

**Supplementary table 1a.** Number of IIS for different categories of Specific hosts.

<b>Vascular plants (Families)</b>	<b>Number of sequences</b>
Poaceae	2295
Pinaceae	1753
Orchidaceae	1009
Ericaceae	988
Fagaceae	659
Rosaceae	340
Fabaceae	312
Asteraceae	180
Salicaceae	176
Myrtaceae	168
Cupressaceae	129
Plantaginaceae	128
Betulaceae	111
Ophioglossaceae	91
Rubiaceae	89
Cannabaceae	75
Tiliaceae?	62
Smilacaceae	61
Lamiaceae	56
Brassicaceae	55
Taxaceae	49
Dipterocarpaceae	46
Moraceae	45
Meliaceae	44
Gentianaceae	39
Sapotaceae	38
Sapindaceae	37
Huperziaceae	37
Oleaceae	32
Annonaceae	31
Vitaceae	30
Solanaceae	26
Ranunculaceae	25
Melastomataceae	24
Malvaceae	24
Areaceae	22
Caryophyllaceae	20

Anacardiaceae	20
Amaranthaceae	20
Cornaceae	17
Lauraceae	16
Ginkgoaceae	15
Verbenaceae	13
Nyctaginaceae	12
Nothofagaceae	12
Iridaceae	12
Convulvulaceae	12
Actinidiaceae	12
Cyperaceae	11
Polygonaceae	10
Theaceae	9
Passifloraceae	9
Araliaceae	9
Sterculiaceae	8
Dioscoreaceae	8
Cucurbitaceae	8
Elaeagnaceae	7
Crassulaceae	7
Apiaceae	7
Alliaceae	7
Urticaceae	6
Combretaceae	6
Clusiaceae	6
Cistaceae	6
Cactaceae	6
Boraginaceae	6
Ruscaceae	5
Euphorbiaceae	5
Rutaceae	3
Proteaceae	3
Polygalaceae	3
Platanaceae	3
Phyllanthaceae	3
Papaveraceae	3
Myristicaceae	3
Juglandaceae	3
Hydrangeaceae	3

Connaraceae	3
Caprifoliaceae	3
Araucariaceae	3
Araceae	3
Aizoaceae	3
Pittosporaceae	2
Onagraceae	2
Musaceae	2
Cephalotaxaceae	2
Cecropiaceae	2
Casuarinaceae	2
Burseraceae	2
Bombacaceae	2
Bignoniaceae	2
Apocynaceae	2
Agavaceae	2
Vochysiaceae	1
Ulmaceae	1
Thymelaeaceae	1
Siparunaceae	1
Simaroubaceae	1
Scrophulariaceae	1
Rhamnaceae	1
Pontederiaceae	1
Polemoniaceae	1
Podocarpaceae	1
Piperaceae	1
Opiliaceae	1
Marantaceae	1
Ebenaceae	1
Celastraceae	1
Asparagaceae	1
Aleuritideae	1
Adoxaceae	1
<b>Sub total</b>	<b>9695</b>
<b>Non-vascular plants (Divisions)</b>	
Marchantiophyta	99
Bryophyta	15
<b>Sub total</b>	<b>114</b>

<b>Fungi</b>	
Non lichenized fungi	19
Lichenized fungi	10
<b>Sub total</b>	<b>29</b>
<b>Animalia (Classes)</b>	
Insecta	407
Coleoptera	182
Isoptera	116
Lepidoptera	81
Demospongiae	79
Mammalia	50
Hemiptera	21
Arachnida	21
Anthozoa	21
Actinopterygii	10
Gymnolaemata	4
Secernentea	2
Sauropsida	2
Malacostraca	2
Trichoptera	2
Hymenoptera	2
Diptera	2
Stenolaemata	1
Maxillopoda	1
Orthoptera	1
<b>Sub total</b>	<b>600</b>
<b>Other substrates</b>	<b>19</b>
<b>Grand total</b>	<b>10457</b>

