

Supplementary Table 3. The effect comparison of each factor on seasonal CH₄ emissions, water use, production cost and seasonal yield-scaled CH₄ emissions, water use, and production cost.

Treatment	CH ₄ emissions (kg ha ⁻¹)	Total water use (m ³ ha ⁻¹)	Production costs (USD ha ⁻¹)	Rice grain yield (Mg ha ⁻¹)	Yield-scaled CH ₄ emission (kg CH ₄ Mg ⁻¹)	Yield-scaled water use (m ³ H ₂ O Mg ⁻¹)	Yield-scaled production cost (USD Mg ⁻¹)
Biochar effect (CT is average of CTC and CTA; BF is average of BFC and BFA)							
CT	244±5.94 a	11,700±686 A	738±5.78 b	6.48±0.03 B	37.7±2.57 a	1,800±96.0 A	114±0.24 b
BF	214±5.24 b	11,600±17.2 A	900±4.01 a	6.72±0.01 A	31.9±1.57 a	1,730±4.16 A	134±0.77 a
<i>p</i> value	< 0.05	0.87	< 0.05	< 0.05	0.14	0.46	< 0.05
Compost effect (BI is average of BIC and BIA; BC is average of BCC and BCA)							
BI	145±3.11 b	12,200±464 A	726±5.61 b	5.19±0.01 B	28.0±1.72 a	2,350±89.9 A	140±1.27 b
BC	172±7.12 a	12,100±712 A	1,066±6.84 a	5.78±0.02 A	29.8±0.63 a	2,090±130 A	185±1.86 a
<i>p</i> value	< 0.05	0.90	< 0.05	< 0.05	0.37	0.17	< 0.05
Chemical fertilizer effect (BI is average of BIC and BIA; BF is average of BFC and BFA)							
BI	145±3.11 b	12,200±464 A	726±5.61 b	5.19±0.01 B	28.0±1.72 a	2,350±89.9 A	185±1.86 a
BF	214±5.24 a	11,600±17.2 A	900±4.01 a	6.72±0.01 A	31.9±1.57 a	1,730±4.16 A	134±0.77 b
<i>p</i> value	< 0.05	0.32	< 0.05	< 0.05	0.15	0.06	< 0.05
Water management effect (Conventional is average of all treatments under conventional system; AWD is average of all treatments under AWD system)							
Conventional	213±5.65 a	12,300±244 A	861±3.78 a	6.11±0.02 A	34.6±0.69 a	2,050±38.1 A	142±0.69 a
AWD	173±6.75 b	11,500±232 B	855±1.73 a	5.97±0.02 A	29.1±0.35 b	1,940±32.1 A	144±1.11 a
<i>p</i> value	< 0.05	< 0.05	0.22	0.10	< 0.05	0.09	0.14

Means \pm SE with different letters indicate significant difference at the 5% level. p values < 0.05 indicates the significant difference by Independent Samples T-test.