

U.S. Department of Agriculture, Agricultural Research Service

Systematic Mycology and Microbiology Laboratory - Nomenclature Fact Sheets

February 19, 2013

Fungi on Mango in India, but not found in the U.S.A.

Discosia hiptages occurs on leaves of various trees including mango (*Mangifera indica*), and is reported only from India. *Macrophoma mangiferae* occurs primarily on leaves, but also on stems and fruit, especially when stored. It is reported in the literature as occurring only in India, but has been intercepted in shipments from Nigeria (BPI 360207, 360208) and Mexico (BPI 1107979).

Cytosphaera mangiferae is another disease-causing fungus on mango in India not reported as occurring in the U.S.A. *Hendersonia creberrima* occurs on ripe fruit, causing a fruit rot. It has been reported only from India. Reports from South Africa are erroneous. A fungus from South Africa which Sutton & Dyko (1989) later found to be *Neoscytalidium dimidiatum* (as *Nattrassia mangiferae*) was misidentified as *Hendersonia creberrima* by Brodrick & van der Westhuizen (1976) resulting in some confusion. Johnson (1994) reported *H. creberrima* as a synonym of *Dothiorella mangiferae*, which has been transferred to *Neofusicoccum* as *Neofusicoccum mangiferae* (Crous et al. 2006). *Neoscytalidium dimidiatum* has been reported from the U.S.A. *Neofusicoccum mangiferae*, a synonym of *Dothiorella mangiferae*, has not been reported from the U.S.A.

See below for nomenclature reports for these fungi.

Discosia hiptages Tilak 1960 (Ascomycetes, Incertae sedis)

Notes: The type was not available for examination, but based on the description, Subramanian (1974) and Nag Raj (1993) felt that it is doubtful that this is a *Discosia*.

Distribution: Asia (India).

Substrate: Living leaves.

Host: Trees of multiple plant families, including *Mangifera indica* (mango, Anacardiaceae), and *Psidium guajava* (guava, Myrtaceae).

Supporting Literature:

Nag Raj, T.R. 1993. Coelomycetous anamorphs with appendage-bearing conidia. Mycologue Publications, Waterloo, Ontario, 1101 pages.

Subramanian, C.V., and Chandra-Reddy, K.R. 1974. The genus *Discosia* I. Taxonomy. Kavaka 2: 57-89.

Verified By: Erica On Mar 28, 2006

Macrophoma mangiferae Hing. & Sharma 1957 [1956] (Ascomycetes, Dothideales)

Notes: The genus *Macrophoma* is not currently in use; it has been placed in synonymy with *Sphaeropsis*. This species should be reclassified.

Distribution: Asia (India).

Substrate: Living leaves, rarely stems, fruit.

Disease Note: Leaf spot, blight. Stem lesions are uncommon but may girdle the stem. Fruit rot rarely occurs in nature, but commonly develops under storage.

Host: *Mangifera indica* (mango, Anacardiaceae).

Supporting Literature:

Hingorani, M.K., Sharma, O.P., and Sohi, H.S. 1960. Studies on blight disease of mango caused by *Macrophoma mangiferae*. Indian Phytopathol. 13: 137-143.

Mathur, R.S. 1979. The Coelomycetes of India. Bishen Singh Mahendra Pal Singh, Delhi, India., 460 pages.

Verified By: Erica On Mar 29, 2006

Cytosphaera mangiferae Died. 1916 (Ascomycetes, Incertae sedis)

≡*Aplosporella mangiferae* (Died.) Petr. & Syd. 1926 [1927] Note: Originally published as *Aplosporella*, but *Haplosporella* is a common orthographic variant.

Variant spelling *Haplosporella mangiferae* (Died.) Petr. & Syd. 1926 [1927]

Notes: Teleomorph is an unnamed *Cryptodiaporthe* sp. (Johnson 1992).

Distribution: Africa (Guinea), Australia, Asia (Malaysia, Pakistan, India, Papua New Guinea).

Substrate: Living leaves. Less commonly on twigs, stems, branches, fruit.

Disease Note: Leaf spot; less commonly associated with twig die back, stem and limb canker, and stem end rot of fruit.. Endophyte.

Host: *Mangifera indica* (Anacardiaceae) and other trees from multiple plant families.

Supporting Literature:

Johnson, G.I., and Hyde, K.D. 1992. *Cytosphaera mangiferae*. I.M.I. Descr. Fungi Bact. 1122: 1-2.

Sutton, B.C. 1980. The Coelomycetes. Fungi Imperfecti with Pycnidia, Acervuli and Stromata. Commonwealth Mycological Institute, Kew, Surrey, England : 696.

Verified By: Drew On Jan 14, 2011

Hendersonia creberrima Syd., P. Syd. & E.J. Butler 1916 (Ascomycetes, Pleosporales)

Notes: According to Sutton & Dyko (1989), the soft brown rot of mango from South Africa described by Brodrick & van der Westhuizen as *H. creberrima* is actually *Fusicoccum dimidiatum* (as *Natrassia mangiferae*). The genus *Hendersonia* is in need of revision; placement of this species requires reexamination.