**Supplementary table 1b.** Number of FIS for different categories of Specific hosts.

<b>Vascular plants (Families)</b>	<b>Number of sequences</b>
Poaceae	1119
Pinaceae	751
Myrtaceae	695
Fabaceae	638
Rosaceae	420
Fagaceae	340
Asteraceae	300
Vitaceae	271
Solanaceae	261
Salicaceae	220
Ericaceae	160
Caryophyllaceae	134
Oleaceae	130
Betulaceae	125
Rutaceae	121
Brassicaceae	116
Rubiaceae	108
Cucurbitaceae	102
Euphorbiaceae	95
Sapindaceae	85
Anacardiaceae	82
Ranunculaceae	71
Plantaginaceae?	69
Annonaceae	61
Malvaceae	60
Amaranthaceae	56
Theaceae	55
Lauraceae	51

Sterculiaceae	51
Musaceae	46
Platanaceae	45
Lamiaceae	43
Apiaceae	42
Chenopodiaceae	40
Ruscaceae	39
Cyperaceae	37
Proteaceae	37
Araceae	31
Convolvulaceae	29
Orchidaceae	27
Cupressaceae	25
Juglandaceae	25
Moraceae	24
Alliaceae	22
Combretaceae	22
Actinidaceae	21
Ulmaceae	21
Liliaceae	20
Iridaceae	19
Nothofagaceae	19
Podocarpaceae	19
Araliaceae	18
Taxaceae	18
Agavaceae	15
Caprifoliaceae	15
Cornaceae	15
Adoxaceae	14
Arecaceae	14

Caricaceae	14
Hemerocallidaceae	13
Asparagaceae	12
Boraginaceae	12
Orobanchaceae	12
Grossulariaceae	11
Magnoliaceae	11
Polygonaceae?	11
Pontederiaceae	11
Rhamnaceae	11
Alismataceae	10
Lythraceae	10
Myrsinaceae	10
Paeoniaceae	10
Plumbaginaceae	10
Onagraceae	9
Apocynaceae	8
Davalliaceae/Dryopteridaceae	8
Juncaceae	8
Papaveraceae	8
Verbenaceae	8
Bixaceae	7
Malpighiaceae	7
Rhizophoraceae	7
Styracaceae	7
Altingiaceae	6
Celastraceae	6
Cistaceae	6
Dipsacaceae	6
Heliconiaceae	6

Hydrangeaceae	6
Melastomataceae	6
Meliaceae	6
Oxalidaceae	6
Santalaceae	6
Urticaceae	6
Violaceae	6
Balsaminaceae	5
Berberidaceae	5
Bigoniaceae	5
Campanulaceae	5
Cannabaceae	5
Clethraceae	5
Dioscoreaceae	5
Huperziaceae	5
Myricaceae	5
Scrophulariaceae?	5
Symplocaceae	5
Amarylidaceae	4
Bombacaceae	4
Eupteleaceae	4
Hamamelidaceae	4
Linaceae	4
Nyctaginaceae	4
Saxifragaceae	4
Valerianaceae	4
Acanthaceae	3
Alstroemeriaceae	3
Daphniphyllaceae	3
Ebenaceae	3



Geraniaceae	3
Loranthaceae	3
Piperaceae	3
Pittosporaceae	3
Polemoniaceae	3
Primulaceae	3
Sapotaceae	3
Simaroubaceae	3
Zingiberaceae	3
Araucariaceae	2
Auracariaceae	2
Buxaceae	2
Cactaceae	2
Calycanthaceae	2
Dilleniaceae	2
Elaeagnaceae	2
Equisetaceae	2
Eucommiaceae	2
Gentianaceae	2
Ginkgoaceae	2
Hyacinthaceae	2
Juncaginaceae	2
Myristicaceae	2
Nartheciaceae	2
Paulowniaceae	2
Phrymaceae	2
Phyllanthaceae	2
Restionaceae	2
Trapaceae	2
Typhaceae	2

