

Figure S1. The condition at harvest (screening tests for selection of *Bradyrhizobium* inoculant by 30 days pot experiment).

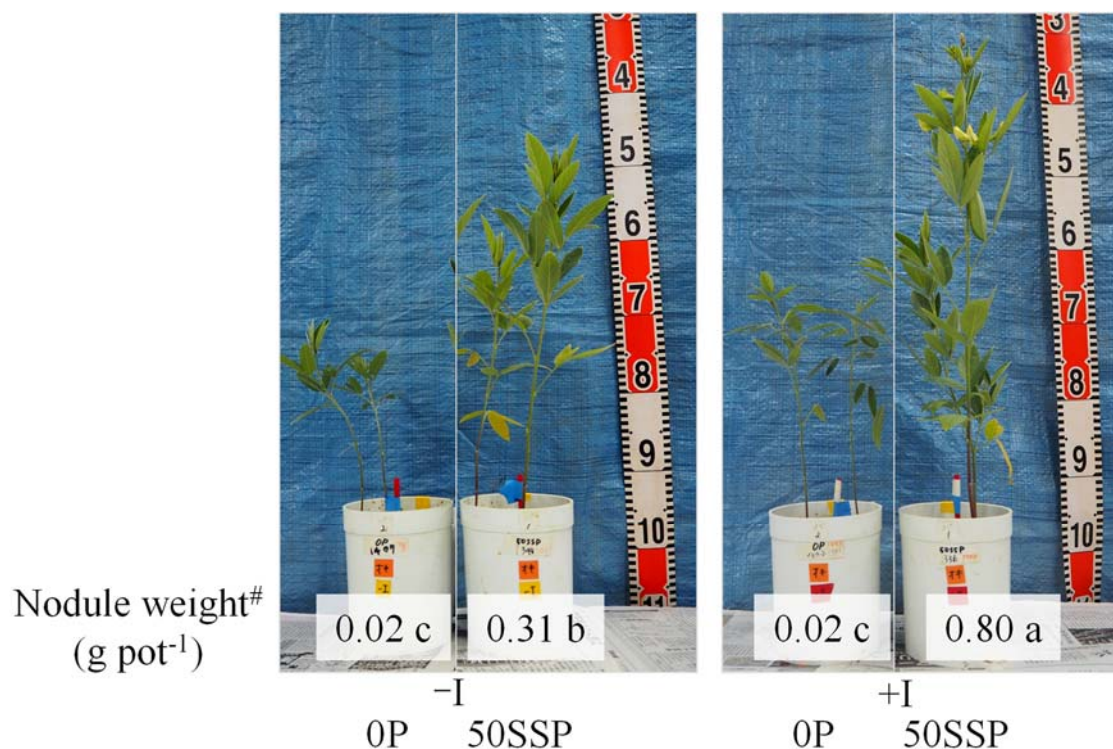


Figure S2. Plant condition at harvest and the total weight of *rhizobium* root nodules.

-I/+I and 0P/50SSP indicate *Rhizobium* inoculation and P fertilization.

#; The values in the photo indicate the total weight of *rhizobium* root nodules in each pot (g pot⁻¹; the fresh weight). Lowercase letters indicate significant differences in the total weight of *rhizobium* root nodules between the treatments, according to Tukey's posthoc test ($p < 0.05$).

Table S1. Plant P and N concentration after pot experiment.

		P concentration (mg P g ⁻¹)			N concentration (mg N g ⁻¹)		
		Leaf	Stem	Root	Leaf	Stem	Root
0P	-I	3.86	2.20	4.18	42.3	27.7	26.6
		(0.06) *	(0.20) *	(1.54)	(1.2)	(2.1)	(1.7)
	+I	3.58	1.63	2.39	44.5	28.4	30.2
		(0.05)	(0.10)	(0.14)	(1.5)	(1.0)	(0.9)
50SSP	-I	3.91	2.06	3.52	27.1	13.8	18.6
		(0.25)	(0.06) *	(0.21) *	(1.9)	(1.0) *	(1.0)
	+I	3.51	1.71	2.86	24.3	10.1	16.5
		(0.11)	(0.07)	(0.05)	(0.9)	(0.5)	(0.5)

-I/+I indicate with or without *Rhizobium* inoculation and 0P/50SSP represent no P fertilization, respectively. Values in parentheses indicate the standard errors of the mean. Lowercase letters indicate the significant difference between the treatments, according to Tukey's posthoc test ($p < 0.05$). * indicates the significant difference between the -I and +I treatments under each P treatment, according to Student's t-test ($p < 0.05$).