Distribution: Asia (India, type).

Substrate: Ripe fruit.

Disease Note: Fruit rot. This is not the same as the soft brown rot of mango reported from South Africa (≠*Fusicoccum dimidiatum*, see Sutton & Dyko 1989, Farr et al. 2005).

Host: *Mangifera indica* (mango, Anacardiaceae)

Supporting Literature:

Brodrick, H.T., and van der Westhuizen, G.C.A. 1976. *Hendersonia creberrima*, the cause of soft brown rot of mango in South Africa. Phytophylactica 8: 13-15.

Farr, D.F., Elliott, M., Rossman, A.Y., and Edmonds, R.L. 2005. *Fusicoccum arbuti* sp. nov. causing cankers on Pacific madrone in western North America with notes on *Fusicoccum dimidiatum*, the correct name for *Scytalidium dimidiatum* and *Natrassia mangiferae*. Mycologia 97: 730-741.

Sutton, B.C., and Dyko, B.J. 1989. Revision of *Hendersonula*. Mycol. Res. 93: 466-488.

Verified By: Erica On Mar 29, 2006

Potentially confused with *Hendersonia creberrima*:

Neoscytalidium dimidiatum (Penz.) Crous & Slippers 2006 (Incertae sedis, Incertae sedis)

≡ *Torula dimidiata* Penz. 1882 Note: Year changed from 1887.

≡ *Fusicoccum dimidiatum* (Penz.) D.F. Farr 2005

≡ *Scytaalidium dimidiatum* (Penz.) B. Sutton & Dyko 1989

= *Exosporina fawcettii* E.E. Wilson 1947 Note: As 'fawcetti'.

= *Hendersonula toruloidea* Nattrass 1933

Distribution: Cosmopolitan (common in tropical countries).

Substrate: Leaves, branches, fruit, seeds, stems. *Scytaalidium*-like anamorph also on human skin and nails.

Disease Note: Gummosis, dieback, branch wilt, decline, leaf spot, tip rot, canker.

Host: Woody plants in various families.

Supporting Literature:

Crous, P.W., Slippers, B., Wingfield, M.J., Rheeder, J., Marasas, W.F.O., Philips, A.J.L., Alves, A., Burgess, T., Barber, P., and Groenewald, J.Z. 2006. Phylogenetic lineages in the Botryosphaeriaceae. *Stud. Mycol.* 55: 235-253.

Farr, D.F., Elliott, M., Rossman, A.Y., and Edmonds, R.L. 2005. *Fusicoccum arbuti* sp. nov. causing cankers on Pacific madrone in western North America with notes on *Fusicoccum dimidiatum*, the correct name for *Scytaalidium dimidiatum* and *Nattrassia mangiferae*. *Mycologia* 97: 730-741.

Slippers, B., Johnson, G.I., Crous, P.W., Coutinho, T.A., Wingfield, B.D., and Wingfield, M.J. 2005. Phylogenetic and morphological re-evaluation of the *Botryosphaeria* species causing diseases of *Mangifera indica*. *Mycologia* 97: 99-110.

Sutton, B.C., and Dyko, B.J. 1989. Revision of *Hendersonula*. *Mycol. Res.* 93: 466-488.

Verified By: Drew On Mar 17, 2008

Also potentially confused with *Hendersonia creberrima*:

Neofusicoccum mangiferae (Syd. & P. Syd.) Crous, Slippers & A.J.L. Phillips 2006 (Incertae sedis, Incertae sedis)

Variant spelling *Neofusicoccum mangiferum* (Syd. & P. Syd.) Crous, Slippers & A.J.L. Phillips 2006

≡ *Dothiorella mangiferae* Syd. & P. Syd. 1916

≡ *Nattrassia mangiferae* (Syd. & P. Syd.) B. Sutton & Dyko 1989

≡ *Fusicoccum mangiferum* (Syd. & P. Syd.) Johnson, Slippers, & M.J. Wingf. 2005

= *Hendersonula agathidis* P.A. Young 1948

= *Hendersonula cypria* Nattrass 1937

= *Fusicoccum eucalypti* Sousa da Câmara 1929

Distribution: Africa, Asia (India, Pakistan), Europe (Cyprus), Oceania (Australia), South America (Uruguay).

Disease Note: Root and stem rot, leaf cast.

Host: *Agathis spp.* (Araucariaceae), *Dioscorea rotundata* (Dioscoreaceae), *Eucalyptus grandis*

(Myrtaceae), *Mangifera indica* (Anacardiaceae), *Manihot esculenta* (Euphorbiaceae), *Prunus armeniaca* (Rosaceae).

Supporting Literature:

Crous, P.W., Slippers, B., Wingfield, M.J., Rheeder, J., Marasas, W.F.O., Philips, A.J.L., Alves, A., Burgess, T., Barber, P., and Groenewald, J.Z. 2006. Phylogenetic lineages in the Botryosphaeriaceae. *Stud. Mycol.* 55: 235-253.

