

U.S. Department of Agriculture, Agricultural Research Service

Systematic Mycology and Microbiology Laboratory - Nomenclature Fact Sheets

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Rosellinia necatrix Prill. 1902 (Ascomycetes, Xylariales)

Variant spelling *Rosellinia necatrix* Prill. 1902 Note: Transcription error? Spelling used by APHIS.

Alternate State (Anamorph): *Dematophora necatrix* R. Hartig

Notes: Saccardo described the teleomorph of this fungus under the name *Rosellinia desmazieresii* (Berk. & Broome) Sacc. 1878 but did not explicitly exclude the type of the basionym, *Sphaeria desmazierii* Berk & Broome 1852. As such, the name *Rosellinia desmazieresii* refers to the fungus described by Berk. & Broome (Art. 7.4), not to the fungus now referred to as *Rosellinia necatrix* (see Petrini 1992). Hartig (1883) speculated based on conidial morphology that the teleomorph of *Dematophora necatrix* might belong in *Rosellinia* or a closely related genus. Berlese (1892) reinforced these speculations but did not formally describe the teleomorph. Prillieux (1902) originally published the name as *Rosellinia necatrix* without any other authors listed, but in 1904 used the author attribution (R. Hart.) Berlese. The name is sometimes erroneously cited as *Rosellinia necatrix* Berl. ex Prill. 1904. Teleomorphic type material is not extant; Petrini (1992) chose not to designate a neotype because he could not locate a specimen on the original host. Francis (1985) suggested that *Rosellinia necatrix* could be considered a synonym of *Rosellinia bothrina* 1882, but this has not been widely adopted (see Petrini 1992, Nakamura et al. 2000).

Distribution: Cosmopolitan.

Substrate: Roots.

Disease Note: White root rot. A serious pathogen for various fruit and nut crops.

Host: Multiple plant families.

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***Dematophora necatrix* R. Hartig 1883**

≡ *Hypoxyylon necatrix* (R. Hartig) P.M.D. Martin 1976 Note: Not (Berl. ex Prill.) P.M.D. Martin 1968; invalid name, lacked basionym reference, no latin protologue. Anamorph in teleomorph genus (Art. 59.6).

≡ *Rhizomorpha necatrix* R. Hartig 1883 Note: Simultaneous publication of two alternate names based on conidial and rhizomorph morphology (see Art. 34.2).

= *Graphium desmazierii* Sacc. 1878 [1879] Note: Original orthography. Mistakenly described by Saccardo as the anamorph of *Rosellinia desmazierii* (Berk. & Broome) Sacc. 1878 (misapplied, see Petrini 1992).

Variant spelling *Graphium desmazieri* Sacc. 1878

Alternate State (Teleomorph): *Rosellinia necatrix* Prill.

Notes: Originally published as *Rhizomorpha (Dematophora) necatrix*, this is the type of the genus *Dematophora*. *Rhizomorpha necatrix* is also validly published, see Art. 34.2 allowing use of

alternative names previous to 1953. Petrini (1992) has selected a lectotype. According to Petrini (1992), the earliest description of this fungus was by Saccardo, as *Graphium desmazierii* Sacc. 1878. Saccardo erroneously assigned the teleomorph to *Rosellinia desmazierii* (Berk. & Broome) Sacc. 1878, a misapplication of the basionym *Sphaeria desmazierii* Berk. & Broome 1852. Petrini (1992) recommended that the specific epithet *necatrix* be retained for the anamorph of this fungus rather than the older epithet *desmazierii* due to the importance of *Dematophora necatrix* as a pathogen. In the absence of a conservation proposal, this is contrary to the principle of priority in the current Code.

Distribution: Cosmopolitan.

Substrate: Roots.

Disease Note: White root rot. A serious pathogen for various fruit and nut crops.

Host: Various plant families.

Internal Note: See R. Hartig (1883) p. 125 (in books) for publication of genus *Dematophora*. Possible nomenclatural synonyms: *Pleurographium necator* (R. Hartig) Goid. 1935 (based on *Graphium necator* (R. Hartig) Trav. (no year provided)). No other record of *Graphium necator* could be found; it is possible this name is based on *Dematophora necatrix* R. Hartig but it could not be confirmed. It is also possible that these are both invalid names.

Supporting Literature:

Francis, S.M. 1985. *Rosellinia necatrix* -- fact or fiction?. *Sydowia* 38: 75-86.

Nakamura, H., Uetake, Y., Arakawa, M., Okabe, N., and Matsumoto, N. 2000. Observations on the teleomorph of the white root rot fungus, *Rosellinia necatrix*, and a related fungus, *Rosellinia aquila*. *Mycoscience* 41: 503-507.

Petrini, L.E. 1992. *Rosellinia* species of the temperate zones. *Sydowia* 44: 169-281.

Sivanesan, A., and Holliday, P. 1972. *Rosellinia necatrix*. *C.M.I. Descr. Pathog. Fungi Bact.* 352: 1-2.

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According to Petrini (1992), the earliest description of the teleomorph of this fungus was provided by Saccardo under the new combination *Rosellinia desmazierii* (Berk. & Broome) Sacc. 1878, a misapplication of the basionym *Sphaeria desmazierii* Berk. & Broome 1852. As Saccardo did not explicitly exclude the type of the basionym, the name *Rosellinia desmazierii* must refer to the fungus described by Berk. & Broome ([Art. 7.4](#)), not to the fungus now referred to as *Rosellinia necatrix*.

