

**Supplemental Table II: Amounts of polar lipid molecular species as affected by Bradyrhizobium inoculation.** Leaves and roots of four week old seedlings inoculated with Bradyrhizobium (+) and uninoculated (-) were used to analyze the lipids. Five biological replications were maintained for the experiment. The lipids were analyzed by ESI-MS/MS and the intensities in each spectrum were normalized to those two internal standards of the same class; a signal of 1 is the same amount of intensity as 1 nmol of the standards. The data represents the average of 5 replicates. The data of Bradyrhizobium inoculated were compared with un-inoculated using one-way ANOVA and the p values are reported. The p value <0.05 is presented in bold. The reduction in lipid species content upon Bradyrhizobium inoculation is denoted as minus (-) sign.

Lipid species (class and total acyl carbons: total carbon- carbon double bonds)	Compound Number	Normalized mass spectral signal per extracted dry mass (signal per mg)				Normalized mass spectral signal per extracted dry mass (signal per mg)			
		Leaf				Root			
		Brady- rhizobium (-)	Brady- rhizobium (+)	P value	Difference between Brady- rhizobium (-) and (+)	Brady- rhizobium (-)	Brady- rhizobium (+)	P value	Difference between Brady- rhizobium (-) and (+)
DGDG(34:6)	126	0.001	0.006	<b>0.004</b>	0.005	0.001	0.001	0.240	-0.001
DGDG(34:5)	127	0.001	0.008	<b>2.34E-05</b>	0.007	0.001	0.000	0.681	0.000
DGDG(34:4)	128	0.040	0.143	<b>4.30E-05</b>	0.103	0.002	0.002	0.708	0.000
DGDG(34:3)	129	1.709	4.896	<b>4.65E-05</b>	3.187	0.126	0.144	0.598	0.018
DGDG(34:2)	130	0.015	0.024	4.89E-01	0.008	0.022	0.011	<b>0.042</b>	-0.010
DGDG(34:1)	131	0.030	0.054	<b>5.00E-03</b>	0.024	0.004	0.002	0.415	-0.002
DGDG(36:6)	132	4.399	13.935	<b>5.03E-05</b>	9.535	0.494	0.488	0.936	-0.006
DGDG(36:5)	133	0.151	0.495	<b>5.06E-04</b>	0.344	0.029	0.028	0.905	-0.001
DGDG(36:4)	134	0.129	0.305	<b>0.0015</b>	0.176	0.026	0.025	0.9	0.000
DGDG(36:3)	135	0.680	1.049	0.08	0.369	0.088	0.086	0.896	-0.002
DGDG(36:2)	136	0.020	0.039	<b>0.04</b>	0.020	0.013	0.007	<b>0.009</b>	-0.006
DGDG(36:1)	137	0.004	0.006	0.219	0.003	0.001	0.000	0.732	0.000
DGDG(38:6)	138	0.033	0.130	<b>2.15E-05</b>	0.096	0.010	0.001	<b>0.005</b>	-0.010
DGDG(38:5)	139	0.000	0.002	0.085	0.002	0.000	0.000	0.397	0.000

