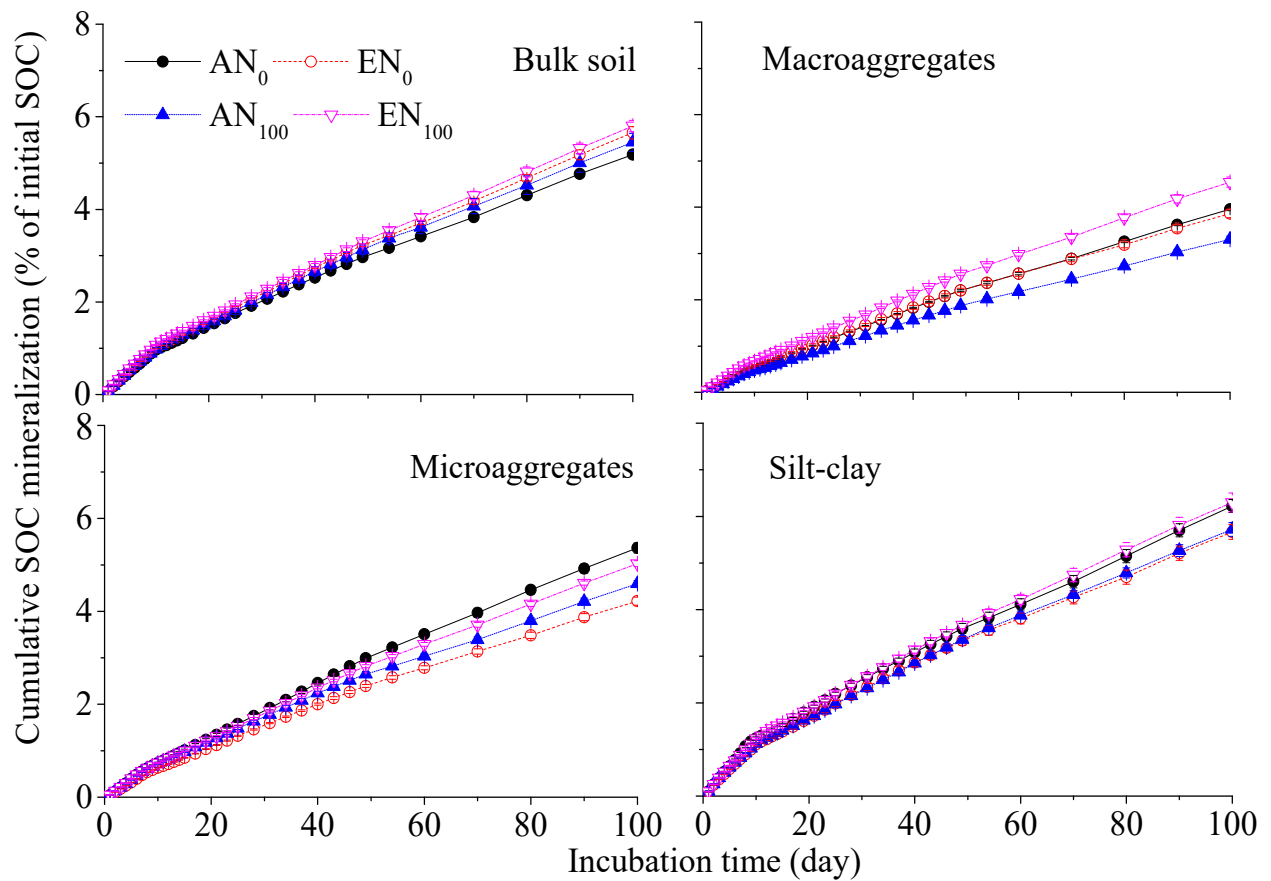


Supplementary materials

Online Resource 1. Cumulative soil organic carbon (SOC) mineralisation (% of initial aggregate SOC) of bulk soil and aggregate fractions after rice growing under ambient CO₂ concentration without N fertilisation (AN₀), elevated CO₂ concentration without N fertilisation (EN₀), ambient CO₂ concentration with N fertilisation of 100 mg N kg⁻¹ soil (AN₁₀₀), and elevated CO₂ concentration with N fertilisation of 100 mg N kg⁻¹ soil (EN₁₀₀) treatments. All data are means ± SE (*n* = 4).



Online Resource 2. Analysis of variance for the effects of elevated CO₂ concentration and N fertilisation on initial rice rhizodeposit-¹³C contents in bulk soil and aggregate fractions.

Effect ^a	Bulk soil	Macroaggregates	Microaggregates	Silt-clay
eCO ₂	<0.001	0.001	<0.001	0.001
N fertilisation	<0.001	0.214	<0.001	0.321
eCO ₂ *N fertilisation	<0.001	0.138	0.045	0.146

^a *: interactive effect.

