

CDF Checklist of Galapagos Phytopathogenic Fungi

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This checklist is automatically generated using Version 3.0 of the online database CDF Galapagos Species Checklist.

Pathogens known to cause diseases of Galapagos plants included in this checklist are so-called **phytopathogenic fungi**. Strictly speaking some are not true fungi, but have a similar growth form and ecology as true fungi. Some phytopathogenic fungi are endemic to Galapagos infecting only endemic or native plants. *Uredo scalesiae* for example is a rust fungus described from the endemic plant genus *Scalesia*. However, with the introduction of a wide variety of food crops new species of phytopathogenic fungi have also arrived in the archipelago.

These newly introduced species are often rather host specific, adapted to infect a particular plant species only. Generalists are relatively rare but have the potential to cause significant damage among the native flora. Even species expected not switch hosts can potentially be problematic: if they were introduced with a host plant that is a close relative of a Galapagos native it is possible that these pathogens may also infect the native species. Native species that were protected against diseases by the extreme geographical isolation of the archipelago are thus now subjected to new pathogens. Nevertheless, specific pathogens that only infect a particular plant can potentially be also very useful. If these species only infect a particular invasive plant they could potentially be used as a very effective biological control agent for this particular invasive species.

Currently a rust fungus is being investigated for biological control of the extremely invasive blackberry (*Rubus nivea*), a plant that is one of the worst transformers of the natural vegetation of the Galapagos highlands. This checklist of phytopathogenic fungi does not include other plant pathogens or parasites: Viruses, protozoans and bacteria that infect plants remain largely unknown, and invertebrates feeding on plants, although often also causing significant damage, are not necessarily parasites of a single host species only. Their ecological role is generally more complex. Some species for example have larvae that are plant parasites, but their adults no longer feed on the host plant.

For marine species distribution data cited in the CDF Galapagos Checklists refer to the five main bioregions of the archipelago (Far Northern, Northern, Western, South Eastern and the Elithabeth Bay Bioregion). For the terrestrial species the more than 120 islands, islets and small rocks have been aggregated into Islands Groups, thus, for example, the island group "Santa Cruz" includes smaller islands like Santa F6, Plaza Norte, Plaza Sur, Baltra, Daphne Mayor, Daphne Minor, and others.

Please be aware that the distribution data presented here is automatically generated from specimen records and does not always accurately reflect the known distribution for all species.

IUCN red-list assessments presented here may deviate from the global IUCN list for the following reasons:

- for well known species groups like vascular plants or vertebrates updates proposed to the IUCN are shown instead of the outdated, but currently accepted status;
- for poorly known species groups (e.g., lichenized fungi) a general assessment is currently not possible and the list presented here is a regional red-list list for Galapagos archipelago.

Names of taxa included in this checklist: 80 (43 Accepted , 32 Unidentified Taxon , 2 Doubtful , 3 Preliminary Identification).

Origin of the taxa included: 15 Accidental, 12 Cultivated, 20 Endemic, 25 Indigenous, 1 Questionable Endemic.

1. *Actinocymbe sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
2. *Alternaria brassicae* (Berk.) Sacc.
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Lewia
Origin: Introduced, Accidental.
Galapagos Distribution: San Cristóbal.
References: Kirk, P. (ed.) et al. (2010).
3. *Asperisporium caricae* (Speg.) Maubl.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Isabela, Santa Cruz.
4. *Camillea obularia* (Fr.) Laessøe, J.D. Rogers Lodge
Taxon status: Identification not yet confirmed.
Galapagos Distribution: Santa Cruz.
5. *Cercoseptoria sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
6. *Cercospora apii* Fresen.
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Introduced, Cultivated.
Galapagos Distribution: Floreana, Isabela.
References: Kirk, P. (ed.) et al. (2010).
7. *Cercospora sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
References: Kiener, L.C. et al. (1834-70).
8. *Cercospora sp. 2*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Indigenous.
Galapagos Distribution: Unknown.
9. *Cerotelium fici* (Castagne) Arthur
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.

- Galapagos Distribution:** Santa Cruz.
10. *Conocarpus ingae* (Syd.) Cummins
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
 11. *Chaetothyrium sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
 12. *Cladosporium sphaerospermum* Penz.
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Davidiella
Origin: Native, Indigenous.
Galapagos Distribution: Isabela, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
 13. *Claviceps sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Galapagos Distribution: Unknown.
 14. *Coniothyrium sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Leptosphaeria
Origin: Native, Endemic.
Galapagos Distribution: Isabela.
References: Kirk, P. (ed.) et al. (2010).
 15. *Corynespora sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Corynesporasca
Origin: Introduced, Accidental.
Galapagos Distribution: Isabela, San Cristóbal.
References: Kirk, P. (ed.) et al. (2010).
 16. *Fusarium cf. oxysporum* Schldl.
Taxon status: The identification of this taxon or its occurrence in Galapagos is doubtful.
Index Fungorum: anamorphic Gibberella
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
 17. *Fusicoccum sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Diaporthe
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
 18. *Glomerella cingulata* (Stoneman) Spauld. H. Schrenk
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: Isabela.
 19. *Gnomonia sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Introduced, Cultivated.
Galapagos Distribution: Santa Cruz.