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DGDG(38:4)	140	0.003	0.006	<b>0.0017</b>	0.003	0.001	0.001	0.216	0.000
DGDG(38:3)	141	0.010	0.023	<b>0.005</b>	0.013	0.002	0.001	0.509	-0.001
TOTAL DGDG		7.226	21.122	<b>7.20E-05</b>	13.896	0.820	0.799	0.877	-0.021
MGDG(34:6)	110	0.044	0.057	0.351	0.013	0.015	0.014	0.821	-0.001
MGDG(34:5)	111	0.013	0.046	<b>0.007</b>	0.034	0.005	0.004	0.570	-0.001
MGDG(34:4)	112	0.066	0.331	<b>3.89E-04</b>	0.264	0.005	0.007	0.230	0.002
MGDG(34:3)	113	0.319	1.306	<b>3.98E-04</b>	0.987	0.017	0.030	0.122	0.013
MGDG(34:2)	114	0.013	0.030	<b>0.007</b>	0.018	0.006	0.009	0.213	0.003
MGDG(34:1)	115	0.004	0.000	0.054	-0.004	0.012	0.013	0.834	0.001
MGDG(36:6)	116	14.224	43.446	<b>3.33E-04</b>	29.223	1.088	1.381	0.156	0.293
MGDG(36:5)	117	0.366	2.045	<b>1.55E-04</b>	1.679	0.037	0.039	0.848	0.002
MGDG(36:4)	118	0.340	0.879	<b>8.14E-05</b>	0.539	0.025	0.030	0.459	0.004
MGDG(36:3)	119	0.154	0.300	<b>0.05</b>	0.146	0.010	0.013	0.326	0.004
MGDG(36:2)	120	0.007	0.010	1.52E-01	0.003	0.001	0.006	<b>9.93E-04</b>	0.005
MGDG(36:1)	121	0.002	0.000	0.36	-0.002	0.002	0.001	0.13	-0.002
MGDG(38:6)	122	0.019	0.068	<b>0.001</b>	0.049	0.000	0.000	0.35	0.000
MGDG(38:5)	123	0.007	0.025	<b>0.002</b>	0.018	0.001	0.000	<b>0.04</b>	-0.001
MGDG(38:4)	124	0.005	0.011	<b>0.004</b>	0.006	0.000	0.001	0.12	0.001
MGDG(38:3)	125	0.003	0.006	<b>0.012</b>	0.003	0.001	0.000	0.29	-0.001
TOTAL MGDG		15.585	48.560	<b>2.56E-04</b>	32.975	1.224	1.547	0.168	0.323
PG(32:1)	103	0.456	1.529	<b>9.02E-05</b>	1.074	0.008	0.025	<b>0.009</b>	0.017
PG(32:0)	104	0.110	0.277	<b>0.02</b>	0.167	0.161	0.235	<b>0.009</b>	0.074
PG(34:4)	105	0.104	0.508	<b>2.71E-04</b>	0.404	0.001	0.002	1.000	0.000
PG(34:3)	106	0.104	0.434	<b>9.44E-05</b>	0.330	0.140	0.211	<b>0.010</b>	0.071
PG(34:2)	107	0.275	1.008	<b>3.69E-05</b>	0.733	0.088	0.171	<b>7.67E-04</b>	0.083
PG(34:1)	108	0.173	0.463	<b>5.60E-04</b>	0.290	0.026	0.048	<b>0.003</b>	0.023
PG(34:0)	109	0.027	0.055	<b>1.00E-02</b>	0.028	0.030	0.048	<b>0.001</b>	0.019
PG(36:6)	152	0.001	0.005	<b>2.27E-04</b>	0.004	0.003	0.005	<b>0.008</b>	0.002
PG(36:5)	153	0.001	0.004	<b>1.29E-04</b>	0.003	0.004	0.008	<b>5.75E-04</b>	0.005
PG(36:4)	154	0.003	0.013	<b>1.00E-03</b>	0.010	0.002	0.005	<b>0.002</b>	0.003

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PG(36:3)	155	0.003	0.007	<b>1.00E-03</b>	0.004	0.005	0.010	<b>0.005</b>	0.005
PG(36:2)	156	0.004	0.011	<b>2.11E-04</b>	0.007	0.009	0.040	<b>4.39E-05</b>	0.031
PG(36:1)	157	0.001	0.002	<b>2.00E-02</b>	0.001	0.001	0.002	<b>0.010</b>	0.001
TOTAL PG		1.262	4.317	<b>6.99E-05</b>	3.055	0.477	0.809	<b>0.002</b>	0.332
LPG(16:1)	98	0.007	0.003	0.35	-0.004	0.000	0.009	<b>4.77E-05</b>	0.009
LPG(16:0)	99	0.007	0.018	<b>0.015</b>	0.012	0.003	0.009	0.05	0.007
LPG(18:3)	100	0.000	0.001	0.57	0.000	0.000	0.001	0.15	0.001
LPG(18:2)	101	0.001	0.000	0.8	0.000	0.002	0.005	0.38	0.004
LPG(18:1)	102	0.000	0.001	0.35	0.001	0.001	0.000	0.24	0.000
TOTAL LPG		0.015	0.023	0.16	0.009	0.005	0.025	<b>2.00E-05</b>	0.019
LPC(16:1)	87	0.000	0.000	-	0.000	0.000	0.000	-	0.000
LPC(16:0)	88	0.011	0.010	0.81	-0.001	0.013	0.011	0.510	-0.002
LPC(18:3)	89	0.006	0.007	0.55	0.001	0.016	0.013	0.170	-0.004
LPC(18:2)	90	0.008	0.010	0.38	0.002	0.011	0.012	0.720	0.001
LPC(18:1)	91	0.001	0.001	0.78	0.000	0.001	0.002	0.400	0.001
LPC(18:0)	92	0.006	0.005	0.87	0.000	0.004	0.006	0.120	0.002
TOTAL LPC		0.031	0.032	0.907	0.002	0.046	0.044	0.756	-0.002
LPE(16:1)	93	0.000	0.000	0.35	0.000	0.000	0.003	<b>0.001</b>	0.003
LPE(16:0)	94	0.006	0.007	0.57	0.001	0.035	0.038	0.430	0.003
LPE(18:3)	95	0.001	0.002	0.24	0.001	0.015	0.016	0.940	0.000
LPE(18:2)	96	0.005	0.005	0.9	0.000	0.020	0.020	1.000	0.000
LPE(18:1)	97	0.000	0.000	0.35	0.000	0.003	0.004	<b>0.020</b>	0.002
TOTAL LPE		0.012	0.014	0.391	0.002	0.074	0.081	0.264	0.008
PC(32:0)	1	0.007	0.010	0.06	0.004	0.028	0.036	0.150	0.008
PC(34:4)	2	0.006	0.013	<b>0.001</b>	0.008	0.023	0.041	<b>0.009</b>	0.018
PC(34:3)	3	0.796	1.218	<b>0.02</b>	0.422	1.739	2.211	0.080	0.472
PC(34:2)	4	0.896	1.414	<b>0.008</b>	0.517	1.245	1.879	<b>0.007</b>	0.635
PC(34:1)	5	0.133	0.052	<b>0.02</b>	-0.081	0.047	0.099	<b>0.003</b>	0.052
PC(36:6)	6	0.240	0.518	<b>9.90E-04</b>	0.278	1.097	1.553	<b>0.020</b>	0.455
PC(36:5)	7	0.572	1.259	<b>9.23E-05</b>	0.687	1.421	2.388	<b>0.002</b>	0.967

