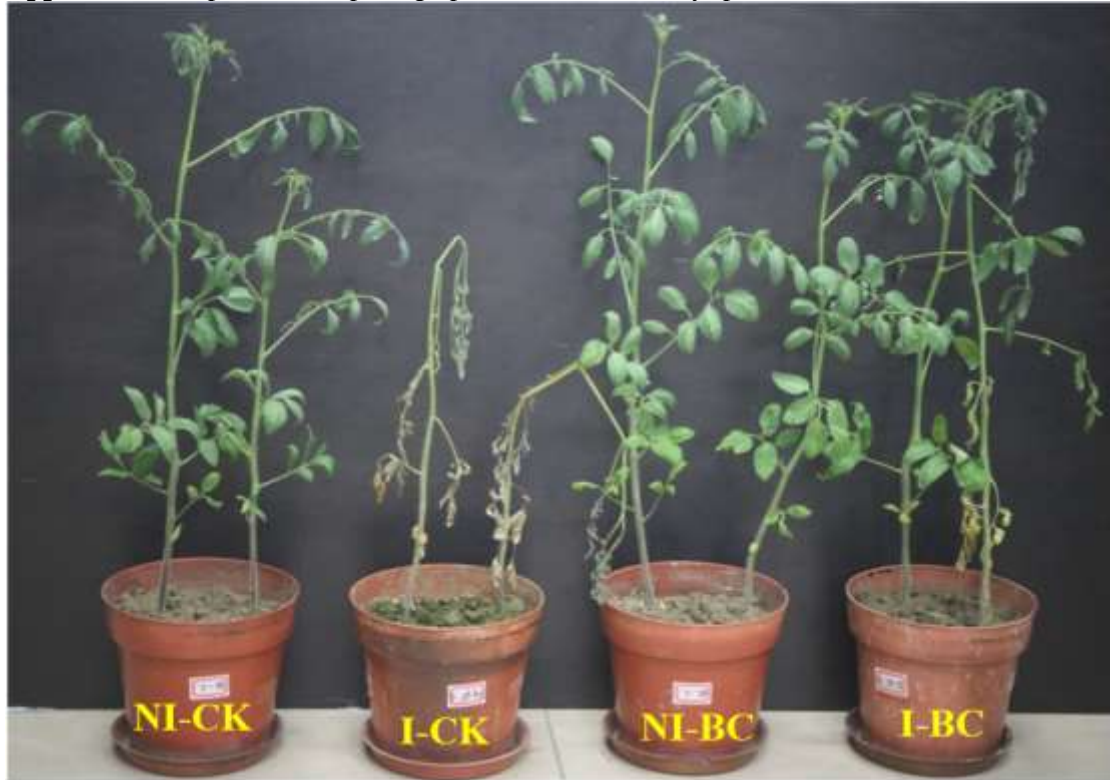


**Appendix A** The MS parameters for organic acids and amino acids

Compounds	Scan mode	Capillary voltage (V)	Parent ion <sup>a</sup>	Daughter ion <sup>a</sup>	Cone voltage (V)	Collision energy (eV)
Valine	positive ion	3000	117.9	72	20	8
			117.9	55	20	16
Threonine	positive ion	3000	119.8	74	20	10
			119.8	56	20	12
Lysine	positive ion	3000	146.9	84	22	16
			146.9	130	22	9
Histidine	positive ion	3000	155.9	109.9	28	12
			155.9	82.9	28	20
Arginine	positive ion	3000	175	70	30	20
			175	60	30	12
Methionine	positive ion	3000	149.9	56	22	14
			149.9	104	22	10
Phenylalanine	positive ion	3000	165.9	120	24	12
			165.9	102.9	24	26
Salicylic acid	positive ion	3000	138.9	65	24	24
			138.9	93	24	18
Alanine	positive ion	3000	89.7	69	22	6
Citric acid	negative ion	-3000	191.1	111	23	12
			191.1	87	23	17
Malic acid	negative ion	-3000	133	115	25	10
			133	70.9	25	15
Tartaric acid	negative ion	-3000	149	86.9	28	12
			149	103	28	10
Succinic acid	negative ion	-3000	117	73	25	5
Fumaric acid	negative ion	-3000	115	70.9	22	8

<sup>a</sup>For compounds with two rows, the numbers in the upper and bottom row refers to quantitative and qualitative ion, respectively. For compounds with only one row, the number refers to quantitative ion.