20. *Hemileia vastatrix* Berk. Broome
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: San Cristóbal, Santa Cruz.
21. *Julella aviceniae* (Borse) K.D. Hyde
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
IUCN Red List: Data Deficient.
Galapagos Distribution: San Cristóbal.
22. *Kordyana celebensis* Gäum.
Taxon status: Accepted name; taxon occurs in Galapagos.
possibly a synonym but nomen nudum?: *Kordyana cubensis*
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
References: Barreto, R. W. et al. (1988).
23. *Lembosia sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Questionable Endemic.
Galapagos Distribution: Santa Cruz.
24. *Meliola sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: San Cristóbal, Santa Cruz.
25. *Microsphaera diffusa* Cooke Peck
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana, San Cristóbal.
26. *Mycosphaerella cruenta* Latham
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: Isabela.
27. *Mycosphaerella fijiensis* M. Morelet
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: San Cristóbal.
28. *Mycosphaerella heningsii* Sivan.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: Isabela.
29. *Mycosphaerella musicola* R. Leach ex J.L. Mulder
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: San Cristóbal.
30. *Mycosphaerella sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Indigenous.
Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.
31. *Mycosphaerella tassiana* (De Not.) Johanson
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: Isabela.

32. *Mycovellosiella fulva* (Cooke) Arx
Taxon status: Accepted name; taxon occurs in Galapagos.
 Index Fungorum: anamorphic Mycosphaerella
Origin: Introduced, Cultivated.
Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
33. *Mycovellosiella sidarum* (Petr. Cif.) Deighton
Taxon status: Accepted name; taxon occurs in Galapagos.
 Index Fungorum: anamorphic Mycosphaerella
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
34. *Mycovellosiella sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
 Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Endemic.
Galapagos Distribution: Floreana, Isabela, San Cristóbal.
References: Kirk, P. (ed.) et al. (2010).
35. *Neottiosporina sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
 Index Fungorum: anamorphic Pezizomycotina
Origin: Native, Indigenous.
Galapagos Distribution: Isabela.
References: Kirk, P. (ed.) et al. (2010).
36. *Oidium conspersum* (Link) Linder
Taxon status: Accepted name; taxon occurs in Galapagos.
 anamorphic state of Botryobasidium conspersum J. Erikss.
Galapagos Distribution: Santa Cruz.
37. *Oidium sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
 Index Fungorum: anamorphic Erysiphe
Origin: Native, Endemic.
Galapagos Distribution: San Cristóbal.
References: Kirk, P. (ed.) et al. (2010).
38. *Passalora boldoae* (N. Pons) U. Braun, Crous N. Pons
Taxon status: Accepted name; taxon occurs in Galapagos.
 Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
39. *Passalora cf. iochromatis* (Pat.) U. Braun
Taxon status: The identification of this taxon or its occurrence in Galapagos is doubtful.
 Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
40. *Passalora sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: Unknown.
41. *Passalora sp. 2*
Taxon status: Taxon not identified to species, subspecies, form or variety.

- Origin:** Native, Endemic.
Galapagos Distribution: Floreana, Isabela, Santa Cruz.
42. *Periconia byssoides* (Petch) Samson, W. Gams H.C. Evans
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Pleosporales
Origin: Native, Indigenous.
Galapagos Distribution: Isabela.
References: Kirk, P. (ed.) et al. (2010).
43. *Periconia manihoticola* (Vincens) Viégas
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Pleosporales
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
44. *Phoma sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Pleosporales; P. Cannon: not identical with the *Phoma sp.* on *C. papaya* in Brasil
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana, Isabela, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
45. *Phoma sp. 2*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Pleosporales; P. Cannon: this species is not the anamorph of *Leptosphaeria sacchari*, a common pathogen on sugar
Origin: Introduced, Accidental.
Galapagos Distribution: Unknown.
References: Kirk, P. (ed.) et al. (2010).
46. *Phoma sp. 3*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Pleosporales
Origin: Introduced, Accidental.
Galapagos Distribution: Unknown.
References: Kirk, P. (ed.) et al. (2010).
47. *Phylacia globosa* Lév.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
Galapagos Distribution: Isabela.
48. *Phyllachora noblei* Chardón
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz.
49. *Phyllachora sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: Española, Floreana, Isabela, San Cristóbal, Santa Cruz.
50. *Phyllachora tragliae* (Berk. M.A. Curtis) Sacc.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Isabela.
51. *Phyllachora winteri* Sacc. P. Syd.
Taxon status: Accepted name; taxon occurs in Galapagos.

