

Table S2. Representative strain information and GenBank accessions used in this study

Species	Strain	Plasti ctype	ITS	LSU	SSU	ACT	CAM	RPB1	RPB2	TEF1	TUB2	GAPDH
<i>Aaosphaeria</i> sp. 1	SFC20240812-M154	PP	PZ123936									
<i>Acrostalagmus luteoalbus</i>	SFC20240719-M005	HDPE	PZ123785									
<i>Albifimbria lateralis</i>	SFC20240812-M032	HDPE	PZ123825							PZ136128		
<i>Albifimbria verrucaria</i>	SFC20240812-M174	PP	PZ123941							PZ136129		
<i>Alternaria</i> sp. 1	SFC20240719-M010	HDPE	PZ123788						PZ136127	PZ136126		PZ136130
<i>Amorocoelophoma</i> sp. 1	SFC20240812-M086	LDPE	PZ123889	PZ162092	PZ162091				PZ136131	PZ136132		
<i>Apiospora</i> sp. 1	SFC20240812-M098	LDPE	PZ123896								PZ136133	
<i>Aspergillus awamori</i>	SFC20240719-M147	LDPE	PZ123881				PZ136141					
<i>Aspergillus clavatus</i>	SFC20240812-M048	HDPE	PZ123840				PZ136137					
<i>Aspergillus creber</i>	SFC20240719-M032	HDPE	PZ123798									
<i>Aspergillus fumigatus</i>	SFC20240812-M197	PP	PZ123951				PZ136145					
<i>Aspergillus lacticoffeatus</i>	SFC20240812-M148	PP	PZ123934				PZ136140					
<i>Aspergillus ochraceus</i>	SFC20240812-M161	PP	PZ123938				PZ136144					
<i>Aspergillus protuberus</i>	SFC20240719-M047	HDPE	PZ123808				PZ136135					
<i>Aspergillus</i> sp. 1	SFC20240812-M147	PP	PZ123933				PZ136143					
<i>Aspergillus sydowii</i>	SFC20240719-M048	HDPE	PZ123809				PZ136136					
<i>Aspergillus tubingensis</i>	SFC20240812-M096	LDPE	PZ123894				PZ136139					
<i>Aspergillus uvarum</i>	SFC20240812-M095	LDPE	PZ123893				PZ136138					
<i>Aspergillus versicolor</i>	SFC20240719-M027	HDPE	PZ123796				PZ136134					
<i>Aspergillus westerdijkiae</i>	SFC20240719-M006	HDPE	PZ123786				PZ136142					
<i>Beauveria brongniartii</i>	SFC20240812-M099	LDPE	PZ123897					PZ197393		PZ136123		
<i>Candida parapsilosis</i>	SFC20240812-M081	LDPE	PZ123884	PZ159300								
<i>Cladosporium magnoliigena</i>	SFC20240719-M116	LDPE	PZ123877			PZ166936						
<i>Cladosporium maltirimosum</i>	SFC20240812-M126	LDPE	PZ123903			PZ166935				PZ161603		
<i>Cladosporium marinisedimentum</i>	SFC20240812-M190	PP	PZ123949							PZ166942		
<i>Cladosporium marinum</i>	SFC20240812-M026	HDPE	PZ123822							PZ170378		
<i>Cladosporium parahalotolerans</i>	SFC20240812-M028	HDPE	PZ123823			PZ166937						
<i>Cladosporium proteacearum</i>	SFC20240719-M022	HDPE	PZ123794							PZ170379		

<i>Cladosporium pruni-salicina</i>	SFC20240719-M020	HDPE	PZ123793	PZ197394	PZ170380
<i>Cladosporium pseudocladosporioides</i>	SFC20240719-M018	HDPE	PZ123792	PZ166938	PZ170381