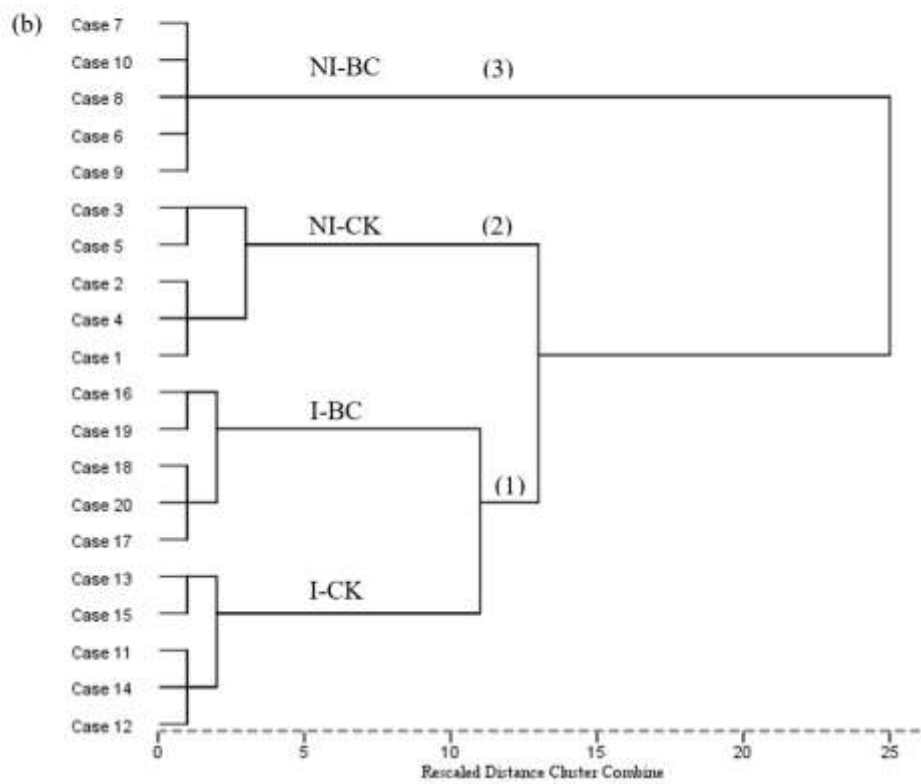
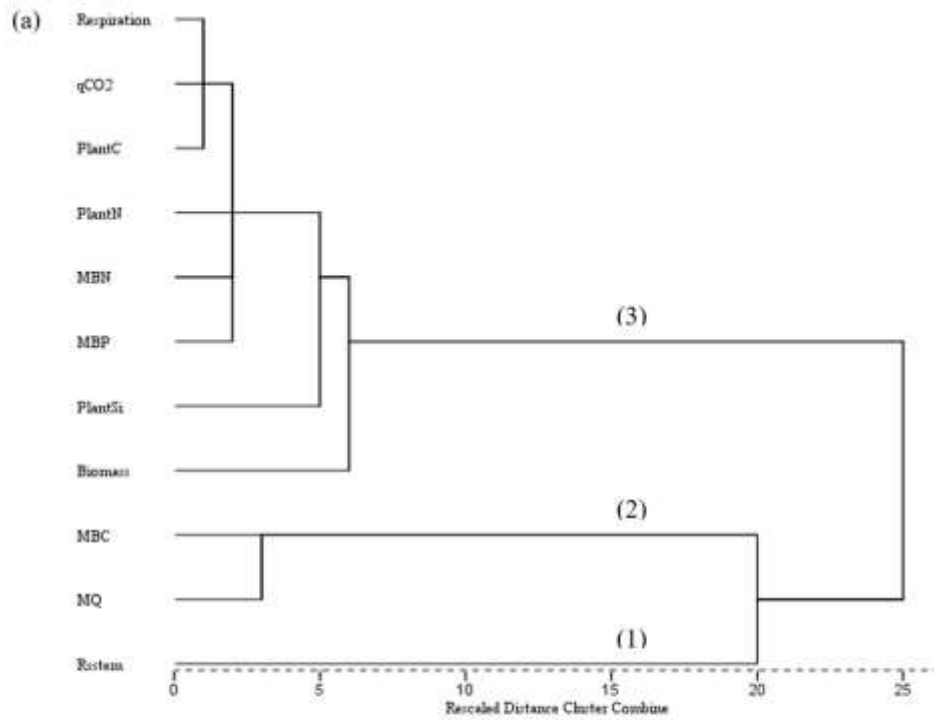
**Appendix B** A representative photograph was taken at 12 days post *R. solanacearum* inoculation.



