

**Table S4.** Root indicators treated with different PSB single-strains and composite strains in the soil test.

Time (days)	Treatments	Root length (cm)	Root surface area (cm <sup>2</sup> )	Root mean diameter (mm)	Root volume (cm <sup>3</sup> )	Root tips	Root forks	Root crossings
15	control	55.467±1.036e	3.76±0.14e	0.225±0.009	0.020±0.001e	194±27e	296±29e	84±18e
	A	107.643±6.975d	7.45±0.64d	0.220±0.005	0.041±0.005d	432±41cd	847±86cd	216±32cd
	D	167.750±1.962bc	11.47±0.25bc	0.219±0.010	0.063±0.005c	568±41bc	1202±68bc	303±18bc
	E	165.612±9.737bc	12.60±0.71ab	0.229±0.003	0.072±0.011bc	531±61c	1282±111b	291±50cd
	F	141.108±14.125cd	9.94±0.86c	0.225±0.004	0.060±0.002cd	493±66cd	1180±73bc	287±35cd
	AE	212.556±14.891a	14.14±0.72a	0.227±0.001	0.081±0.006ab	709±2ab	1657±144a	441±40a
	AF	160.472±8.400bc	11.40±0.63bc	0.225±0.003	0.065±0.004c	581±40bc	1235±142b	324±35bc
	ADF	133.878±10.911cd	9.51±0.82c	0.220±0.006	0.054±0.005cd	334±57de	779±13d	182±1de
	AEF	197.926±13.735ab	14.55±0.52a	0.233±0.006	0.085±0.001a	771±54a	1337±111ab	358±19ab
30	control	364.967±10.585e	27.21±1.02b	0.238±0.004b	0.154±0.013c	1331±8e	3018±183c	806±46d
	A	412.107±11.838bcde	33.14±0.93a	0.256±0.000ab	0.212±0.006ab	1470±114cde	3290±194bc	857±22cd
	D	422.687±12.233abcd	31.42±1.26ab	0.240±0.006b	0.169±0.008bc	1571±35bcde	3021±130c	967±42bcd
	E	435.001±7.926abc	34.01±1.39a	0.255±0.006ab	0.200±0.017ab	1768±41abc	4030±183ab	1182±96a
	F	377.679±19.195de	30.62±1.15ab	0.245±0.002ab	0.179±0.012bc	1645±68bcd	3608±169abc	922±61bcd
	AE	467.708±17.479a	33.77±0.62a	0.245±0.006ab	0.209±0.013ab	1802±77ab	4178±199a	1101±73ab
	AF	404.343±24.293bcde	33.20±1.80a	0.257±0.005ab	0.201±0.011ab	1524±87bcde	3721±231abc	895±81bcd
	ADF	395.428±27.684cde	30.16±2.21ab	0.244±0.002ab	0.183±0.014bc	1459±126de	2807±526c	867±28cd
	AEF	462.459±18.852ab	34.50±1.76a	0.258±0.010a	0.229±0.017a	1854±142a	4079±99ab	1033±48abc

Note: Different lower-case letters indicate significant differences among the treatments ( $p < 0.05$ ).