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PC(36:4)	8	0.483	0.949	<b>9.50E-04</b>	0.466	0.704	1.403	<b>7.07E-04</b>	0.699
PC(36:3)	9	0.513	0.638	0.210	0.126	0.665	0.933	<b>0.026</b>	0.268
PC(36:2)	10	0.395	0.581	<b>0.020</b>	0.186	0.383	0.643	<b>0.001</b>	0.261
PC(36:1)	11	0.001	0.000	0.350	-0.001	0.000	0.000	-	0.000
PC(38:6)	12	0.001	0.006	<b>2.67E-04</b>	0.005	0.010	0.014	0.090	0.005
PC(38:5)	13	0.004	0.016	<b>1.78E-04</b>	0.012	0.018	0.028	<b>0.040</b>	0.010
PC(38:4)	14	0.008	0.022	<b>2.30E-02</b>	0.014	0.023	0.029	0.114	0.006
PC(38:3)	115	0.037	0.055	0.060	0.019	0.094	0.117	0.130	0.023
PC(38:2)	16	0.023	0.037	<b>0.010</b>	0.014	0.045	0.065	<b>0.010</b>	0.020
PC(40:5)	17	0.001	0.001	<b>0.050</b>	0.001	0.003	0.004	0.260	0.001
PC(40:4)	18	0.001	0.002	<b>0.040</b>	0.001	0.004	0.004	0.460	0.001
PC(40:3)	19	0.007	0.010	0.070	0.002	0.012	0.021	<b>0.010</b>	0.008
PC(40:2)	20	0.011	0.011	0.970	0.000	0.018	0.029	<b>0.006</b>	0.011
TOTAL PC		4.133	6.813	<b>0.004</b>	2.680	7.580	11.498	<b>0.007</b>	3.918
PE(32:3)	142	0.000	0.000	-	0.000	0.004	0.006	0.070	0.002
PE(32:2)	143	0.000	0.001	<b>0.008</b>	0.001	0.008	0.037	<b>1.50E-04</b>	0.029
PE(32:1)	144	0.001	0.001	0.242	0.000	0.019	0.113	<b>1.90E-04</b>	0.094
PE(32:0)	145	0.001	0.001	0.380	0.000	0.003	0.007	<b>5.42E-04</b>	0.004
PE(34:4)	21	0.002	0.003	<b>0.014</b>	0.001	0.020	0.029	<b>0.050</b>	0.009
PE(34:3)	22	0.304	0.425	0.082	0.121	1.856	2.205	0.220	0.350
PE(34:2)	23	0.431	0.603	<b>0.030</b>	0.172	1.608	2.151	<b>0.04</b>	0.544
PE(34:1)	24	0.040	0.016	<b>0.021</b>	-0.024	0.045	0.106	<b>0.001</b>	0.061
PE(36:6)	25	0.038	0.081	<b>0.019</b>	0.042	0.318	0.436	0.09	0.118
PE(36:5)	26	0.183	0.362	<b>0.001</b>	0.179	0.753	1.194	<b>0.01</b>	0.441
PE(36:4)	27	0.193	0.390	<b>5.01E-04</b>	0.196	0.448	0.766	<b>0.008</b>	0.318
PE(36:3)	28	0.106	0.116	0.608	0.010	0.342	0.439	0.13	0.097
PE(36:2)	29	0.128	0.164	0.083	0.036	0.274	0.404	<b>0.01</b>	0.130
PE(36:1)	30	0.003	0.000	<b>0.006</b>	-0.003	0.000	0.001	0.35	0.001
PE(38:6)	31	0.002	0.003	0.620	0.000	0.006	0.009	<b>0.033</b>	0.003
PE(38:5)	32	0.003	0.008	<b>0.002</b>	0.004	0.010	0.013	0.19	0.004