Zygophyllaceae	2
Anarthriaceae	1
Asphodelaceae	1
Calceolariaceae	1
Capparceae	1
Casuaraniaceae	1
Cephalotaceae	1
Cercidophyllaceae	1
Chrysobalanaceae	1
Clusiaceae	1
Colchiaceae	1
Cunoniaceae	1
Dennstaedtiaceae	1
Dipterocarpaceae	1
Elaeocarpaceae	1
Eriocaulaceae	1
Erysiphaceae	1
Fouquieriaceae	1
Frankeniaceae	1
Fumariaceae	1
Griselinaceae	1
Haemodoraceae	1
Helwingiaceae	1
Hydnoraceae	1
Limnocharitaceae	1
Mackinlayaceae	1
Menispermaceae	1
Nitrariaceae	1
Oliniaceae	1
Passifloraceae	1

Pedaliaceae	1
Phyllanthaceae	1
Potamogetonaceae	1
Pteridaceae	1
Smilaceae	1
Sparrmanniaceae	1
Staphylaceae	1
Xanthorrhoeaceae	1
unknown	23
<b>Sub total</b>	<b>8056</b>
<b>Non-vascular plants (Divisions)</b>	
Bryophyta	7
<b>Sub total</b>	<b>7</b>
<b>Fungi</b>	
Non lichenized fungi	83
Lichenized fungi	8
<b>Sub total</b>	<b>91</b>
<b>Animalia (Classes)</b>	
Insecta	572
Coleoptera	351
Lepidoptera	108
Hymenoptera	78
Hemiptera	10
Diptera	10
unknown	5
Homoptera	3

Isoptera	3
Orthoptera	2
Trichoptera	2
Mammalia	341
Primates	236
Artiodactyla	44
Carnivora	31
Rodentia	19
Perissodactyla	7
Lagomorpha	2
Cetacea	1
Erinaceomorpha	1
Actinopterygii	20
Malacostraca	17
Arachnida	17
Phylactolemata	5
Secernentia (Nematode)	4
Anthozoa	4
Bivalvia	3
Aves	2
Branchiopoda	1
Cheilostomata	1
Entognatha	1
Adenophorea (nematode)	1
Demosporangiae	1
Oligochaeta	1
<b>Sub total</b>	<b>991</b>
<b>Other substrates</b>	<b>131</b>

<b>Grand total</b>	
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	<b>9276</b>
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**Supplementary table 2a.** Number of IIS per country.

<b>Country</b>	<b>Number of sequences</b>
USA	5081
Germany	1116
Finland	815
Japan	625
Norway	509
China	390
Italy	347
Estonia	319
United Kingdom	297
France	240
Austria	228
Sweden	227
Australia	218
Lithuania	201
Mexico	201
Switzerland	193
Hungary	190
Thailand	165
Spain	153
Puerto Rico	146
Panama	138
Turkey	128
Denmark	123
Ecuador	116
New Zealand	109
Poland	97
India	92
Namibia	92
Netherlands	75
Pacific Ocean	74
South Africa	69
Costa Rica	64
Israel	59
Argentina	51
Canada	51
Brazil	50
Gabon	50

Seychelles	50
Singapore	50
Viet Nam	47
Tanzania	42
South Korea	41
Russia	40
Guinea	39
Portugal	39
Zimbabwe	39
Czech Republic	37
Bulgaria	33
Iran	32
Greenland	29
Indonesia	28
Taiwan	28
Malaysia	22
Chile	20
Slovenia	20
Colombia	17
Guyana	17
Trinidad and Tobago	14
Papua New Guinea	13
Antarctica	10
Jamaica	10
Greece	9
Croatia	7
Ireland	6
Senegal	6
Uganda	6
French Guiana	5
Guatemala	5
Bhutan	4
Azerbaijan	3
Cyprus	3
Ghana	3
Reunion (France)	3
Slovakia	3
Syria	3
Bolivia	2
Cameroon	2

Cuba	2
Djibouti	2
Dominican Republic	2
Georgia	2
Jordan	2
Peru	2
Romania	2
Venezuela	2
Belgium	1
Belize	1
Cambodia	1
Cook Islands	1
Egypt	1
Equatorial Guinea	1
Guadeloupe (France)	1
Iceland	1
Kazakhstan	1
Lebanon	1
Madagascar	1
Morocco	1
Myanmar	1
Nepal	1
Nigeria	1
Pakistan	1
Palau	1
Philippines	1
Ukraine	1
Uruguay	1
Zambia	1
<b>Total</b>	<b>13923</b>