<i>Cladosporium punicae</i>	SFC20240719-M014	HDPE	PZ123789		PZ166943
<i>Cladosporium rectoides</i>	SFC20240719-M015	HDPE	PZ123790		PZ170382
<i>Cladosporium</i> sp. 1	SFC20240719-M016	HDPE	PZ123791		PZ170375
<i>Cladosporium</i> sp. 2	SFC20240719-M165	PP	PZ123916		
<i>Cladosporium</i> sp. 3	SFC20240719-M129	LDPE	PZ123878		PZ170376
<i>Cladosporium</i> sp. 4	SFC20240719-M172	PP	PZ123917		PZ170377
<i>Cladosporium</i> sp. 5	SFC20240812-M025	HDPE	PZ123821		PZ170383
<i>Cladosporium</i> sp. 6	SFC20240719-M174	PP	PZ123918	PZ166939	PZ170384
<i>Cladosporium</i> sp. 7	SFC20240719-M114	LDPE	PZ123876	PZ166940	PZ170385
<i>Cladosporium tenuissimum</i>	SFC20240719-M131	LDPE	PZ123879	PZ166941	PZ170386
<i>Cladosporium velox</i>	SFC20240719-M178	PP	PZ123919		PZ166944
<i>Cladosporium xanthochromaticum</i>	SFC20240719-M164	PP	PZ123915		PZ166945
<i>Clonostachys chloroleuca</i>	SFC20240719-M212	PP	PZ123930		
<i>Clonostachys linzhiensis</i>	SFC20240812-M193	PP	PZ123950		
<i>Clonostachys</i> sp. 1	SFC20240812-M097	LDPE	PZ123895		PZ158588
<i>Clonostachys</i> sp. 2	SFC20240812-M039	HDPE	PZ123832		
<i>Curvularia</i> sp. 1	SFC20240812-M189	PP	PZ123948		
<i>Curvularia</i> sp. 2	SFC20240812-M215	PP	PZ123957		
<i>Diaporthe unshiuensis</i>	SFC20240719-M085	LDPE	PZ123865		PZ158589
<i>Didymella</i> sp. 1	SFC20240719-M141	LDPE	PZ123880		
<i>Emericellopsis maritima</i>	SFC20240812-M030	HDPE	PZ123824	PZ158536	PZ158554
<i>Epicoccum catenisorum</i>	SFC20240812-M103	LDPE	PZ123899		PZ158591
<i>Epicoccum latusicollum</i>	SFC20240719-M009	HDPE	PZ123787	PZ158537	PZ158590
<i>Fusarium acuminatum</i>	SFC20240719-M002	HDPE	PZ123784		PZ158555
<i>Fusarium commune</i>	SFC20240812-M042	HDPE	PZ123835		PZ155120
<i>Fusarium cugenangense</i>	SFC20240812-M033	HDPE	PZ123826		PZ158556
<i>Fusarium elaeagni</i>	SFC20240719-M210	PP	PZ123929		PZ155127
<i>Fusarium fujikuroi</i>	SFC20240719-M213	PP	PZ123931		PZ155128
<i>Fusarium graminearum</i>	SFC20240719-M185	PP	PZ123921		PZ155125

<i>Fusarium humuli</i>	SFC20240719-M044	HDPE	PZ123805		PZ158557
<i>Fusarium jinanense</i>	SFC20240719-M154	PP	PZ123911		PZ155124
<i>Fusarium</i> sp. 1	SFC20240719-M204	PP	PZ123926		PZ155126
<i>Fusarium</i> sp. 10	SFC20240812-M044	HDPE	PZ123837		
<i>Fusarium</i> sp. 11	SFC20240719-M186	PP	PZ123922		
<i>Fusarium</i> sp. 12	SFC20240719-M187	PP	PZ123923		
<i>Fusarium</i> sp. 13	SFC20240812-M167	PP	PZ123939		
<i>Fusarium</i> sp. 14	SFC20240812-M220	PP	PZ123960		
<i>Fusarium</i> sp. 15	SFC20240719-M045	HDPE	PZ123806		
<i>Fusarium</i> sp. 16	SFC20240812-M034	HDPE	PZ123827		