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PE(38:4)	33	0.003	0.007	<b>0.001</b>	0.004	0.012	0.015	0.16	0.003
PE(38:3)	34	0.010	0.012	0.385	0.002	0.048	0.062	0.08	0.014
PE(40:3)	36	0.006	0.006	0.880	0.000	0.026	0.041	<b>0.02</b>	0.015
PE(40:2)	37	0.014	0.010	<b>0.044</b>	-0.004	0.036	0.059	<b>0.01</b>	0.023
PE(42:4)	38	0.001	0.001	0.693	0.000	0.000	0.000	0.54	0.000
PE(42:3)	39	0.008	0.011	0.162	0.003	0.105	0.125	0.18	0.020
PE(42:2)	40	0.025	0.030	0.275	0.005	0.173	0.200	0.24	0.028
TOTAL PE		1.503	2.248	<b>0.015</b>	0.744	6.113	8.421	<b>0.039</b>	2.307
PI(32:3)	146	0.000	0.001	0.141	0.000	0.001	0.001	0.850	0.000
PI(32:2)	147	0.000	0.001	<b>0.004</b>	0.001	0.001	0.001	0.110	0.000
PI(32:1)	148	0.000	0.001	<b>0.04</b>	0.000	0.002	0.004	<b>0.001</b>	0.002
PI(32:0)	149	0.004	0.003	0.11	-0.001	0.021	0.022	0.530	0.001
PI(34:4)	41	0.001	0.002	<b>0.028</b>	0.001	0.006	0.010	<b>0.025</b>	0.005
PI(34:3)	42	0.255	0.425	0.058	0.170	1.521	1.787	0.236	0.267
PI(34:2)	43	0.155	0.311	<b>0.003</b>	0.156	0.765	0.991	0.052	0.226
PI(34:1)	44	0.001	0.000	0.06	-0.001	0.002	0.008	<b>0.024</b>	0.007
PI(36:6)	45	0.009	0.020	<b>0.011</b>	0.011	0.061	0.110	<b>0.004</b>	0.049
PI(36:5)	46	0.012	0.032	<b>1.59E-04</b>	0.020	0.077	0.160	<b>6.55E-04</b>	0.083
PI(36:4)	47	0.010	0.021	<b>0.0045</b>	0.010	0.048	0.108	<b>7.10E-04</b>	0.060
PI(36:3)	48	0.044	0.079	<b>0.014</b>	0.035	0.166	0.256	<b>0.02</b>	0.090
PI(36:2)	49	0.030	0.078	<b>0.003</b>	0.047	0.106	0.170	<b>0.006</b>	0.064
PI(36:1)	50	0.001	0.000	<b>0.04</b>	-0.001	0.003	0.003	0.76	0.000
TOTAL PI		0.521	0.972	<b>0.01</b>	0.451	2.778	3.633	0.063	0.855
PS(34:4)	61	0.000	0.000	-	0.000	0.000	0.000	0.170	0.000
PS(34:3)	62	0.002	0.003	<b>8.26E-04</b>	0.002	0.025	0.044	<b>0.010</b>	0.019
PS(34:2)	63	0.000	0.004	<b>4.51E-07</b>	0.004	0.017	0.029	<b>0.009</b>	0.012
PS(34:1)	64	0.000	0.000	-	0.000	0.001	0.002	0.200	0.001
PS(36:6)	65	0.000	0.000	-	0.000	0.001	0.002	<b>0.008</b>	0.001
PS(36:5)	66	0.003	0.003	0.3	0.001	0.001	0.002	<b>0.010</b>	0.001
PS(36:4)	67	0.001	0.001	<b>0.04</b>	0.001	0.001	0.003	<b>0.007</b>	0.001

