

Table S1 Soil electrochemical properties under biochar treatment for 365 days

Treatment	SCN (cmol(c) kg ⁻¹)	SSA (m ² g ⁻¹)	σ_0 (c m ⁻²)
CK	18.90±0.88d	41.75±2.34e	0.44±0.04a
M1	21.23±0.49c	51.05±3.83d	0.40±0.02ab
M3	22.26±1.41c	54.72±6.84d	0.39±0.03b
M5	24.74±0.70b	61.71±4.45c	0.39±0.02b
M10	28.09±1.16a	70.81±3.98ab	0.38±0.01b
W1	21.81±0.83c	52.29±0.65d	0.40±0.02ab
W3	22.43±0.39c	55.30±2.30d	0.39±0.01b
W5	26.12±0.65b	64.88±3.73bc	0.39±0.03b
W10	29.34±0.76a	72.96±1.79a	0.39±0.01b

Note: M1, M3, M5, M10, add 1%, 3%, 5%, 10% maize straw biochar; W1, W3, W5, W10, add 1%, 3%, 5%, 10% wheat straw biochar; CEC: cation exchange capacity, SSA: specific surface area, σ_0 : surface charge density; Values are means ± stand deviation (n = 3).

Figure S1 Effect of biochar addition on soil active organic carbon fractions after 365 days. M1, M3, M5, M10, add 1%, 3%, 5%, 10% maize straw biochar; W1, W3, W5, W10, add 1%, 3%, 5%, 10% wheat straw biochar.

Figure S2 Soil aggregate breaking strength ($< 5 \mu\text{m}$, $< 10 \mu\text{m}$) at different electrolyte concentrations under biochar addition after 365 days of incubation. M1, M3, M5, M10, add 1%, 3%, 5%, 10% maize straw biochar; W1, W3, W5, W10, add 1%, 3%, 5%, 10% wheat straw biochar.

