

Supplementary materials

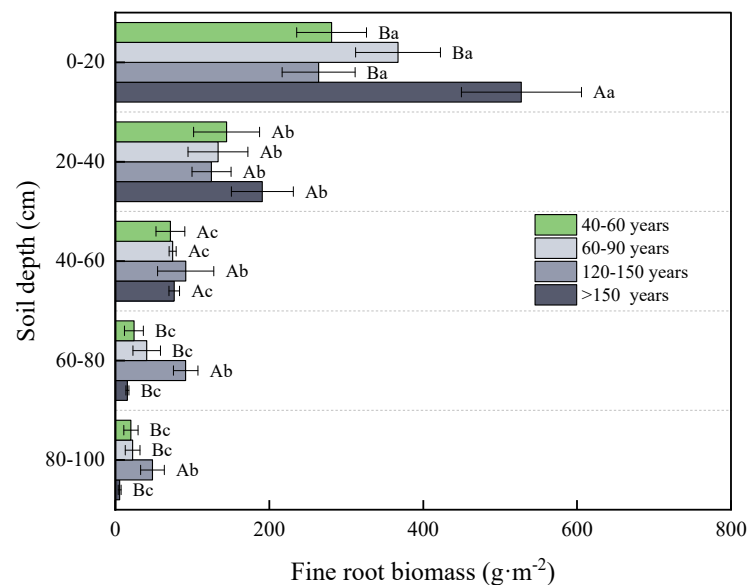


Figure S1. Fine root biomass and aboveground biomass of *Q. aliena* of different ages. Capital letters indicate significant different ages of *Q. aliena* in the same soil depth, and lowercase letters indicate significant difference for same age of *Q. aliena* in different soil depth ($p < 0.05$).

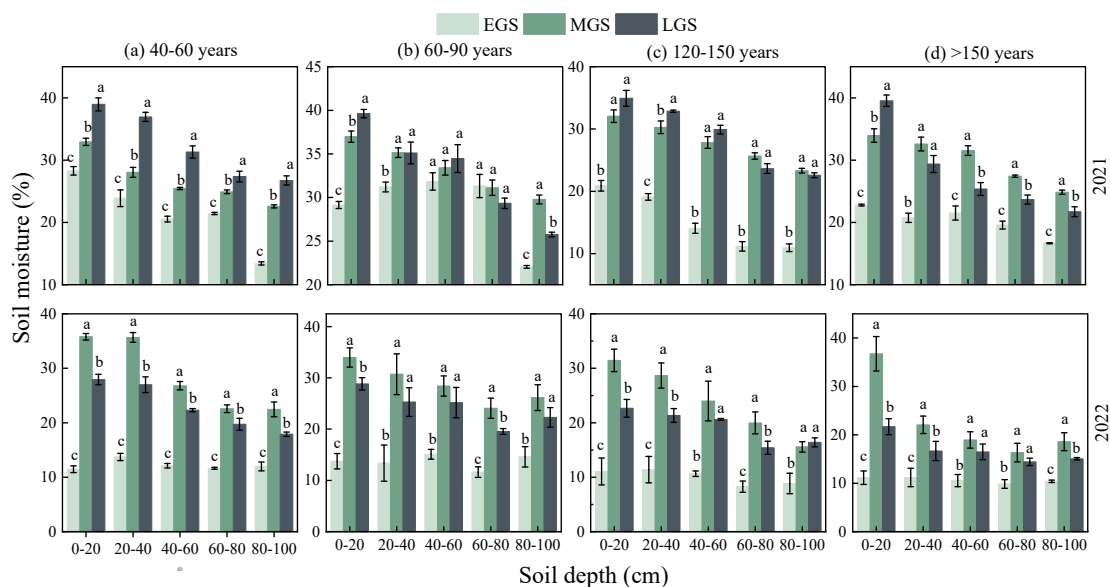


Figure S2. Vertical profile (0–100 cm) of soil moisture (%) of *Q. aliena* at different stand ages. Error bars represent one standard deviation ($n = 3$). Lowercase letters indicate significant differences in soil moisture of the same soil depth at different growth stage ($p < 0.05$).

Table S1. Soil properties and texture in *Q. aliena* of different ages.