Sutton, B.C., and Dyko, B.J. 1989. Revision of *Hendersonula*. *Mycol. Res.* 93: 466-488.

Verified By: Drew On Mar 17, 2008

Also potentially confused with *Hendersonia creberrima*:

Botryosphaeria dothidea (Moug. : Fr.) Ces. & De Not. 1863 (Ascomycetes, Dothideales)

≡ *Sphaeria dothidea* Moug. : Fr. 1823

= *Botryosphaeria berengeriana* De Not. 1863 [1864]

= *Physalospora suberumpens* Ellis & Everh. 1897

Alternate State (Anamorph): *Fusicoccum aesculi* Corda

Notes: Slippers et al. (2004) selected an epitype, and demonstrated that *Botryosphaeria ribis* and *Botryosphaeria parva* are distinct species. *Botryosphaeria berengeriana* f. sp. *pyricola* Kogan & Sakuma is morphologically identical but causes distinct disease symptoms. Some authors consider it a taxonomic synonym, see EPPO 1993 p. 420-421.

Distribution: Cosmopolitan.

Substrate: Twigs, branches, foliage.

Disease Note: Canker, stem blight, dieback.

Host: Woody plants in multiple families.

Verified By: Drew On Mar 27, 2008

Fusicoccum aesculi Corda 1829

= *Sphaeria coronillae* Desm. 1840 Note: Synonymy based on Pennycook & Samuels 1985

≡ *Macrophomopsis coronillae* (Desm.) Petr. 1924

≡ *Fusicoccum coronillae* (Desm.) Vanev & Aa 2002

≡ *Macrophoma coronillae* (Desm.) Höhn. 1910

≡ *Dothiorella coronillae* (Desm.) Petr. 1963

= *Phyllosticta divergens* Sacc. 1891 Note: Synonym of *Fusicoccum coronillae* based on van der Aa 2002.

Alternate State (Teleomorph): *Botryosphaeria dothidea* (Moug. : Fr.) Ces. & De Not.

Distribution: Cosmopolitan.

Substrate: Twigs, branches, foliage.

Disease Note: Canker, stem blight, dieback.

Host: Woody plants from various families.

Supporting Literature:

Pennycook, S.R., and Samuels, G.J. 1985. *Botryosphaeria* and *Fusicoccum* species associated with ripe fruit rot of *Actinidia deliciosa* (kiwifruit) in New Zealand. Mycotaxon 24: 445-458.

Slippers, B., Crous, P.W., Denman, S., Coutinho, T.A., Wingfield, B.D., and Wingfield, M.J. 2004. Combined multiple gene genealogies and phenotypic characters differentiate several species previously identified as *Botryosphaeria dothidea*. Mycologia 96: 83-101.

Slippers, B., Johnson, G.I., Crous, P.W., Coutinho, T.A., Wingfield, B.D., and Wingfield, M.J. 2005. Phylogenetic and morphological re-evaluation of the *Botryosphaeria* species causing diseases of *Mangifera indica*. Mycologia 97: 99-110.

Smith, I.M., McNamara, D.G., Scott, P.R., and Harris, K.M., Eds. 1992. Quarantine Pests for Europe. CAB International with EPPO, 676 pages.

Verified By: Erica On Oct 05, 2005

Also potentially confused with *Hendersonia creberrima*:

Dothiorella dominicana Petr. & Cif. 1930 (Ascomycetes, Dothideales)

Notes: Teleomorph is a *Botryosphaeria* sp. The type species of *Dothiorella* has been transferred to *Diplodia*; the status of remaining species in *Dothiorella* requires reevaluation. According to Slippers et al. (2005), most reports of *Dothiorella dominicana* on mango actually refer to *Fusicoccum parvum* Pennycook & Samuels 1985 (teleomorph *Botryosphaeria parva* Pennycook & Samuels 1985). Slippers et al. argue that *Dothiorella dominicana* may be synonymous with *Fusicoccum parvum*, but the type is ambiguous; in contrast, Johnson (1992) places *Dothiorella dominicana* in synonymy with *Fusicoccum aesculi* Corda 1829 (teleomorph *Botryosphaeria dothidea* (Moug.:Fr.) Ces. & De Not. 1863).

Distribution: Central America (Dominican Republic, type). Reports on mango trees in Australia are *Fusicoccum parvum* (Slippers et al. 2005). Presence in South America (Brazil), North America (USA:FL), Asia (China), and Africa (South Africa) should be confirmed.

Substrate: Fruits, flowers, leaves, twigs.

Disease Note: In association with other fungi, causes mango decline; bud necrosis, tip dieback, gummosis, and vascular discoloration.

Host: *Mangifera indica* (Anacardiaceae).

Supporting Literature:

Slippers, B., Johnson, G.I., Crous, P.W., Coutinho, T.A., Wingfield, B.D., and Wingfield, M.J. 2005. Phylogenetic and morphological re-evaluation of the *Botryosphaeria* species causing diseases of *Mangifera indica*. Mycologia 97: 99-110.

Verified By: Erica On Nov 30, 2005

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