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PS(36:3)	68	0.000	0.003	<b>2.33E-07</b>	0.003	0.014	0.023	<b>0.020</b>	0.009
PS(36:2)	69	0.000	0.004	<b>9.22E-05</b>	0.004	0.010	0.016	<b>0.008</b>	0.006
PS(36:1)	70	0.000	0.000	0.35	0.000	0.000	0.001	0.070	0.001
PS(38:6)	71	0.000	0.000		0.000	0.000	0.000	0.220	0.000
PS(38:5)	72	0.000	0.000	-	0.000	0.001	0.000	0.110	0.000
PS(38:4)	73	0.000	0.000	-	0.000	0.001	0.001	0.440	0.000
PS(38:3)	74	0.000	0.002	<b>3.23E-04</b>	0.002	0.011	0.019	<b>0.008</b>	0.008
PS(38:2)	75	0.000	0.003	<b>5.82E-04</b>	0.003	0.009	0.014	<b>0.008</b>	0.006
PS(38:1)	76	0.000	0.000	-	0.000	0.000	0.001	<b>0.012</b>	0.001
PS(40:4)	77	0.000	0.000	-	0.000	0.000	0.000	0.140	0.000
PS(40:3)	78	0.001	0.003	<b>3.58E-05</b>	0.003	0.024	0.040	<b>0.020</b>	0.017
PS(40:2)	79	0.000	0.007	<b>1.04E-05</b>	0.007	0.017	0.030	<b>0.060</b>	0.013
PS(40:1)	80	0.000	0.000	-	0.000	0.000	0.001	0.006	0.001
PS(42:4)	81	0.000	0.000	-	0.000	0.001	0.001	0.880	0.000
PS(42:3)	82	0.006	0.013	<b>8.07E-04</b>	0.007	0.097	0.125	0.180	0.028
PS(42:2)	83	0.008	0.024	<b>2.17E-04</b>	0.016	0.069	0.084	0.280	0.016
PS(42:1)	84	0.000	0.000	-	0.000	0.001	0.000	0.290	-0.001
PS(44:3)	85	0.000	0.001	<b>0.004</b>	0.001	0.008	0.007	0.670	-0.001
PS(44:2)	86	0.000	0.002	<b>0.014</b>	0.001	0.009	0.008	0.810	0.000
TOTAL PS		0.021	0.076	<b>1.53E-05</b>	0.055	0.316	0.455	0.056	0.139
PA(32:0)	150	0.000	0.000	0.35	0.000	0.032	0.067	<b>0.001</b>	0.035
PA(34:6)	51	0.000	0.000	-	0.000	0.002	0.009	<b>4.30E-05</b>	0.007
PA(34:5)	151	0.000	0.000	-	0.000	0.001	0.002	<b>0.024</b>	0.001
PA(34:4)	52	0.000	0.000	-	0.000	0.005	0.002	<b>0.001</b>	-0.003
PA(34:3)	53	0.013	0.014	0.83	0.000	0.487	0.214	<b>0.000</b>	-0.272
PA(34:2)	54	0.014	0.015	0.57	0.001	0.382	0.231	<b>7.06E-04</b>	-0.150
PA(34:1)	55	0.002	0.002	0.74	0.000	0.014	0.032	<b>0.002</b>	0.018
PA(36:6)	56	0.002	0.002	0.78	0.000	0.097	0.048	<b>6.90E-04</b>	-0.049
PA(36:5)	57	0.004	0.006	0.13	0.002	0.163	0.089	<b>5.51E-05</b>	-0.075
PA(36:4)	58	0.005	0.007	0.25	0.002	0.107	0.072	<b>2.03E-04</b>	-0.035

Supplement to: Narasimhan, R., Wang, G., Li, M., Roth, M., Welti, R., & Wang, X. (2013). Differential changes in galactolipid and phospholipid species in soybean leaves and roots under nitrogen deficiency and after nodulation. Retrieved from <http://krex.ksu.edu>

PA(36:3)	59	0.004	0.004	1	0.000	0.087	0.055	<b>2.34E-04</b>	-0.032
PA(36:2)	60	0.003	0.004	0.61	0.001	0.073	0.059	0.090	-0.014
TOTAL PA		0.048	0.054	0.515	0.006	1.450	0.880	<b>1.91E-04</b>	-0.570
Total analyzed lipids		30.357	84.232	<b>1.33E-04</b>	53.875	20.882	28.191	<b>3.00E-02</b>	7.308