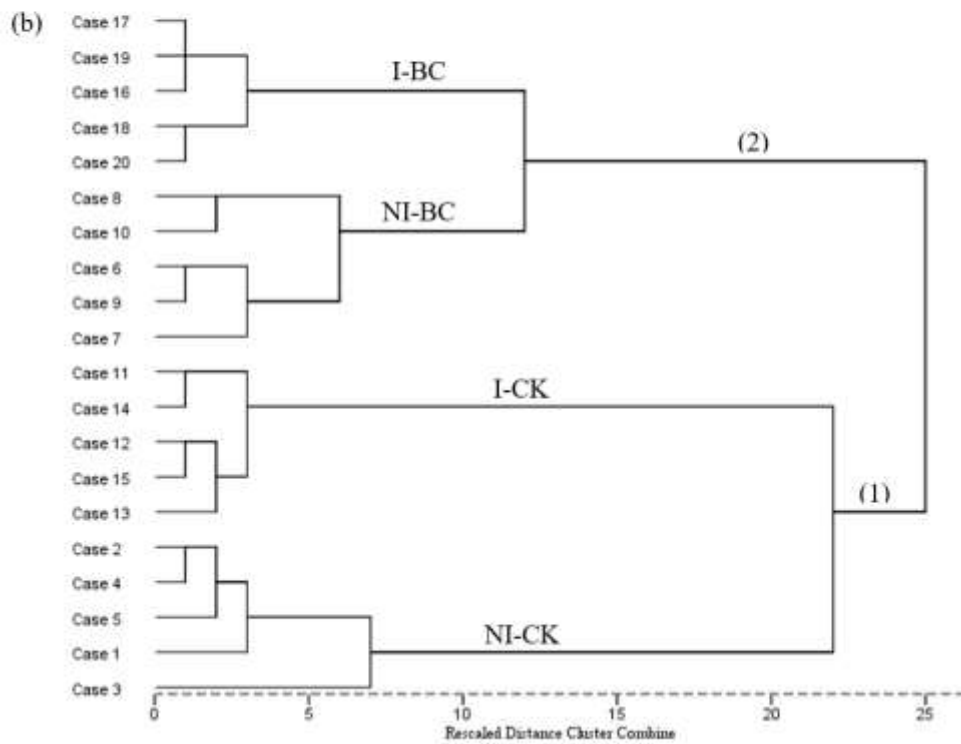
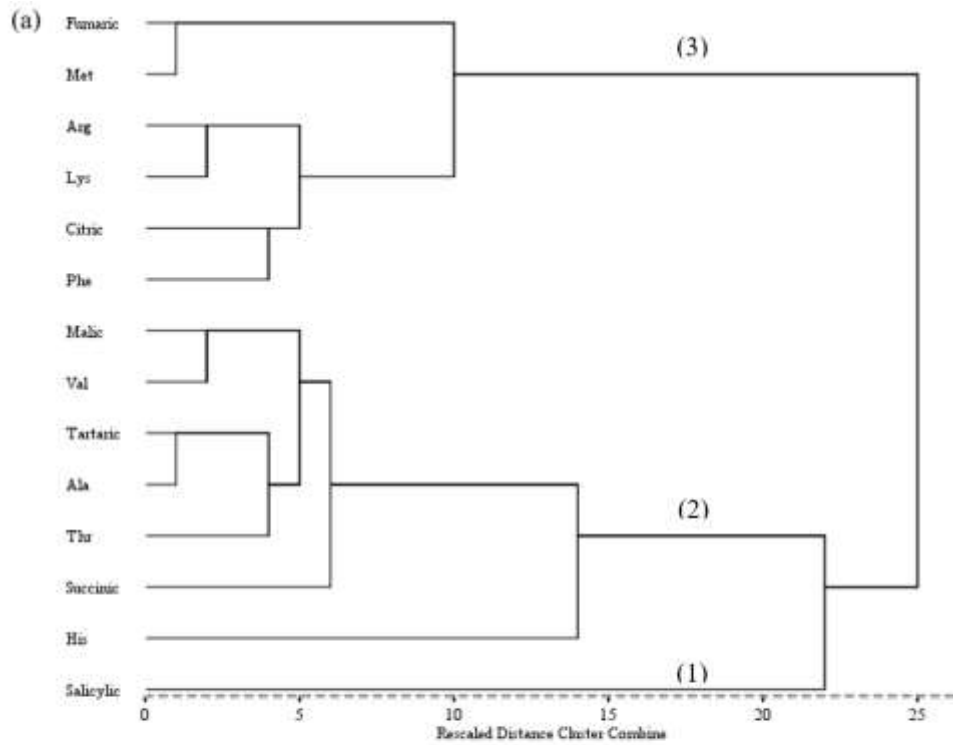
**Appendix C** A two-way ANOVA for effects of biochar amendment, *R. solanacearum* inoculation and their interactions on rhizosphere organic acids and amino acids