<i>Fusarium</i> sp. 17	SFC20240812-M041	HDPE	PZ123834		PZ158558
<i>Fusarium</i> sp. 2	SFC20240719-M110	LDPE	PZ123873		
<i>Fusarium</i> sp. 3	SFC20240812-M170	PP	PZ123940		PZ155129
<i>Fusarium</i> sp. 4	SFC20240719-M108	LDPE	PZ123871		PZ155123
<i>Fusarium</i> sp. 5	SFC20240719-M057	LDPE	PZ123857		PZ155121
<i>Fusarium</i> sp. 6	SFC20240719-M079	LDPE	PZ123862		PZ155122
<i>Fusarium</i> sp. 7	SFC20240812-M037	HDPE	PZ123830		
<i>Fusarium</i> sp. 8	SFC20240812-M036	HDPE	PZ123829		
<i>Fusarium</i> sp. 9	SFC20240812-M043	HDPE	PZ123836		
<i>Fusicolla violacea</i>	SFC20240812-M074	HDPE	PZ123853		
<i>Geotrichum candidum</i>	SFC20240719-M082	LDPE	PZ123863	PZ146638	
<i>Gibellulopsis serrae</i>	SFC20240812-M212	PP	PZ123955	PZ146723	
<i>Graphium basitruncatum</i>	SFC20240812-M109	LDPE	PZ123900		
<i>Knufia epidermidis</i>	SFC20240812-M090	LDPE	PZ123892		
<i>Kodamaea ohmeri</i>	SFC20240719-M184	PP	PZ123920		
<i>Lecanicillium</i> sp. 1	SFC20240719-M001	HDPE	PZ123783		PZ136125
<i>Lichtheimia ornata</i>	SFC20240812-M053	HDPE	PZ123844		
<i>Marquandomyces marquandii</i>	SFC20240812-M151	PP	PZ123935		
<i>Metschnikowia</i> sp. 1	SFC20240812-M082	LDPE	PZ123885		
<i>Microascales</i> sp. 1	SFC20240812-M088	LDPE	PZ123891		
<i>Mucor</i> sp. 1	SFC20240719-M189	PP	PZ123924	PZ158381	
<i>Mucor takensis</i>	SFC20240812-M051	HDPE	PZ123843	PZ158380	

<i>Neodidymella thailandica</i>	SFC20240719-M113	LDPE	PZ123875					
<i>Neofusicoccum</i> sp. 1	SFC20240719-M111	LDPE	PZ123874				PZ158559	
<i>Neopestalotiopsis camelliae-oleiferae</i>	SFC20240719-M107	LDPE	PZ123870				PZ158560	PZ158592
<i>Neopestalotiopsis clavispora</i>	SFC20240812-M141	LDPE	PZ123907				PZ158561	PZ158593
<i>Neosetophoma</i> sp.1	SFC20240812-M213	PP	PZ123956					
<i>Neptunomyces litoralis</i>	SFC20240812-M049	HDPE	PZ123841					
<i>Neptunomyces soli</i>	SFC20240719-M054	HDPE	PZ123811	PZ146853	PZ146866		PZ158538	PZ158562
<i>Nigrograna hydei</i>	SFC20240812-M185	PP	PZ123945					PZ158566
<i>Nigrograna kunmingensis</i>	SFC20240812-M186	PP	PZ123946					PZ158567
<i>Nigrograna locuta-pollinis</i>	SFC20240812-M087	LDPE	PZ123890					PZ158563
<i>Nigrograna</i> sp. 1	SFC20240812-M124	LDPE	PZ123902					PZ158565
<i>Nigrograna</i> sp. 2	SFC20240812-M184	PP	PZ123944					PZ158564
<i>Paraconiothyrium brasiliense</i>	SFC20240812-M083	LDPE	PZ123886					
<i>Paraconiothyrium cyclothyrioides</i>	SFC20240812-M050	HDPE	PZ123842					PZ158594
<i>Paraconiothyrium</i> sp. 1	SFC20240812-M058	HDPE	PZ123846					PZ158595
<i>Paramyrothecium sinense</i>	SFC20240812-M040	HDPE	PZ123833					PZ158596
