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Rubber plant root properties induce contrasting soil aggregate stability through cohesive force and reduced land degradation risk in southern China

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Table S1. Summary of ANOVA results of parameters used in Figure 1.

Soil Depth (cm)	Parameters	*SS*	*df*	*MS*	*F-Statistics*	*P-value*
0 - 20	RD	0.389	4	0.097	8.535	0.003
	RLD	1.440	4	0.360	6.782	0.007
	RSD	0.136	4	0.034	4.901	0.019
	RMD	0.352	4	0.088	9.233	0.002
20 - 40	RD	0.450	4	0.113	24.833	0.000
	RLD	1.334	4	0.333	11.173	0.001
	RSD	0.193	4	0.048	30.592	0.000
	RMD	0.389	4	0.097	8.583	0.003

Note: RD: Root diameter, RLD: Root length density, RSD: Root surface area density, RMD: Root mass density

Table S2. Summary of ANOVA results of parameters used in Figure 2.

Soil Depth (cm)	Parameters	*SS*	*df*	*MS*	*F-Statistics*	*P-value*
0 - 20	VFRL	33.332	4	8.333	0.713	0.101
	FRL	188.254	4	47.063	2.345	0.025
	MRL	215.772	4	53.943	9.74	0.002
	CRL	293.793	4	73.448	3.796	0.040
20 - 40	VFRL	9.294	4	2.324	1.377	0.009
	FRL	303.464	4	75.866	9.465	0.002
	MRL	96.967	4	24.242	7.051	0.006
	CRL	633.162	4	158.291	8.105	0.004

Note: VFRL: very fine root length diameter (< 0.2mm), FRL: fine root length diameter (0.2 ~ 0.5mm), MRL: medium root length diameter (0.5~1mm), CRL: coarse root length diameter (>1mm)

Table S3. Summary of ANOVA results of parameters used in Figure 3.

	Parameters	*SS*	*df*	*MS*	*F-Statistics*	*P-value*
Cellulose	RD < 0.5 mm	802.068	4	200.517	57.400	0.000
	RD 0.5 - 1 mm	686.149	4	171.537	36.207	0.000
	RD > 1 mm	58.057	4	14.514	0.881	0.509
Lignin	RD < 0.5 mm	281.724	4	70.431	16.497	0
	RD 0.5 - 1 mm	260.59	4	65.148	11.326	0.001
	RD > 1 mm	643.304	4	160.826	19.710	0.000

Note: RD: Root length diameter class

Table S4. Summary of ANOVA results of parameters used in Figure 4

Soil Depth (cm)	Parameters	*SS*	*df*	*MS*	*F-Statistics*	*P-value*
0 - 20	SOM	245.505	5	49.101	11.124	0.000
	RFCF	2448.169	5	489.634	72.347	0.000
	RSCCF	2235.126	5	447.025	46.549	0.000
20 -40	SOM	230.326	5	46.065	24.158	0.000
	RFCF	1537.810	5	307.562	13.628	0.000
	RSCCF	802.750	5	160.550	20.872	0.000

Note: SOM: Soil organic matter, RFCF: Root free cohesive force, RSCCF: Root soil composite cohesive force.

Table S5. Summary of ANOVA results of parameters used in Figure 5

Soil Depth (cm)	Parameters	*SS*	*df*	*MS*	*F-Statistics*	*P-value*
0 - 20	LMA	293.659	5	58.732	2.273	0.013
	MA	297.249	5	59.45	2.983	0.056
	MIA	385.09	5	77.018	4.946	0.011
	SMA	314.118	5	62.824	0.960	0.479
	GMD	0.264	5	0.053	2.351	0.105
	MWD	0.552	5	0.110	3.349	0.040
20 -40	LMA	277.016	5	55.403	1.576	0.024
	MA	217.053	5	43.411	2.384	0.101
	MIA	72.87	5	14.574	0.762	0.594
	SMA	557.082	5	111.416	1.984	0.154
	GMD	0.251	5	0.050	1.509	0.259
	MWD	0.347	5	0.069	1.743	0.199

Note: LMA: large macroaggregates (> 2 mm); MA: macroaggregates (2–0.25 mm); MIA: microaggregates (0.25–0.053 mm); SMA: small microaggregates (< 0.053 mm), GMD: geometric mean weight diameter, MWD: mean weight diameter.