity indicators.

Compost indicator	Biochar properties / composting conditions	Number of cases (n)	Funnel plot statistics		Fail-safe numbers	5n + 1	Existence of bias	Does bias affect the trend?
			(p-value)					
			Kendall's Tau	Spearman Rank-order correlation				
C/N ratio	Feedstock type	461	0.490	0.563	600531.2	2306	No	No
	Pyrolysis temperature	382	0.528	0.600	444138.6	1911	No	No
	Size	286	0.498	0.570	592634.1	1431	No	No
	Carbon to nitrogen	421	0.706	0.749	594093.1	2106	No	No
	Electricity conductivity	279	0.259	0.321	594057.0	1396	No	No
	Surface area	198	0.135	0.220	276645.5	991	No	No
	pH	409	0.181	0.259	602077.8	2046	No	No
	Pore volume	127	0.728	0.777	307688.5	636	No	No
	Amendment rate	461	0.490	0.563	600531.2	2306	No	No
	waste type	461	0.490	0.563	600531.2	2306	No	No
	Initial pH	440	0.498	0.570	592634.1	2201	No	No
	Initial carbon to nitrogen	461	0.490	0.563	600531.2	2306	No	No
	Initial moisture content	461	0.490	0.563	600531.2	2306	No	No
	Bulking agent type	412	0.252	0.334	603479.8	2061	No	No
GI	Feedstock type	434	0.484	0.554	554816.2	2171	No	No
	Pyrolysis temperature	366	0.305	0.387	415193.9	1831	No	No
	Size	261	0.984	0.950	344001.4	1306	No	No
	Carbon to nitrogen	347	0.228	0.296	135407.0	1736	No	No
	Electricity conductivity	253	0.214	0.297	73026.7	1266	No	No
	Surface area	164	0.623	0.685	25335.3	821	No	No
	pH	336	0.202	0.286	461193.2	1681	No	No
	Pore volume	105	0.327	0.415	16005.1	526	No	No
	Amendment rate	434	0.484	0.554	554816.2	2171	No	No
	waste type	434	0.484	0.554	554816.2	2171	No	No
	Initial pH	365	0.600	0.647	504347.6	1826	No	No
	Initial carbon to nitrogen	431	0.492	0.561	553969.0	2156	No	No
	Initial moisture content	434	0.484	0.554	554816.2	2171	No	No
	Bulking agent type	419	0.484	0.554	529490.4	2096	No	No
NO ₃ ⁻ -N	Feedstock type	383	0.504	0.587	103107.9	1916	No	No
	Pyrolysis temperature	338	0.440	0.528	82708.2	1691	No	No
	Size	183	0.035	0.081	58128.4	916	No	No
	Carbon to nitrogen	337	0.383	0.475	76201.5	1686	No	No
	Electricity conductivity	195	0.977	0.964	70427.9	976	No	No
	Surface area	183	0.263	0.372	71696.5	916	No	No
	pH	330	0.720	0.776	107545.7	1651	No	No
	Pore volume	101	0.044	0.093	71256.9	506	No	No
	Amendment rate	383	0.504	0.587	103107.9	1916	No	No

