

Supporting information to:

**Nitrogen, phosphorus distribution and relationship under different aged Chinese
fir plantations in Hunan, China**

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Supplementary Table S1. General characteristics of different aged Chinese fir plantations.

Stand Age (years)	Geographical Position	Altitude (m)	Trees Density (trees ha ⁻²)	Mean Height (m)	Mean DBH (cm)
10a	109°30'10"E 26°57'06"N	473	2125	6.3 ± 0.33	8.8 ± 0.51
20a	109°35'55"E 26°51'39"N	500	1650	11.8 ± 0.22	17.2 ± 0.25
30a	109°39'15"E 26°52'01"N	467	1250	14.8 ± 0.40	23.6 ± 0.29

DBH is diameter at the breast height. Data indicate mean ± SE (n = 9 in each stand).

Supplementary Table S2. Biomass allometric equation of different aged Chinese fir plantations.

Organ	Regression Equation	R^2
coarse roots	$W=0.0124DBH^{2.521}$	0.9608
stem	$W=0.0871DBH^{2.3002}$	0.9748
leaves	$W=0.0286DBH^{1.8901}$	0.9041

W is biomass (dry weight, kg); DBH is diameter at breast height (cm); R^2 is the correlation equations coefficient (n = 9 in each stand).

Supplementary Table S3. Correlations between soil (0-10 and 10-20 cm) and fine roots, leaves nutrients.

Soil Layer (cm)		Fine roots N	Fine Roots P	Leaves N	Leaves P
0-10	N	$R^2= 0.2935$	$R^2= 0.0120$	$R^2= 0.0429$	$R^2= 0.1150$
		$P= 0.0021^{**}$	$P= 0.2622$	$P= 0.1537$	$P= 0.4675$
	P	$R^2= 0.0229$	$R^2= 0.0708$	$R^2= 0.0528$	$R^2= -0.0396$
		$P= 0.2162$	$P= 0.0965$	$P= 0.1301$	$P= 0.9925$
10-20	N	$R^2= 0.3680$	$R^2= -0.0156$	$R^2= -0.0318$	$R^2= 0.0936$
		$P= 0.0005^{***}$	$P= 0.4452$	$P= 0.6599$	$P= 0.0664$
	P	$R^2= 0.1264$	$R^2= -0.0396$	$R^2= -0.0399$	$P= -0.0069$
		$P= 0.0387^*$	$P= 0.9225$	$P= 0.9605$	$P= 0.3734$

Date for correlation analysis were the values of nutrients concentrations (g kg^{-1}) soil (0-10 and 10-20 cm) and fine roots, leaves ($n = 27$). The correlation coefficient (R^2) and P values of the statistics were shown.