The specific epithet *necatrix* was first applied to the anamorph of this fungus by Hartig in 1883, who published the name as *Rhizomorpha (Dematophora) necatrix*. The anamorph was given two alternative names by Hartig (1883), a practice that is permitted by the ICBN ([Art. 34.2](#)) in publications previous to 1953. Based on rhizomorph morphology, Hartig (1883) used the name *Rhizomorpha necatrix*, but parenthetically included *Dematophora*, apparently as an alternate genus (Hartig 1883, p. 95). On page 125 of the same publication, Hartig argued that the fungus did not fit in any existing conidial genus, and that its unique characters “nöthigt zur Aufstellung einer neuen Gattung, welche *Dematophora* (Büschelträger) genannt werden mag ...In hinflick....scheint mir der Artname *necatrix* angemessen zu sein”. (translated from the German: “require the establishment of a new genus, which may be named *Dematophora*...In looking back...the epithet *necatrix* seems appropriate to me”). As Hartig had originally been careful to include the new alternate genus in the original use of the name, it appears that he intentionally combined the genus *Dematophora* with *necatrix*, satisfying [Article 33.1](#), despite the fact that he used the name *Rhizomorpha necatrix* throughout the rest of the publication. *Dematophora necatrix* is the type of the genus *Dematophora*; the two were simultaneously validated (descriptio generico-specifica, [Art. 42.1](#)).

Hartig (1883) speculated, based on conidial morphology, that the teleomorph of *Dematophora necatrix* might belong in *Rosellinia* or a closely related genus, but was not able to observe production of perithecia to confirm his prediction. Viala (1891) was the first after Saccardo (1878) to observe perithecia, and Berlese (1892) drew upon Viala's observations to propose that the teleomorph was a *Rosellinia* sp. but did not formally propose a name. Prillieux (1902) was the first to publish the name *Rosellinia necatrix*, originally without attribution of the name to any other authors. In 1904 Prillieux cited the name as *Rosellinia necatrix* (R. Hart.) Berlese; as a result the name is sometimes cited in the literature as *Rosellinia necatrix* Berl. ex Prill. 1904, but, based on his original 1902 publication, the name should be *Rosellinia necatrix* Prill. 1902.

Martin (1968) transferred this fungus to the genus *Hypoxylon*, providing an English but no Latin description of the teleomorph. Because he failed to provide a full citation of the basionym, this name was invalid (ICBN [Art. 33.3](#); [Art. 36.1](#)). He later validated the name as *Hypoxylon necatrix* (R. Hartig) P.M.D. Martin 1976 based on *Rhizomorpha necatrix*. Because the basionym is an anamorph, and he failed to add a Latin description of the teleomorph, *Hypoxylon necatrix* must be considered an anamorphic name in a teleomorphic genus (permissible under ICBN [Art. 59.6, Ex. 4, 5, 7](#)).

Teleomorphic type material is not extant; Petrini (1992) chose not to designate a neotype because she could not locate a teleomorphic specimen on the original host. Based on examination of perithecia from a collection by Hanson et al. (1937), Francis (1985) suggested that *Rosellinia necatrix* was synonymous with *Rosellinia bothrina* (Berk. & Broome) Sacc. 1882, with basionym *Sphaeria bothrina* Berk. & Broome 1873 (see following entry). If this synonymy were accepted, the name *Rosellinia bothrina* would have priority, however, this has not been adopted by more recent authors (e.g. Petrini 1992, Nakamura et al. 2000).

Based on Saccardo's 1878 description of the anamorph, Petrini (1992) placed *Graphium desmazierii* Sacc. 1878 as a synonym of *Dematophora necatrix* Hartig 1883. Petrini (1992) recommended that the specific epithet *necatrix* be retained for the anamorph of this fungus rather than the older epithet *desmazierii* due to the importance of *Dematophora necatrix* as a pathogen. In anticipation of a proposal to conserve *Dematophora necatrix* Hartig 1883 against the synonym *Graphium desmazierii* Sacc. 1878, our nomenclature report retains the name *Dematophora necatrix*, following Petrini (1992).

Additional references:

Hartig, R. 1883. *Rhizomorpha (Dermatophora) necatrix* n. sp. –Untersuchungen aus dem Forstbotanischen Institut zu München III: 95-140.

Hansen, H.N., Thomas, H.E. & Thomas, H. Earl. 1937. The connection between *Dematophora necatrix* and *Rosellinia necatrix*. *Hilgardia* 10: 561-564.

Prillieux E. 1902. Les perithèces du *Rosellinia necatrix*. *Comptes-Rendus des Séances de l'Académie des Sciences, Paris*. Séance du 12 août 1902: 275-278.

Prillieux, E. 1904. Sur la dehiscence des perithèces du *Rosellinia necatrix* (R. Hart.) Berlese. *Bull. Soc. Mycol. Fr.* 20: 34-38.

Viala, P. 1891. Monographie du Pourridie (*Dematophora*). (Thèses présentées a la faculté des sciences de Paris). 124 p.

***Rosellinia bothrina* (Berk. & Broome) Sacc. 1882 (Ascomycetes, Xylariales)**

≡ *Sphaeria bothrina* Berk. & Broome 1873

= *Rosellinia arcuata* Petch 1916

Notes: Francis (1985) proposed that *Rosellinia necatrix* was a taxonomic synonym, but this has not been widely adopted.

Distribution: Africa, Asia, Papua New Guinea, South America (Brazil).

Substrate: Roots, stumps, dead wood.

Host: Various plant families.

Supporting Literature:

Francis, S.M. 1985. *Rosellinia necatrix* -- fact or fiction?. *Sydowia* 38: 75-86.

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(Not an APHIS regulated plant pest. Listed for comparison to *Rosellinia necatrix*).

Written by Erica Cline, December 2005