	waste type	383	0.504	0.587	103107.9	1916	No	No
	Initial pH	365	0.504	0.587	96263.4	1826	No	No
	Initial carbon to nitrogen	368	0.006	0.021	1558.9	1841	No	No
	Initial moisture content	371	0.489	0.575	96686.6	1855	No	No
	Bulking agent type	340	0.479	0.560	111756.0	1701	No	No
NH ₄ ⁺ -N	Feedstock type	405	0.184	0.271	466143.1	2026	No	No
	Pyrolysis temperature	348	0.245	0.331	288816.9	1741	No	No
	Size	213	0.198	0.298	289806.6	1066	No	No
	Carbon to nitrogen	364	0.105	0.177	462247.3	1821	No	No
	Electricity conductivity	225	0.334	0.430	413980.1	1126	No	No
	Surface area	189	0.542	0.608	45194.5	946	No	No
	pH	351	0.308	0.407	520933.2	1756	No	No
	Pore volume	107	0.772	0.814	67539.4	536	No	No
	Amendment rate	405	0.184	0.271	466143.1	2026	No	No
	waste type	405	0.184	0.271	466143.1	2026	No	No
	Initial pH	390	0.202	0.290	464212.6	1951	No	No
	Initial carbon to nitrogen	405	0.184	0.271	466143.1	2026	No	No
	Initial moisture content	396	0.191	0.279	445833.3	1981	No	No
	Bulking agent type	365	0.081	0.144	444831.3	1981	No	No
CO ₂	Feedstock type	227	0.058	0.107	40550.8	1136	No	No
	Pyrolysis temperature	187	0.101	0.158	42988.1	936	No	No
	Size	157	0.025	0.050	27899.4	786	Yes	No
	Carbon to nitrogen	221	0.058	0.106	41527.4	1106	No	No
	Electricity conductivity	174	0.353	0.431	33596.8	871	No	No
	Surface area	84	0.167	0.255	6055.9	421	No	No
	pH	206	0.482	0.554	38363.6	1031	No	No
	Pore volume	49	0.524	0.605	3153.7	246	No	No
	Amendment rate	227	0.058	0.107	40550.8	1136	No	No
	waste type	227	0.058	0.107	40550.8	1136	No	No
	Initial pH	227	0.058	0.107	40550.8	1136	No	No
	Initial carbon to nitrogen	227	0.058	0.107	40550.8	1136	No	No
	Initial moisture content	227	0.058	0.107	40550.8	1136	No	No
	Bulking agent type	211	0.018	0.043	43735.2	1056	No	No
CH ₄	Feedstock type	167	0.896	0.957	63561.7	836	No	No
	Pyrolysis temperature	139	0.893	0.957	38765.6	696	No	No
	Size	119	0.552	0.629	45478.2	596	Yes	No
	Carbon to nitrogen	152	0.864	0.937	61033.0	761	No	No
	Electricity conductivity	121	0.419	0.512	39737.7	606	No	No
	Surface area	95	0.198	0.267	22887.7	476	No	No
	pH	153	0.809	0.830	51634.9	766	No	No
	Pore volume	69	0.949	0.920	14291.2	346	No	No
	Amendment rate	167	0.896	0.957	63561.7	836	No	No
	waste type	167	0.896	0.957	63561.7	836	No	No
	Initial pH	167	0.896	0.957	63561.7	836	No	No
	Initial carbon to nitrogen	167	0.896	0.957	63561.7	836	No	No

	Initial moisture content	167	0.896	0.957	63561.7	836	No	No
	Bulking agent type	163	0.642	0.725	60258.1	816	No	No
NH ₃	Feedstock type	272	0.896	0.944	1503157.4	1361	No	No
	Pyrolysis temperature	225	0.884	0.950	1423359.3	1126	No	No
	Size	175	0.642	0.732	1288925.6	876	No	No
	Carbon to nitrogen	245	0.833	0.895	1439220.4	1376	No	No
	Electricity conductivity	182	0.928	0.941	147460.5	911	No	No
	Surface area	138	0.826	0.858	873335.5	691	No	No
	pH	251	0.941	0.919	1286439.7	1256	No	No
	Pore volume	103	0.501	0.583	47206.7	516	No	No
	Amendment rate	269	0.862	0.917	1496214.7	1361	No	No
	waste type	272	0.896	0.944	1503157.4	1361	No	No
	Initial pH	272	0.896	0.944	1503157.4	1361	No	No
	Initial carbon to nitrogen	272	0.896	0.944	1503157.4	1361	No	No
	Initial moisture content	263	0.885	0.913	288712.2	1316	No	No
	Bulking agent type	268	0.834	0.886	1493099.0	1341	No	No
N ₂ O	Feedstock type	182	0.165	0.228	110333.2	911	No	No
	Pyrolysis temperature	147	0.333	0.396	77178.4	736	No	No
	Size	125	0.119	0.161	86722.1	626	Yes	No
	Carbon to nitrogen	158	0.214	0.276	69077.3	791	No	No
	Electricity conductivity	114	0.081	0.140	64782.2	571	No	No
	Surface area	101	0.493	0.548	44711.4	506	No	No
	pH	162	0.013	0.033	97087.0	811	Yes	No
	Pore volume	66	0.384	0.459	37682.8	331	No	No
	Amendment rate	182	0.165	0.228	110333.2	911	No	No
	waste type	182	0.165	0.228	110333.2	911	No	No
	Initial pH	179	0.178	0.240	108352.9	896	No	No
	Initial carbon to nitrogen	182	0.165	0.228	110333.2	911	No	No
	Initial moisture content	173	0.150	0.210	209023.0	866	No	No
	Bulking agent type	170	0.503	0.531	114005.5	851	No	No