<i>Paraphaeosphaeria sporulosa</i>	SFC20240812-M179	PP	PZ123943					
<i>Paraphoma</i> sp. 1	SFC20240812-M080	LDPE	PZ123883					
<i>Penicillium acidum</i>	SFC20240812-M006	HDPE	PZ123813					PZ158597
<i>Penicillium asterineum</i>	SFC20240812-M013	HDPE	PZ123815					PZ158598
<i>Penicillium brasilianum</i>	SFC20240812-M116	LDPE	PZ123901					PZ158599
<i>Penicillium brevicompactum</i>	SFC20240719-M038	HDPE	PZ123801					PZ158600
<i>Penicillium cairnsense</i>	SFC20240719-M069	LDPE	PZ123859					PZ158601
<i>Penicillium citrinum</i>	SFC20240719-M028	HDPE	PZ123797					PZ158602
<i>Penicillium crustosum</i>	SFC20240719-M041	HDPE	PZ123803					PZ158603
<i>Penicillium echinulatum</i>	SFC20240812-M005	HDPE	PZ123812					PZ158604
<i>Penicillium exsudans</i>	SFC20240812-M019	HDPE	PZ123817					PZ158605
<i>Penicillium fusisporum</i>	SFC20250408-M001	PP	PV707061					PV737705
<i>Penicillium ibericum</i>	SFC20240719-M198	PP	PZ123925					PZ158606
<i>Penicillium janczewskii</i>	SFC20240719-M046	HDPE	PZ123807					PZ158607
<i>Penicillium johnpittii</i>	SFC20240812-M128	LDPE	PZ123904					PZ158608

<i>Penicillium koreense</i>	SFC20240812-M038	HDPE	PZ123831				PZ158609
<i>Penicillium laevigatum</i>	SFC20240812-M178	PP	PZ123942				PZ158610
<i>Penicillium maximae</i>	SFC20240812-M199	PP	PZ123953				PZ158611
<i>Penicillium nudgee</i>	SFC20250408-M004	HDPE	PV707064			PV737712	PV737708
<i>Penicillium olsonii</i>	SFC20240719-M042	HDPE	PZ123804				PZ158612
<i>Penicillium oxalicum</i>	SFC20240812-M143	LDPE	PZ123908				PZ197395
<i>Penicillium pancosmium</i>	SFC20240719-M056	LDPE	PZ123856				PZ158613
<i>Penicillium paxilli</i>	SFC20240812-M012	HDPE	PZ123814				PZ158614
<i>Penicillium rotoruae</i>	SFC20240719-M036	HDPE	PZ123800				PZ158615
<i>Penicillium rudallense</i>	SFC20240719-M074	LDPE	PZ123860				PZ158616
<i>Penicillium</i> sp. 1	SFC20240812-M022	HDPE	PZ123818			PZ136124	PZ158617
<i>Penicillium</i> sp. 2	SFC20240719-M058	LDPE	PZ123858				PZ158618
<i>Penicillium steckii</i>	SFC20240719-M033	HDPE	PZ123799				PZ158619
<i>Penicillium sumatraense</i>	SFC20240719-M039	HDPE	PZ123802				PZ158620
<i>Penicillium taii</i>	SFC20250408-M006	PP	PV707066				PV737710
<i>Penicillium virgatum</i>	SFC20240812-M018	HDPE	PZ123816				PZ158621
<i>Penicillium westlingii</i>	SFC20240812-M047	HDPE	PZ123839				PZ158622
<i>Periconia</i> sp. 1	SFC20240812-M187	PP	PZ123947	PZ162087			
<i>Pestalotiopsis</i> sp. 1	SFC20240812-M064	HDPE	PZ123848			PZ158568	PZ158623
<i>Pestalotiopsis</i> sp. 2	SFC20240812-M035	HDPE	PZ123828			PZ158569	PZ158624
<i>Pestalotiopsis</i> sp. 3	SFC20240719-M208	PP	PZ123928				PZ158625