Table S2. Amount of fractionated and total soil P after the pot experiment

			Resin	NaHCO ₃		NaOH		HCl	Residual	Total
			-P	Pi	Po	Pi	Po	-P	-P	P
			(mg P kg ⁻¹ soil)							
-I	Ctrl	bulk	6.2	19.2	2.8	19.0	46.5	2.5	145.7	241.8
			(0.8)	(1.1)	(0.0)	(0.9)	(2.1)	(0.0)	(1.8)	(1.0)
	0P	bulk	4.7	14.9	5.6	19.2	47.5	2.3	145.5	239.8
			(0.2)	(0.9)	(0.8)	(0.4)	(2.2)	(0.2)	(4.1)	(4.0)
		rhizosphere	4.5	15.9	7.0	19.4	52.4	2.3	157.8	261.0
			(0.3)	(0.4)	(0.4)	(1.0)	(1.6)	(0.2)	(6.7)	(5.1)
	50SSP	bulk	9.1	34.9	3.1	34.6	49.8	2.4	156.4	287.3
			(0.9)	(2.1)	(0.7)	* (2.0)	(1.8)	* (0.0)	(14.3)	(14.6)
		rhizosphere	8.6	30.9	7.3	30.0	57.4	2.3	145.6	282.0
			(0.6)	(0.7)	(0.3)	(0.8)	(0.9)	(0.2)	(5.9)	(4.6)
	+I	0P	5.0	14.3	7.5	19.3	51.5	2.4	131.1	231.6
			(0.2)	(0.5)	(1.3)	(0.5)	(1.2)	(0.2)	(7.3)	(10.7)
		rhizosphere	8.7	16.5	8.9	19.3	55.2	2.2	157.0	267.8
			(3.2)	(1.0)	(0.6)	(0.7)	(2.4)	(0.2)	(6.3)	(4.2)
	50SSP	bulk	12.1	29.8	6.6	31.9	54.7	2.1	155.5	287.7
			(1.8)	(2.0)	* (1.1)	* (0.9)	* (3.5)	(0.2)	(3.4)	* (1.7)
		rhizosphere	10.3	46.1	10.1	45.9	62.2	2.2	186.2	371.7
			(1.2)	(4.9)	(0.5)	(4.9)	(1.5)	(0.2)	(2.5)	(7.6)

Ctrl, -I/+I, and 0P/50SSP indicate Control (No plant), *Rhizobium* inoculation, and P fertilization.

Values in parentheses indicate the standard errors of the mean. * indicates the significant difference between the bulk soil and the rhizosphere soil in each treatment according to Student's t-test ($p < 0.05$).

Table S3. The amount of organic acid per root.

		The amount of organic acid per root (mg g ⁻¹)					
		Citric acid	Malic acid	Succinic acid	Malonic acid	Oxalic acid	Total
0P	−I	1.43	0.77	0.83	0.39	0.15	3.49
		(0.30)	(0.17)	(0.13)	(0.04)	(0.02)	(0.66)
	+I	1.87	0.76	0.67	0.26	0.18	3.73
		(0.49)	(0.21)	(0.17)	(0.08)	(0.03)	(0.96)
50SSP	−I	1.04	0.52	0.53	0.35	0.11	2.39
		(0.10)	(0.05)	(0.06)	(0.05)	(0.01)	(0.24)
	+I	1.18	0.59	0.53	0.47	0.14	2.85
		(0.27)	(0.16)	(0.12)	(0.12)	(0.04)	(0.70)
I _{noc}		NS	NS	NS	NS	NS	NS
		0.8	0.0	0.5	0.1	1.5	0.3
P _{fer}		NS	NS	NS	NS	NS	NS
		2.8	1.6	3.1	0.5	2.0	2.1
I _{noc} ×P _{fer}		NS	NS	NS	NS	NS	NS
		0.2	0.1	0.4	3.3	0.0	0.0

-I/+I and 0P/50SSP indicate *Rhizobium* inoculation and P fertilization. Values in parentheses indicate the standard errors of the mean. NS in the lower half tables indicates not significant by two-way ANOVA; I_{noc} and P_{fer} indicate the effect of *Rhizobium* inoculation and P fertilization, respectively. Values in the lower half table indicate F-value.

Table S4. The amount of organic acid per pot.

		The amount of organic acid per pot (mg pot ⁻¹)					
		Citric acid	Malic acid	Succinic acid	Malonic acid	Oxalic acid	Total
0P	−I	1.30 (0.31)	0.71 (0.18)	0.78 (0.16)	0.35 (0.06)	0.13 (0.01)	3.20 (0.72) *
	+I	1.87 (0.16)	0.77 (0.11)	0.68 (0.05)	0.25 (0.04)	0.20 (0.03)	3.76 (0.35)
50SSP	−I	2.29 (0.19) *	1.17 (0.15) *	1.18 (0.13) *	0.78 (0.11) *	0.24 (0.02) *	5.31 (0.58) *
	+I	5.17 (0.42)	2.48 (0.19)	2.31 (0.09)	2.05 (0.23)	0.49 (0.02)	12.31 (0.79)
I _{noc}		***	***	***	***	***	***
		35	17	19	22	54	36
P _{fer}		***	***	***	***	***	***
		54	44	76	59	83	71
I _{noc} ×P _{fer}		**	**	***	***	***	***
		17	15	28	29	18	26

−I/+I and 0P/50SSP indicate *Rhizobium* inoculation and P fertilization. Values in parentheses indicate the standard errors of the mean. * in the upper half tables indicates the significant difference between the −I and +I treatments according to Student's t-test ($p < 0.05$). ** and *** in the lower half tables indicate $p < 0.01$, and $p < 0.001$, respectively, using two-way ANOVA; I_{noc} and P_{fer} indicate the effect of *Rhizobium* inoculation and P fertilization, respectively. Values in the lower half table indicate F value.

Table S5. pH after pot experiment.

		pH(H ₂ O)		
		bulk		rhizosphere
0P	−I	5.46 (0.01)	— * —	5.61 (0.02)
	+I	5.51 (0.03)	— * —	5.64 (0.03)
50SSP	−I	5.20 (0.01)	— * —	5.32 (0.04)
	+I	5.22 (0.03)	— * —	4.98 (0.03)

−I/+I and 0P/50SSP indicate *Rhizobium* inoculation and P fertilization. Values in parentheses indicate the standard errors of the mean. * indicates the significant difference between the bulk soil and the rhizosphere according to Student's t-test ($p < 0.05$).