



Figure S1. Illustrations of the studied subtropical Chinese fir (*Cunninghamia lanceolata*) plantation: (a) location of the study areas within China and (b) Jiangxi Province; (c) hemispherical photo of the canopy within the study area; and (d) layout of the study site on an aerial photo and a photo of the study site; (e) graphic illustration of the four treatments.

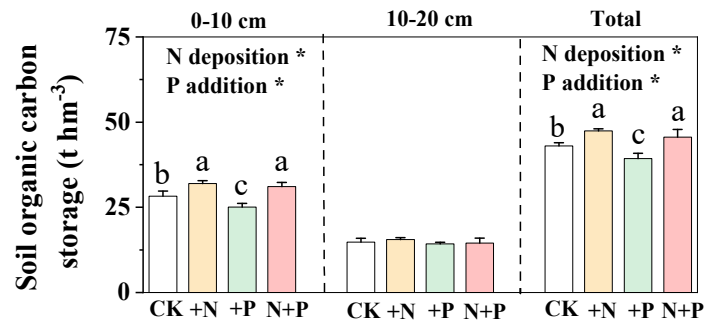


Figure S2. Soil organic carbon storage (mean \pm standard error) in response to N deposition and P addition. Different lowercase letters on the error bars indicate significant differences ($P < 0.05$) among four treatments: nitrogen deposition, +N, orange bars; phosphorus addition, +P, green bars; both N deposition and P addition, N+P, pink bars; and control, CK, white bars) within each soil layer. The two-way analysis of variance results are presented as an inset. * $P < 0.05$.

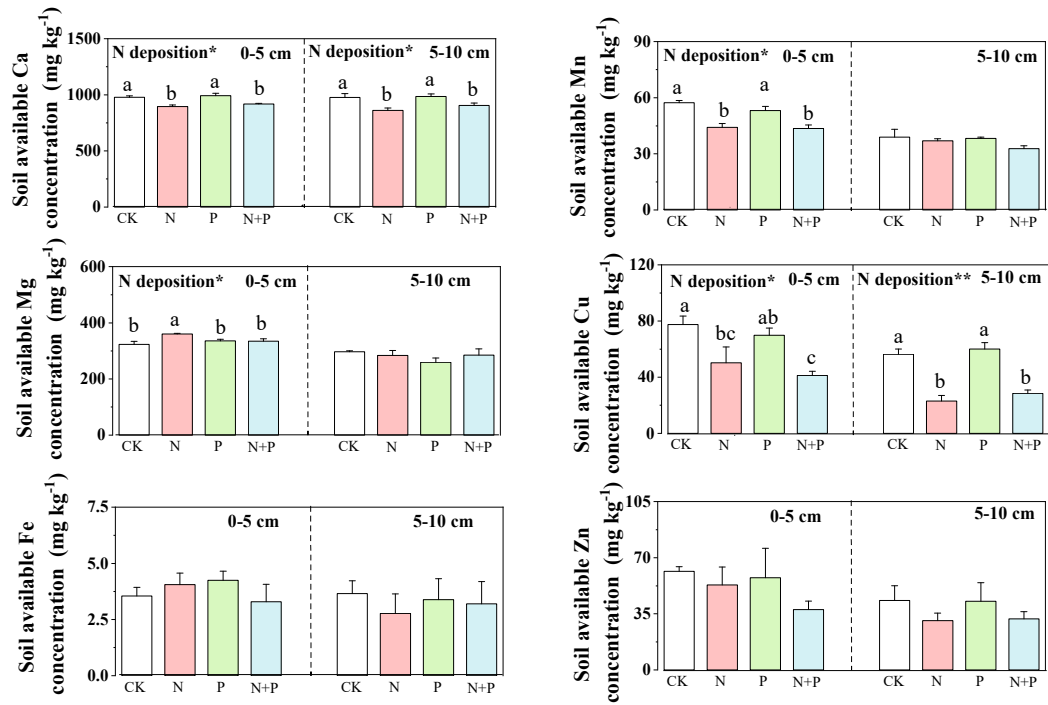


Figure S3. Soil available trace elements concentration in response to N deposition and P addition. Different lowercase letters on the error bars indicate significant differences ($P < 0.05$) among four treatments: nitrogen deposition, N, pink bars; phosphorus addition, P, green bars; both N deposition and P addition, N+P, blue bars; and control, CK, white bars within each soil layer. The two-way analysis of variance results are presented as an inset. * $P < 0.05$.

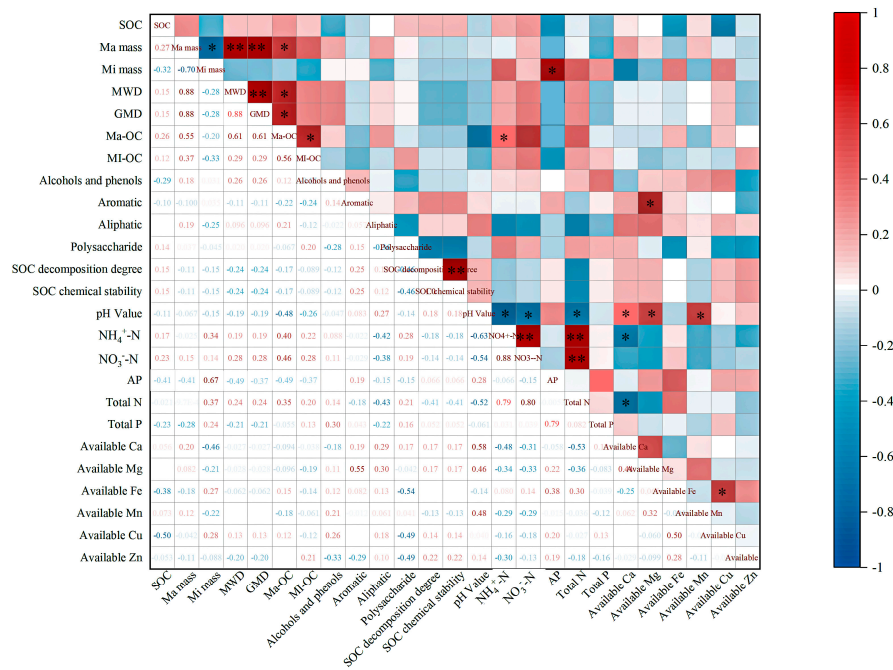


Figure S4. A matrix heatmap of Pearson's correlation among organic carbon content, chemical composition, stability of soil organic carbon, as well as soil physical and chemical properties of soil aggregates in the 10–20 cm layers. Note: MA mass= the proportion of macroaggregate mass; MI mass= the proportion of microaggregate mass; Ma-OC= macroaggregate organic carbon content; MI-OC= microaggregate organic carbon content; MWD= aggregate mean weight diameter; GMD= geometric mean diameter; AP= available soil phosphorus. The red block represents a positive correlation, the blue block represents a negative correlation, the darker the color, the stronger the correlation. The number at the bottom left represents the correlation coefficient. * $P < 0.05$ and ** $P < 0.01$.