- Origin:** Native, Indigenous.
Galapagos Distribution: Floreana, San Cristóbal, Santa Cruz.
52. *Phyllactinia dalbergia* Piroz.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
53. *Phyllosticta hiratsukae* Togashi
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Guignardia
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
54. *Phyllosticta sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Guignardia
Origin: Native, Endemic.
Galapagos Distribution: Santa Fé.
55. *Pseudocercospora meibomia* (Chupp) Deighton
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
56. *Pseudocercospora purpurea* (Cooke) Deighton
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Introduced, Accidental.
Galapagos Distribution: San Cristóbal, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
57. *Pseudocercospora rhizophorae* (Creager) U. Braun R.F. Castañeda
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Isabela.
References: Kirk, P. (ed.) et al. (2010).
58. *Pseudocercospora sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, San Cristóbal.
References: Kirk, P. (ed.) et al. (2010).
59. *Pseudocercospora trichophila* (Davis) U. Braun
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, Isabela.
References: Kirk, P. (ed.) et al. (2010).
60. *Pseudocercospora triumfettae* (Syd.) Deighton
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Indigenous.
Galapagos Distribution: Isabela.

References: Kirk, P. (ed.) et al. (2010).

61. *Pseudoperonospora cubensis* (Berk. M.A. Curtis) Rostovzev
Taxon status: Identification not yet confirmed.
Origin: Introduced, Cultivated.
Galapagos Distribution: San Cristóbal.
62. *Puccinia lantanae* Farl.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana.
63. *Puccinia melanocephala* Syd. P. Syd.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Cultivated.
Galapagos Distribution: Santa Cruz.
64. *Puccinia mogiphanis* Arthur
Taxon status: Identification not yet confirmed.
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
65. *Puccinia sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz.
66. *Ramulariopsis gossypii* (Speg.) U. Braun
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Native, Endemic.
Galapagos Distribution: Floreana.
References: Kirk, P. (ed.) et al. (2010).
67. *Schizothyrium rufulum* (Berk. M.A. Curtis) Arx
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
68. *Sclerococcum sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Pezizomycotina
Galapagos Distribution: San Cristóbal, Santa Cruz.
69. *Sepedonium sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Index Fungorum: anamorphic Hypomyces
Galapagos Distribution: Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
70. *Septoria lantanae* Garman
Taxon status: Accepted name; taxon occurs in Galapagos.
Index Fungorum: anamorphic Mycosphaerella
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana.
References: Kirk, P. (ed.) et al. (2010).
71. *Septoria sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana, Isabela.
References: Kirk, P. (ed.) et al. (2010).

72. *Stilbella sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
 Index Fungorum: anamorphic Hypocreales
Galapagos Distribution: Isabela.
References: Kirk, P. (ed.) et al. (2010).
73. *Stomiopeltis sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
74. *Taeniolella sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
 Index Fungorum: anamorphic Glyphium
Galapagos Distribution: Isabela, Santa Cruz.
75. *Uredo scalesiae* Bonar
Taxon status: Accepted name; taxon occurs in Galapagos.
 Index Fungorum: anamorphic Pucciniales
Origin: Native, Endemic.
Galapagos Distribution: Floreana, Isabela, Santa Cruz.
References: Kirk, P. (ed.) et al. (2010).
76. *Uredo sp. 1*
Taxon status: Taxon not identified to species, subspecies, form or variety.
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
77. *Uromyces bidenticola* Arthur
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
Galapagos Distribution: Santa Cruz.
78. *Uromyces dolichosporus* Dietel Holw.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Indigenous.
Galapagos Distribution: Floreana, Santa Cruz.
79. *Vestergrenia multipunctata* (G. Winter) Arx E. Müll.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
80. *Xylaria cubensis* (Mont.) Fr.
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.

References:

1. Barreto, R. W., Evans, H. E. (1988) *Taxonomy of a fungus introduced into Hawaii for biological control of Ageratina riparia (Eupatorieae; Compositae), with observations on related weed pathogens*. Transactions of the British Mycological Society 91(1): 81-97
2. Kiener, L.C. (1834-70) *Species général et iconographie des coquilles vivantes ... (continué par ... P. Fischer), vols. 1-11, livr. 1-165*. Paris.
3. Kirk, P. (ed.) (2010) *Index Fungorum*. CABI Bioscience, CBS and Landcare Research, available online at www.indexfungorum.org.