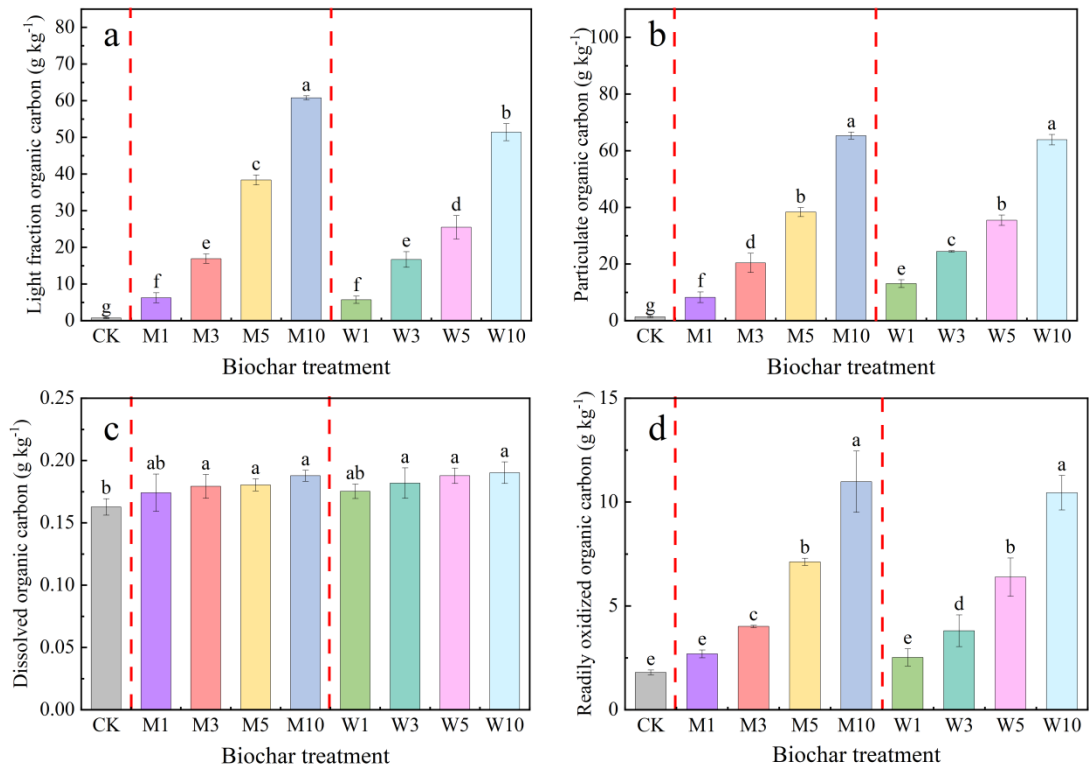


Fig. S1. Effect of biochar addition on soil active organic carbon fractions after 365 days.

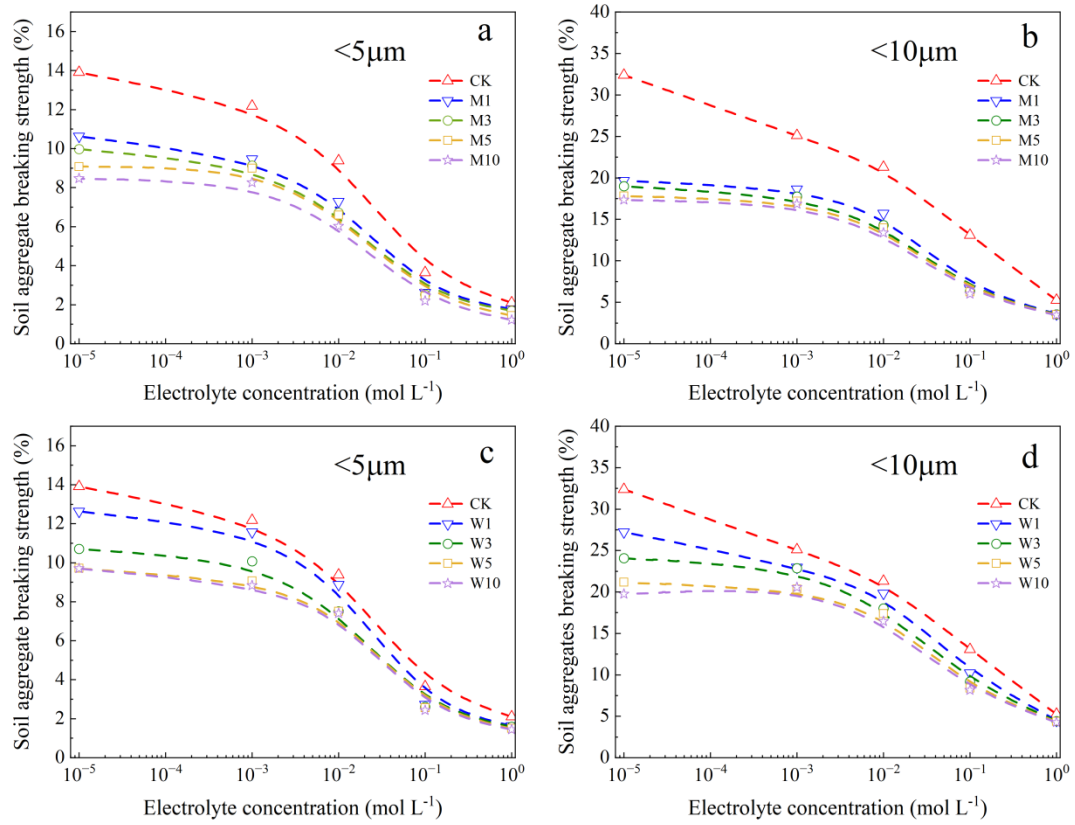


Fig. S2. Soil aggregate breaking strength (< 5 μm, < 10 μm) at different electrolyte concentrations under biochar addition after 365 days of incubation.