

Effects of nitrogen deposition on soil dissolved organic carbon and nitrogen in Moso bamboo plantations strongly depend on management practices

Zhaofeng Lei ^{1,†}, Huanfa Sun ^{1,†}, Quan Li ¹, Junbo Zhang ¹, Xinzhang Song ^{1,2,*}

¹ State Key Laboratory of Subtropical Silviculture, Zhejiang A&F University, Lin'an 311300, China; 1013134366@qq.com(Z.L.), 1285153021@qq.com(H.S.), 842153789@qq.com(Q.L.), 1144151882@qq.com(J.Z.)

² Tianmu Mountain Forest Ecosystem Research Station, Lin'an 311300, China; songxinzhang@gmail.com

* Corresponding author: songxinzhang@gmail.com; Tel.: (86) 571-63741816

† These authors contributed equally to this work and should be considered co-first authors.

Table S1. The initial stand and soil characteristics of the study sites in the Moso bamboo forest (mean±SD, n=4)

Management type	Stand density (trees ha ⁻¹)	DBH (cm)	SBD (g cm ⁻³)	SOC (mg g ⁻¹)	TN (mg g ⁻¹)	AN (mg g ⁻¹)	TP (mg g ⁻¹)	AP (mg g ⁻¹)	Soil pH
CM	3106±386a	10.08±0.38a	1.06±0.07a	27.8±0.3a	0.9±0.03b	0.06±0.001b	0.4±0.01a	0.002±0.000a	4.46±0.01a
IM	3362±309a	10.16±0.13a	0.97±0.07a	23.7±0.2b	1.1±0.04a	0.09±0.002a	0.5±0.01a	0.002±0.000a	4.53±0.02a

CM conventional management, IM intensive management, DBH diameter at breast height, SBD soil bulk density, SOC soil organic C, TN soil total N, AN available nitrogen, TP soil total P, AP available phosphorus. Different lowercase letters in the same column indicate significant differences (P<0.05).

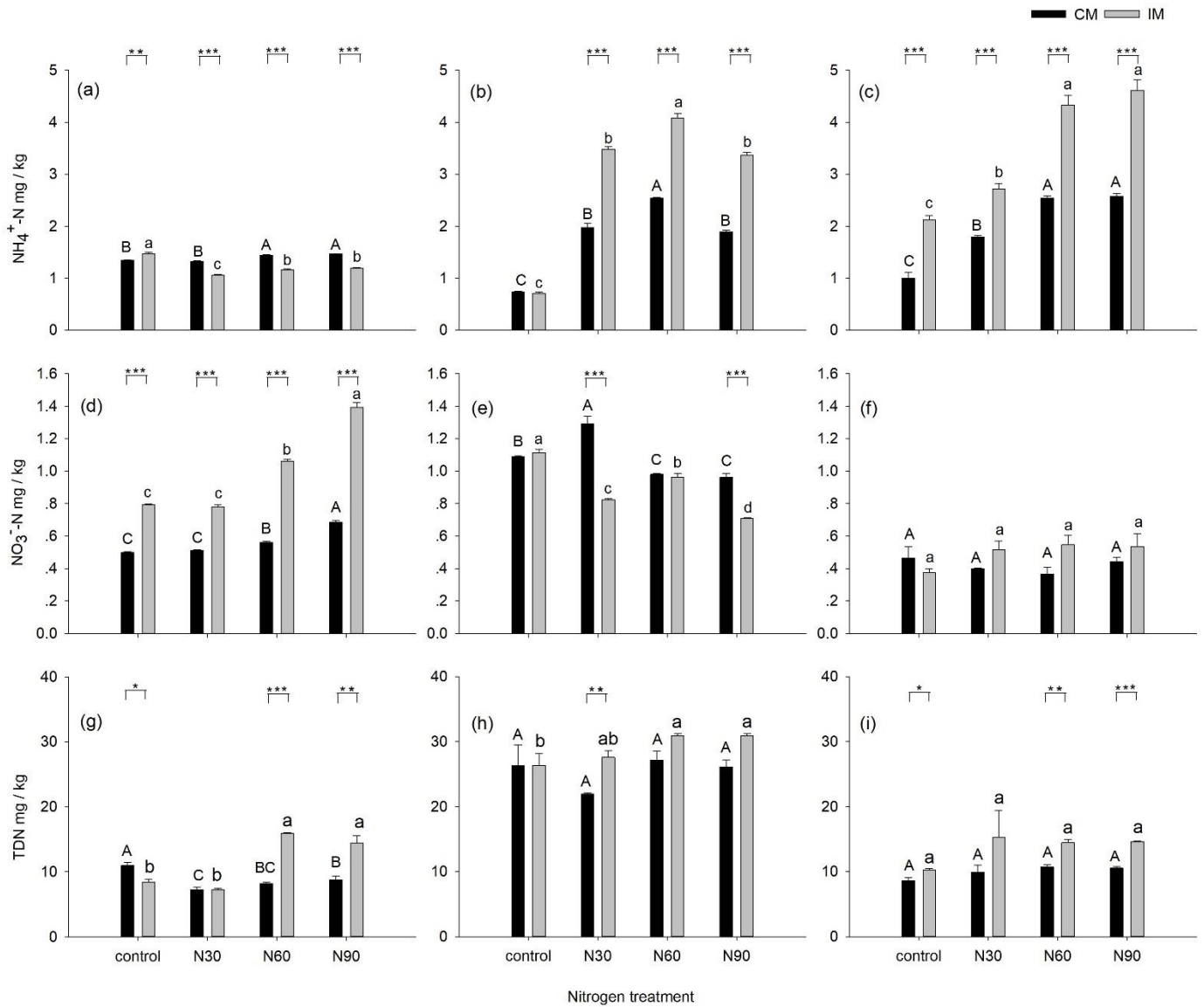


Figure S1. Ammonium nitrogen ($\text{NH}_4^+\text{-N}$), Nitrate nitrogen ($\text{NO}_3^-\text{-N}$) and Total dissolved nitrogen (TDN) in surface soil (0–20 cm) in different seasons ((a), (d), (g): April; (b), (e), (h): July; (c), (f), (i): December) under different management practices (CM: conventional management; IM: intensive management) and four nitrogen addition treatments (N30: 30 kg N ha⁻¹ yr⁻¹; N60: 60 kg N ha⁻¹ yr⁻¹; N90: 90 kg N ha⁻¹ yr⁻¹ and Control: N-free). Vertical bars indicate the standard error of three replicates. Different uppercase letters indicate significant differences among N addition rates under CM treatments ($P < 0.05$). Different lowercase letters indicate significant differences among N addition rates under IM treatments ($P < 0.05$). Asterisks indicate significant differences between CM and IM at the same N addition rate (* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$).