**Supplementary table 2b.** Number of FIS per country.

<b>Country</b>	<b>Number of sequences</b>
USA	2490
Japan	1659
China	1270
Sweden	919
Australia	875
Spain	839
Germany	704
France	627
Italy	618
United Kingdom	576
Canada	499
Mexico	488
Norway	424
Brazil	401
South Africa	367
Switzerland	334
Thailand	304
Finland	291
Austria	278
New Zealand	270
India	257
Lithuania	256
Costa Rica	215
Netherlands	205
Russia	180
Denmark	171
Czech Republic	168
Iran	162
Portugal	158
Colombia	156
Hungary	155
South Korea	145
Argentina	131
Taiwan	119
Poland	100
Indonesia	98
Venezuela	80
Slovenia	77

Antarctica	75
Israel	74
Belgium	70
Panama	62
Puerto Rico	62
Estonia	58
Ecuador	56
Malaysia	56
Chile	55
Nigeria	48
Greece	46
Viet Nam	46
Egypt	45
Bulgaria	43
Uganda	42
Greenland	39
Ethiopia	38
Uruguay	32
Turkey	31
Cuba	28
Bhutan	25
Ireland	25
Papua New Guinea	25
Ukraine	25
Zimbabwe	25
Kenya	24
Slovakia	23
Peru	22
Guyana	21
Romania	21
Cameroon	20
Tanzania	18
Malawi	17
Namibia	17
Philippines	15
Saudi Arabia	15
Zambia	15
Sri Lanka	14
Iceland	13
Martinique	13

Mozambique	13
New Caledonia	13
Guadeloupe (France)	12
Democratic Republic of the Congo	11
Kuwait	11
Nepal	11
Bolivia	10
Croatia	10
Luxembourg	10
Oman	10
Azerbaijan	9
Botswana	9
Guatemala	9
Jamaica	9
Latvia	9
Madagascar	9
Republic of the Congo	9
Armenia	8
Dominican Republic	8
Honduras	8
Hong Kong	8
Morocco	8
Singapore	8
Gabon	7
Suriname	7
Cambodia	6
Ghana	6
Pakistan	6
Syria	6
Andorra	5
Burundi	5
Cyprus	5
Guinea	5
Kazakhstan	5
Paraguay	5
Reunion	5
Senegal	5
Belize	4
Benin	4
Cote d'Ivoire	4

Djibouti	4
East Timor	4
French_Guiana	4
Seychelles	4
Svalbard	4
Trinidad and Tobago	4
Uzbekistan	4
Yugoslavia	4
Dominica	3
Fiji	3
Kyrgyzstan	3
Laos	3
Mauritius	3
Qatar	3
Tunisia	3
Yemen	3
Angola	2
Bahamas	2
Cook Islands	2
El Salvador	2
Faroe Islands	2
Jordan	2
Mongolia	2
Myanmar	2
Niger	2
Saint Lucia	2
Serbia	2
Turkmenistan	2
United Arab Emirates	2
Afghanistan	1
Aruba	1
Bangladesh	1
Falkland Islands	1
French Southern and Antarctic Lands	1
Jersey	1
Lebanon	1
Mali	1
Montenegro	1
Rwanda	1
Solomon Islands	1

South Georgia and the South Sandwich Islands (Britain)	1
Swaziland	1
Tajikistan	1
Virgin Islands	1
<b>Total:</b>	<b>18874</b>

a.

b.

c.

d.

Figure 3. Schematic illustration of the web service and the links between its respective pages. (a) The genus search main page with the genus search function. (b) The list of the fungal genera and the number of insufficiently identified fungal ITS sequences they constitute the best BLAST match for. (c) An example of

the output of a genus search and the detailed presentation of each insufficiently identified sequence. **(d)** The FASTA format view of the output of a genus search. **(e)** Table detailing the distinct studies that the insufficiently identified sequences originate from. **(f)** Table detailing the studies that the fully identified sequences constituting the best BLAST matches originate from. **(g)** Table detailing the separate species in the genus that form the best BLAST match of at least one insufficiently identified sequence.