

**Supplementary Table:****Supplementary Table S1.** Statistics of 16S rRNA amplicon sequences in root-nodule samples of different groups.

Group	Sample	Raw CCS	Clean CCS	Denoised CCS	Non-chimeric CCS
MMDB	MM01	10870	10840	10702	10597
	MM02	10545	10514	10360	10246
	MM03	14606	14574	14259	14093
YJYC	YC01	12405	12372	12121	12101
JMEP	JM01	11868	11846	11822	11502
ZQSH	ZQ01	12550	12519	12303	12284
GZTH	GZ01	12277	12275	12123	12047
	GZ02	13112	13111	13076	13040
	GZ03	11768	11747	11665	11541
	GZ04	11185	11154	11043	10910
	GZ05	8398	8381	8320	8310
	GZ06	12017	11970	11874	11851
	M1	13022	13017	12815	12777
	M2	13012	13006	12724	12686
	M3	12938	12917	12573	12493
	M4	12962	12954	12803	12784
	M5	11901	11894	11765	11733
	M6	13045	13029	12839	12805
	T1	12570	12560	12470	12375
	T2	12965	12960	12921	12876
	T3	12912	12872	12740	12671
GZZC	GZ07	12125	12108	11799	11703
	GZ08	12309	12269	12067	11878
	GZ09	11725	11681	11488	11387
HZBL	HZ01	13946	13919	13846	13838
	HZ02	12678	12677	11190	8852
	HZ03	13427	13423	13222	13135
	HZ04	11940	11940	11885	11814
	HZ05	14803	14803	14597	14442
HZHD	HD01	10793	10774	10641	10628
CZRP	RP01	13380	13376	13258	13237