<i>Pichia fermentans</i>	SFC20240719-M150	PP	PZ123909				
<i>Podila horticola</i>	SFC20240719-M077	LDPE	PZ123861				
<i>Porostereum spadiceum</i>	SFC20240719-M083	LDPE	PZ123864				
<i>Pseudonectria foliicola</i>	SFC20240719-M205	PP	PZ123927				
<i>Pseudophaeosphaeria</i> sp. 1	SFC20240812-M084	LDPE	PZ123887				
<i>Pseudothyridariella</i> sp. 1	SFC20240812-M079	LDPE	PZ123882				
<i>Purpureocillium lilacinum</i>	SFC20240812-M077	HDPE	PZ123855				PZ158570
<i>Pyrenochaeta</i> sp. 1	SFC20240812-M023	HDPE	PZ123819	PZ162086	PZ162089	PZ161604	PZ161602
<i>Rhodotorula sphaerocarpa</i>	SFC20240812-M076	HDPE	PZ123854	PZ158849			
<i>Rhodotorula taiwanensis</i>	SFC20240719-M152	PP	PZ123910	PZ158850			
<i>Roussoella</i> sp. 1	SFC20240812-M024	HDPE	PZ123820				

<i>Roussoella</i> sp. 2	SFC20240812-M106	LDPE	N/A	PZ162090	PZ162088	PZ161605	PZ166946
<i>Sesquicillium</i> sp. 1	SFC20240812-M155	PP	PZ123937				
<i>Sporobolomyces carnicolor</i>	SFC20240812-M145	PP	PZ123932				
<i>Talaromyces pinophilus</i>	SFC20240812-M216	PP	PZ123958		PZ170435		PZ170436
<i>Talaromyces</i> sp. 1	SFC20240812-M085	LDPE	PZ123888		PZ161601		PZ170437
<i>Tolypocladium</i> sp. 1	SFC20240812-M046	HDPE	PZ123838				
<i>Trichoderma afroharzianum</i>	SFC20240812-M134	LDPE	PZ123905			PZ136118	
<i>Trichoderma capillare</i>	SFC20240719-M092	LDPE	PZ123867			PZ136122	
<i>Trichoderma guizhouense</i>	SFC20240812-M071	HDPE	PZ123852			PZ136116	
<i>Trichoderma hailarensense</i>	SFC20240719-M159	PP	PZ123914				
<i>Trichoderma hipposiderocola</i>	SFC20240719-M098	LDPE	PZ123869			PZ136109	
<i>Trichoderma insigne</i>	SFC20240719-M109	LDPE	PZ123872			PZ136112	
<i>Trichoderma nobilis</i>	SFC20240719-M155	PP	PZ123912			PZ136110	
<i>Trichoderma pseudoasperelloides</i>	SFC20240812-M066	HDPE	PZ123850			PZ136111	
<i>Trichoderma</i> sp. 1	SFC20240719-M089	LDPE	PZ123866				
<i>Trichoderma</i> sp. 2	SFC20240812-M065	HDPE	PZ123849			PZ136121	
<i>Trichoderma</i> sp. 3	SFC20240812-M069	HDPE	PZ123851			PZ136117	
<i>Trichoderma</i> sp. 4	SFC20240812-M135	LDPE	PZ123906			PZ136114	
<i>Trichoderma</i> sp. 5	SFC20240812-M057	HDPE	PZ123845			PZ136113	
<i>Trichoderma</i> sp. 6	SFC20240812-M063	HDPE	PZ123847			PZ136115	
<i>Trichoderma</i> sp. 7	SFC20240812-M219	PP	PZ123959			PZ136119	
<i>Trichoderma</i> sp. 8	SFC20240719-M094	LDPE	PZ123868			PZ171126	
<i>Trichoderma vadicola</i>	SFC20240719-M053	HDPE	PZ123810			PZ136108	
<i>Trichoderma virens</i>	SFC20240719-M157	PP	PZ123913			PZ136120	
<i>Trichothecium</i> sp. 1	SFC20240812-M102	LDPE	PZ123898	PZ162093			