Online Resource 3. Initial soil organic carbon (SOC) content (g kg^{-1}) of bulk soil and aggregate fractions in AN₀, EN₀, AN₁₀₀, EN₁₀₀ treatments

Treatment	Bulk soil	Macroaggregates	Microaggregates	Silt-clay
AN ₀	20.0	35.5	34.4	16.3
EN ₀	18.3	36.7	36.4	15.5
AN ₁₀₀	18.1	42.6	32.3	15.7
EN ₁₀₀	17.3	32.7	33.6	16.1

Online Resource 4. ^{13}C -MBC ($\mu\text{g kg}^{-1}$) and microbial biomass carbon (MBC) content (mg kg^{-1} aggregate) of aggregate fractions at 5, 30, and 100 day of incubation in different treatments. All data are means \pm SE ($n = 3$).

Treatment	Soil particle	^{13}C -MBC ($\mu\text{g kg}^{-1}$)			MBC (mg kg^{-1} aggregate)		
		5d	30d	100d	5d	30d	100d
AN ₀	Bulk soil	1660.4	890.7	860.9	2012.5	1184.8	1428.3
	Macroaggregates	833.5	369.2	472.3	1117.7	410.3	676.5
	Microaggregates	1483.5	2800.9	2746.7	1822.2	2418.7	2854.7
	Silt-clay	365.6	610.4	802.0	584.4	974.3	1215.1
EN ₀	Bulk soil	1426.2	955.2	1020.9	1406.0	1099.2	1468.6
	Macroaggregates	655.0	635.7	785.7	972.7	582.5	788.1
	Microaggregates	2517.6	1366.4	1620.6	2642.7	1793.3	2704.6
	Silt-clay	807.1	513.2	838.0	1113.8	898.1	1260.3
AN ₁₀₀	Bulk soil	853.7	1283.4	1369.2	1083.8	1101.3	1355.4
	Macroaggregates	831.8	1168.3	1239.9	861.2	758.8	992.4
	Microaggregates	1711.8	3289.4	3889.9	2327.3	2077.6	3005.0
	Silt-clay	629.0	903.8	1133.2	1183.0	889.8	1167.3
EN ₁₀₀	Bulk soil	992.4	973.2	1250.7	1242.1	1073.7	1602.3
	Macroaggregates	1432.6	787.1	1009.8	1108.5	427.0	741.8
	Microaggregates	2023.4	2040.2	2688.9	1392.0	1741.2	2658.5
	Silt-clay	1908.3	892.2	1060.7	1661.9	1079.9	1389.5

Online Resource 5. Analysis of variance for the effect of elevated CO₂ concentration and N fertilisation on ¹³C-DOC, ¹³C-MBC, and ¹³C-SOC contents (% of rhizodeposit-¹³C) of different aggregates of the incubation period.

Da y	Effect	Bulk soil			Macroaggregates			Microaggregates			Silt-clay		
		¹³ C- DOC ^a	¹³ C- MBC	¹³ C- SOC	¹³ C- DOC	¹³ C- MBC	¹³ C- SOC	¹³ C- DOC	¹³ C- MBC	¹³ C- SOC	¹³ C- DOC	¹³ C- MBC	¹³ C- SOC
5	eCO ₂	0.161	0.002	0.002	0.019	0.233	0.199	0.077	0.029	0.022	0.001	0.042	0.014
	N fertilisation	0.223	< 0.001	< 0.001	0.010	0.287	0.187	0.048	0.425	0.887	< 0.001	0.009	0.005
	eCO ₂ *N fertilisation	0.517	0.008	0.009	0.006	0.002	0.002	0.013	0.001	0.002	0.001	0.237	0.290
31	eCO ₂	0.764	0.027	0.025	0.227	0.319	0.346	0.139	0.001	0.001	0.087	0.012	0.129
	N fertilisation	0.730	0.406	0.923	0.946	0.035	0.001	0.838	0.331	0.187	0.227	0.351	0.514
	eCO ₂ *N fertilisation	0.840	0.779	0.889	0.268	0.234	0.241	0.936	0.162	0.156	0.927	0.267	0.419
10	eCO ₂	0.688	0.004	0.002	0.052	0.717	0.232	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
0	N fertilisation	0.811	0.029	< 0.001	0.176	0.851	0.002	< 0.001	< 0.001	< 0.001	0.215	0.224	0.349
	eCO ₂ *N fertilisation	0.154	0.512	0.982	0.401	0.786	0.124	0.006	0.070	0.153	0.002	0.001	0.001

^aDOC, dissolved organic carbon; MBC, microbial biomass carbon; SOC, soil organic carbon.