Variables		Model	Biochar (Bc)	<i>R. solanacearum</i> (Rs)	Bc × Rs
Citric acid	<i>F</i>	172.926	44.207	801.210	15.238
	<i>P</i>	<b>&lt;0.001</b>	<b>0.001</b>	<b>&lt;0.001</b>	<b>0.008</b>
Malic acid	<i>F</i>	10.767	19.347	28.923	5.305
	<i>P</i>	<b>0.006</b>	<b>0.005</b>	<b>0.002</b>	<b>0.061</b>
Succinic acid	<i>F</i>	9.539	21.551	18.169	5.767
	<i>P</i>	<b>0.008</b>	<b>0.004</b>	<b>0.005</b>	<b>0.053</b>
Fumaric acid	<i>F</i>	30.713	138.177	1.557	13.121
	<i>P</i>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.259</b>	<b>0.011</b>
Tartaric acid	<i>F</i>	126.532	620.765	9.053	1.921
	<i>P</i>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.024</b>	<b>0.215</b>
Salicylic acid	<i>F</i>	29.189	30.419	95.750	17.729
	<i>P</i>	<b>&lt;0.001</b>	<b>0.001</b>	<b>&lt;0.001</b>	<b>0.006</b>
Methionine	<i>F</i>	23.532	102.950	11.770	2.819
	<i>P</i>	<b>0.001</b>	<b>&lt;0.001</b>	<b>0.014</b>	<b>0.144</b>
Arginine	<i>F</i>	2.220	3.578	6.843	0.364
	<i>P</i>	<b>0.180</b>	<b>0.107</b>	<b>0.040</b>	<b>0.568</b>
Histidine	<i>F</i>	0.423	1.054	0.022	0.863
	<i>P</i>	<b>0.818</b>	<b>0.344</b>	<b>0.888</b>	<b>0.389</b>
Alanine	<i>F</i>	15.355	63.713	9.425	1.508
	<i>P</i>	<b>0.002</b>	<b>&lt;0.001</b>	<b>0.022</b>	<b>0.265</b>
Phenylalanine	<i>F</i>	3.440	0.800	12.800	3.200
	<i>P</i>	<b>0.082</b>	<b>0.406</b>	<b>0.012</b>	<b>0.124</b>
Valine	<i>F</i>	6.130	11.885	14.317	1.452
	<i>P</i>	<b>0.024</b>	<b>0.014</b>	<b>0.009</b>	<b>0.274</b>
Threonine	<i>F</i>	8.215	24.338	14.951	0.234
	<i>P</i>	<b>0.012</b>	<b>0.003</b>	<b>0.008</b>	<b>0.646</b>
Lysine	<i>F</i>	9.428	21.216	24.893	0.089
	<i>P</i>	<b>0.008</b>	<b>0.004</b>	<b>0.002</b>	<b>0.776</b>

**Appendix D** Clustering analysis of **(a)** variables for plant and soil microorganisms (response variables in RDA), and **(b)** samples with or without biochar amendment that was either pathogen-free or inoculated with *R. solanacearum*.



**Appendix E** Clustering analysis of **(a)** variables for rhizosphere soil compounds (explanatory variables in RDA), and **(b)** samples with or without biochar amendment that was either pathogen-free or inoculated with *R. solanacearum*.



**Appendix F** Correlations between rhizosphere organic compounds, pathogen population density, plant growth and soil properties for different treatments

	Rs-stem	Plant biomass	Plant C	Plant N	Plant Si	C <sub>mic</sub>	N <sub>mic</sub>	P <sub>mic</sub>	Respiration	q (CO <sub>2</sub> )	Microbial quotient
Citric acid	-0.97**	0.87**	0.63*	0.66*	ns	ns	0.70*	0.60*	0.63*	ns	ns
Malic acid	-0.58*	ns	ns	ns	-0.61*	0.84**	ns	ns	ns	ns	0.82**
Succinic acid	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.65*
Fumaric acid	ns	ns	0.89**	0.67**	0.88**	-0.68*	0.75**	0.85**	0.81**	0.88**	-0.88**
Tartaric acid	ns	ns	-0.72**	ns	-0.79**	0.66*	-0.73**	-0.78**	-0.74**	-0.81**	0.95**
Salicylic acid	0.93**	-0.97**	-0.63*	-0.65*	ns	ns	-0.82**	-0.76**	-0.64*	ns	ns
Met	ns	0.59*	0.94**	0.73**	0.79**	ns	0.85**	0.90**	0.89**	0.92**	-0.78**
Arg	-0.77**	0.82**	0.64*	0.61*	ns	ns	0.69*	0.76**	ns	ns	ns
His	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Ala	ns	ns	ns	ns	-0.79**	0.77**	ns	-0.58*	ns	-0.66*	0.93**
Phe	-0.82**	0.80**	ns	ns	ns	ns	0.59*	ns	ns	ns	ns
Val	ns	ns	ns	ns	ns	0.88**	ns	ns	ns	ns	0.77**
Thr	ns	ns	ns	ns	-0.58*	0.63*	ns	ns	ns	ns	0.81**
Lys	-0.82**	0.87**	0.83**	0.89**	ns	ns	0.89**	0.89**	0.84**	0.75**	ns

\* and \*\* represent statistically significant at P=0.05 and 0.01 level, respectively.