	Layers (cm)	40–60 Years	60–90 Years	120–150 Years	>150 Years
Bulk density (g·m ⁻³)	0–20	1.14 ± 0.05 a	1.07 ± 0.01 a	1.11 ± 0.04 a	1.00 ± 0.02 b
	20–40	1.20 ± 0.03 b	1.28 ± 0.04 a	1.28 ± 0.02 a	1.18 ± 0.01 b
	40–60	1.61 ± 0.03 a	1.61 ± 0.02 a	1.33 ± 0.03 c	1.51 ± 0.03 b
	60–80	1.72 ± 0.01 a	1.68 ± 0.04 a	1.46 ± 0.03 c	1.54 ± 0.04 b
	80–100	1.73 ± 0.03 a	1.78 ± 0.03 a	1.63 ± 0.02 b	1.60 ± 0.01 b
Total porosity (%)	0–20	48.11 ± 1.78 bc	53.01 ± 1.62 a	47.22 ± 2.03 c	51.44 ± 1.68 ab
	20–40	48.29 ± 0.97 a	45.66 ± 1.79 a	40.72 ± 1.52 b	47.33 ± 1.94 a
	40–60	40.58 ± 1.06 a	35.76 ± 1.13 b	41.90 ± 2.64 a	41.05 ± 2.45 a
	60–80	33.44 ± 0.89 c	34.7 ± 0.49 c	39.35 ± 1.60 a	36.97 ± 1.27 b

	Layers (cm)	40–60 Years	60–90 Years	120–150 Years	>150 Years
	80–100	32.2 ± 0.52 b	30.1 ± 1.58 c	34.39 ± 0.39 a	35.30 ± 0.99 a
Field capacity (%)	0–20	48.08 ± 1.71 c	55.55 ± 1.16 a	41.94 ± 1.06 d	51.79 ± 1.75 b
	20–40	46.34 ± 2.39 a	38.82 ± 1.23 b	30.73 ± 0.92 c	40.21 ± 2.02 b
	40–60	27.09 ± 0.82 b	23.02 ± 1.31 c	31.92 ± 2.49 a	27.40 ± 1.16 b
	60–80	20.40 ± 0.97 c	21.89 ± 0.93 bc	29.22 ± 1.65 a	23.38 ± 0.49 b
	80–100	19.47 ± 0.94 a	17.02 ± 0.92 a	24.53 ± 1.57 b	24.29 ± 2.18 b
Clay (%)	0–20	1.76 ± 0.96 a	0.54 ± 0.25 a	0.92 ± 0.10 a	1.83 ± 0.45 a
	20–40	1.95 ± 0.44 ab	1.07 ± 0.23 bc	2.37 ± 0.96 a	0.30 ± 0.10 c
	40–60	1.83 ± 0.86 a	0.58 ± 0.11 b	0.99 ± 0.10 b	0.00 ± 0.00 b
	60–80	1.12 ± 0.08 a	0.30 ± 0.11 c	0.63 ± 0.32 b	0.00 ± 0.00 c
	80–100	0.00 ± 0.00 b	0.14 ± 0.07 b	0.94 ± 0.55 a	0.00 ± 0.00 b
Silt (%)	0–20	82.91 ± 2.26 a	41.21 ± 3.52 b	49.89 ± 18.64 b	84.93 ± 2.15 a
	20–40	85.66 ± 2.40 a	78.48 ± 5.70 a	79.19 ± 2.39 a	59.36 ± 11.08 b
	40–60	83.70 ± 2.11 a	70.06 ± 3.04 ab	61.85 ± 17.46 b	3.81 ± 1.01 c
	60–80	75.83 ± 0.99 a	51.33 ± 11.02 b	35.62 ± 8.26 c	12.36 ± 2.05 d
	80–100	25.08 ± 2.75 b	40.34 ± 7.56 a	47.01 ± 8.43 a	0.00 ± 0.00 c
Sand (%)	0–20	15.33 ± 3.20 b	58.25 ± 3.50 a	49.19 ± 18.74 a	13.24 ± 1.86 b
	20–40	12.39 ± 2.12 b	20.46 ± 5.82 b	18.44 ± 3.23 b	40.34 ± 11.85 a
	40–60	14.47 ± 1.33 c	29.35 ± 3.15 bc	37.16 ± 17.44 b	96.19 ± 1.01 a
	60–80	23.06 ± 0.91 d	48.37 ± 11.31 c	63.75 ± 8.57 b	87.64 ± 2.05 a
	80–100	74.92 ± 2.75 b	59.52 ± 7.63 c	52.06 ± 8.98 c	100.00 ± 0.00 a

Note: Means ± standard deviations are shown, and different letters shown in the same row denote significant differences between the different forest age at $p < 0.05$.