

**Table S1** Constituents of 10 × Hoagland's nutrient solution for soil

Composition	Concentration (g/L)
Ca (NO <sub>3</sub> ) <sub>2</sub> ·4H <sub>2</sub> O	9.45
KNO <sub>3</sub>	5.06
NH <sub>4</sub> NO <sub>3</sub>	0.80
KH <sub>2</sub> PO <sub>4</sub>	1.36
MgSO <sub>4</sub>	4.93
FeSO <sub>4</sub> ·7H <sub>2</sub> O	5.56
EDTA-2Na	7.46

**Table S2** Sequences of primers used to amplify ITS1 sequences

Primer name	Sequences (5'→3')	Gene length
ITS1		
ITS1F	TCCGTAGGTGAACCTGCGG	388-583 bp
ITS2R	TCCTCCGCTTATTGATATGC	

**Table S3** Primers for PCR screening of re-inoculation fungi

Primer name	Sequences (5'→3')	Gene length
Ag-Ca F	CAACTTTTAACAACG	150-200 bp
Ag-Ca R	CACTCGAACAGGCGT	

**Table S4** Constituents of DNS reaction solution

composition	Concentration(g/L)
DNS	6.50
NaOH	26.00
Glycerol	45.00

**Table S5** The 30 symbiotic fungi in the blue community

Number	Name
1	o_Cantharellales; f_Cantharellales_fam_Incertae_sedis; g_ <i>Sistotrema</i>
2	o_Helotiales; g_ <i>Spirosphaera</i>
3	g_ <i>Calcarisporiella</i>
4	o_Pleosporales; f_Didymellaceae; g_ <i>Boeremia</i>
5	o_Moniliales; f_Dematiaceae; g_ <i>Coniosporium</i>
6	o_Orbiliales; g_ <i>Microdochium</i>
7	o_Saccharomycetales; g_ <i>Candida</i>
8	o_Hypocreales; f_Clavicipitaceae; g_ <i>Pochonia</i>
9	o_Pleosporales; f_Cucurbitariaceae; g_ <i>Pyrenochaetopsis</i>
10	o_Pezizales; f_Ascobolaceae; g_ <i>Ascobolus</i>
11	o_Teloschistales; f_Teloschistaceae; g_ <i>Athallia</i>
12	o_Sordariales; f_Chaetomiaceae; g_ <i>Corynascella</i>
13	o_Pleosporales; f_Latoruaceae; g_ <i>Latorua</i>
14	o_Eurotiales; f_Trichocomaceae; g_ <i>Sagenomella</i>
15	f_Orbiliaceae; g_ <i>Dactylella</i>
16	g_ <i>Guehomyces</i>
17	f_Orbiliaceae; g_ <i>Duddingtonia</i>
18	o_Archaeorhizomycetales; f_Archaeorhizomycetaceae; g_ <i>Archaeorhizomyces</i>
19	o_Tremellales; f_Trimorphomycetaceae; g_ <i>Saitozyma</i>
20	o_Pleosporales; f_Tetraplosphaeriaceae; g_ <i>Tetraplosphaeria</i>
21	o_Cystobasidiales; f_Microsporomycetaceae; g_ <i>Microsporomyces</i>
22	o_Agaricales; f_Strophariaceae; g_ <i>Deconica</i>
23	o_Malasseziales; f_Malasseziaceae; g_ <i>Malassezia</i>
24	o_Russulales; f_Stephanosporaceae; g_ <i>Unidentified</i>
25	o_Cantharellales; f_Ceratobasidiaceae; g_ <i>Unidentified</i>
26	o_Hymenoptera; f_Orbiliaceae; g_ <i>Unidentified</i>
27	o_Sordariales; f_Chaetomiaceae; g_ <i>Unidentified</i>
28	o_Hypocreales; f_Clavicipitaceae; g_ <i>Unidentified</i>
29	o_Pezizales; f_Pyronemataceae; g_ <i>Unidentified</i>
30	o_Pleosporales; f_Unidentified; g_ <i>Unidentified</i>