

**Supplementary Table 1. Soil and biochar characteristics.**

Characteristic <sup>†</sup>	Soil	Biochar <sup>‡</sup>					
		PL300	PL400	PL500	BS300	BS400	BS500
Yield (%)		67.3 ± 0.1	60.4 ± 0.1	48.6 ± 0.1	91.9 ± 0.1	89.8 ± 0.1	87.7 ± 0.1
pH	4.9 ± 0.1	8.4 ± 0.1	9.7 ± 0.1	10.3 ± 0.1	5.4 ± 0.1	5.2 ± 0.1	5.2 ± 0.1
Moisture (%)		1.0 ± 0.7	1.2 ± 1.2	1.2 ± 1.2	0.1 ± 0.1	0.1 ± 0.1	0.2 ± 0.7
Volatile matter (%)		23.2 ± 0.7	13.4 ± 0.1	7.2 ± 0.3	5.7 ± 0.5	4.3 ± 0.1	3.4 ± 0.1
Ash (%)		58.7 ± 0.8	62.1 ± 0.5	66.5 ± 4.2	91.1 ± 0.8	92.7 ± 0.5	93.4 ± 0.1
Fixed C (%)		17.1 ± 2.1	23.3 ± 0.4	25.1 ± 0.8	3.1 ± 0.3	2.9 ± 0.5	3.0 ± 0.9
CEC (cmol kg <sup>-1</sup> )	16.1 ± 0.1	46.4 ± 0.5	55.8 ± 0.1	54.1 ± 0.7	34.5 ± 0.8	38.3 ± 0.6	36.6 ± 0.5
BET (m <sup>2</sup> g <sup>-1</sup> )		7.73	29.94	33.64	21.63	24.61	25.32
C%		32.3 ± 4.4	26.6 ± 1.1	19.1 ± 3.0	4.4 ± 1.6	3.1 ± 0.4	2.7 ± 0.1
H%		2.91 ± 0.35	2.18 ± 0.28	0.98 ± 0.12	0.80 ± 0.23	0.67 ± 0.28	0.37 ± 0.17
N%		2.93 ± 0.27	2.40 ± 0.06	1.62 ± 0.24	2.40 ± 0.06	1.96 ± 0.61	1.66 ± 0.32
P (g kg <sup>-1</sup> )		19.99 ± 0.65	23.40 ± 0.28	25.18 ± 0.57	10.56 ± 0.44	11.18 ± 0.18	11.39 ± 0.12
Pb (mg kg <sup>-1</sup> )	3192 ± 45	5 ± 1	6 ± 1	6 ± 1	27 ± 1	29 ± 1	29 ± 1
Cd (mg kg <sup>-1</sup> )	<0.10	<0.10	<0.10	<0.10	0.49 ± 0.00	0.50 ± 0.01	0.52 ± 0.01
Sb (mg kg <sup>-1</sup> )	0.03 ± 0.02	0.11 ± 0.02	0.15 ± 0.03	0.21 ± 0.01	0.36 ± 0.01	0.39 ± 0.01	0.41 ± 0.01
As (mg kg <sup>-1</sup> )	<0.10	6.0 ± 0.4	6.6 ± 0.4	8.0 ± 1.8	3.4 ± 0.1	3.8 ± 0.1	4.0 ± 0.1
Zn (mg kg <sup>-1</sup> )	13 ± 2	473 ± 11	512 ± 6	589 ± 20	356 ± 4	359 ± 4	371 ± 8
Cu (mg kg <sup>-1</sup> )	36 ± 4	118 ± 11	133 ± 8	144 ± 8	165 ± 11	167 ± 20	169 ± 10
Fe (g kg <sup>-1</sup> )	45.1 ± 8.5	39.4 ± 1.7	48.1 ± 0.5	54.8 ± 3.0	43.0 ± 0.4	43.4 ± 1.5	46.7 ± 1.0
Ca (g kg <sup>-1</sup> )	7.3 ± 0.6	5.2 ± 0.2	5.4 ± 0.4	6.2 ± 0.1	4.5 ± 0.1	5.1 ± 0.1	5.6 ± 0.3
K (g kg <sup>-1</sup> )	19.3 ± 2.8	15.3 ± 0.1	16.4 ± 0.1	18.1 ± 0.2	1.3 ± 0.1	1.3 ± 0.1	1.7 ± 0.1
Mg (g kg <sup>-1</sup> )	3.0 ± 0.7	7.8 ± 0.3	9.7 ± 0.2	10.3 ± 0.2	2.9 ± 0.1	3.0 ± 0.1	3.1 ± 0.1
Na (g kg <sup>-1</sup> )		7.2 ± 0.1	7.7 ± 0.1	8.9 ± 0.1	1.9 ± 0.1	2.0 ± 0.1	2.2 ± 0.1

<sup>†</sup> CEC, cation exchange capacity; BET, Brunauer–Emmett–Teller.

<sup>‡</sup> Biochars are coded according to the material added to the soil (poultry litter [PL] and biosolids [BS]), followed by the temperature of preparation (300, 400, or 500°C).