

Diversity of macro-fungi in Central India-XIV: *Amylosporus campbellii* causing root and rhizome rot of bamboo (*Dendrocalamus strictus*)

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Abstract

In the present article reports root and rhizome rot of bamboo (*Dendrocalamus strictus*) caused by a basidiomycetous macro-fungus, *Amylosporus campbellii*. The fungus is recorded from Panna, Madhya Pradesh.

Introduction

Genus *Amylosporus* Ryvarden belong to family Bondarzewiaceae, basidiomycete. The type species is *Amylosporus graminicola* (Murrill) Ryvarden. The genus contains 12 species that are widely distributed in tropical regions (Kirk et al., 2008). Out of them 6 species namely, *Amylosporus auxiliadora* Drechsler-Santos & Ryvarden, *Amylosporus casuarinicola* (Y.C. Dai & B.K. Cui) Y.C. Dai, Jia J. Chen & B.K. Cui, *Amylosporus efibulatus* (I. Lindblad & Ryvarden) Y.C. Dai, Jia J. Chen & B.K. Cui, *Amylosporus guaraniticus* Campi & Robledo, *Amylosporus rubellus* (Y.C. Dai) Y.C. Dai, Jia J. Chen & B.K. Cui and *Amylosporus succulentus* Jia J. Chen & L.L. Shen were recently reported (Indexfungorum page visited on 09/07/2018).

Recently *Amylosporus campbellii* was reported on teak from Jabalpur (Verma ety al., 2016). In the present article this macro-fungus is reported from central India causing rhizome rot in

Dendrocalamus strictus at Panna Tiger Reserve, Panna, Madhya Pradesh.

Materials and methods

Specimens were collected from Panna Tiger Reserve area, Panna, Madhya Pradesh, India. The slides were prepared in lactophenol and cotton blue and observed under advance Research Microscope, make Leica, Germany and photomicrographs were taken with the help of digital camera attached to the microscope. Identification of fungi was done with the help of literature (De 1991; Mohanan 1997; Tahir et al., 1992a, b; Tarafder et al., 2017; Tiwari et al. 2013; Verma ety al., 2016). The specimens were deposited in the Mycology Herbarium, Tropical Forest Research Institute, Jabalpur and got accession numbers.

Results and Discussion***Amylosporus campbellii* (Berk.)****Ryvarden** (Figures 1-7)

(Bondarzewiaceae, Russulales, Incertae sedis, Agaricomycetes, Agaricomycotina, Basidiomycota, Fungi)

=*Amylosporus graminicola* (Murrill)

Ryvarden, *Norw. Jl Bot.* **20**: 1 (1973)

=*Polyporus anthelminticus* Berk., *Gard. Chron.*, London: 753 (1866)

=*Polyporus campbellii* Berk., *Hooker's J. Bot. Kew Gard. Misc.* **6**: 228 (1854)

=*Polyporus graminicola* (Murrill) Murrill, *Mycologia* **7**(4): 215 (1915)

=*Polyporus mollitextus* Lloyd, *Mycol.*

Writ. **6**: 880 (1919)

=*Polyporus popanoides* Cooke, *Grevillea*

9(no. 51): 97 (1881)

=*Polyporus propinquus* Lloyd, *Mycol.*

Notes (Cincinnati) **7**: 1109 (1922)

=*Polyporus tisdalei* (Murrill) Murrill,

Lloydia **6**: 228 (1943)

=*Scutigera tisdalei* Murrill, *Lloydia* **6**: 227

(1943)

=*Tyromyces graminicola* Murrill, *Tropical*

Polypores: 21 (1915)

=*Wrightoporia campbellii* (Berk.)

Teixeira, *Revista Brasileira de Botânica*

15(2): 127 (1992)

Taxonomic Description

Fruitbody, annual, pileate, centrally to laterally stipitate, fan shaped, fleshy and more or less watery when fresh, becomes spongy, brittle and become light in weight on drying, 4-12 x 10-15 x 1.0-2.5cm. Pileus semicircular, velutinate, soft to touch, upper surface whitish with pink tint towards the base when fresh turn buff to ochraceous on maturity or drying, azonate,

uneven, smooth. Margin whitish to cream, entire, thick. Context white to ochraceous homogeneous, soft, 15mm thick. Hymenium creamish white to ochraceous-buff, poroid, pores, 2-4/mm, round to angular. Hyphal system dimitic, generative hyphae with wide lumen, thick walled, 1.5-3.0µm wide, hyaline, mostly with simple septa, thin walled, 3.0-5.0µm wide, skeletal hyphae pale golden yellow, unbranched, gleporus hyphae mostly confined to the context almost hyaline to yellowish with an oily to granular content 3.0-6.5 µm wide. Basidia: hyaline, clavate, with a basal clamp and four sterigmata (1-2.5µm long), 12.5-22.5 x 4.0-6.5µm. Basidiospore: ellipsoid to ovoid, thin-walled, smooth or with very fine warts, 2.5-5.0 x 1.5-3.0µm.

Collection examined: On living bamboo (*Dendrocalamus strictus*) clump and rhizome, Karnavat, Rest House, Panna Tiger Reserve, Panna, Madhya Pradesh, 20/7/2018, R.K. Verma, TF 4045.



Figure 1 *Amylosporus campbellii*: habit, developing young fruit-body



Figure 2-3 *Amylosporus campbellii*: mature fruit-bodies in habit

Discussion

Amylosporus campbellii was reported on 4 bamboos, *Bambusa bambos*, *Dendrocalamus longistachys*, *D. strictus* and *Thysrostachys olivani* from southern India (Mohanan 1997). It was also reported from Odisha (on ground from Puri), Tamil Nadu (on ground from Coimbatore), West Bengal (on ground and dead bamboo from Hooghly, 24 Parganas, Santiniketan and Burdwan) and

Maharashtra (on ground, Pune) (De 1091). Root and rhizome rot caused by *A. campbellii* growing on rhizome of *Dendrocalamus strictus* at Pariyat, Jabalpur, Madhya Pradesh was reported (Tahir et al., 1992a, b). It was also recorded growing solitary or in groups, on buried plant debris, on soil or upon cut stumps/ injured base of bamboos, at Tumbani, Birbhum, in West Bengal (Tarafder et al., 2017).

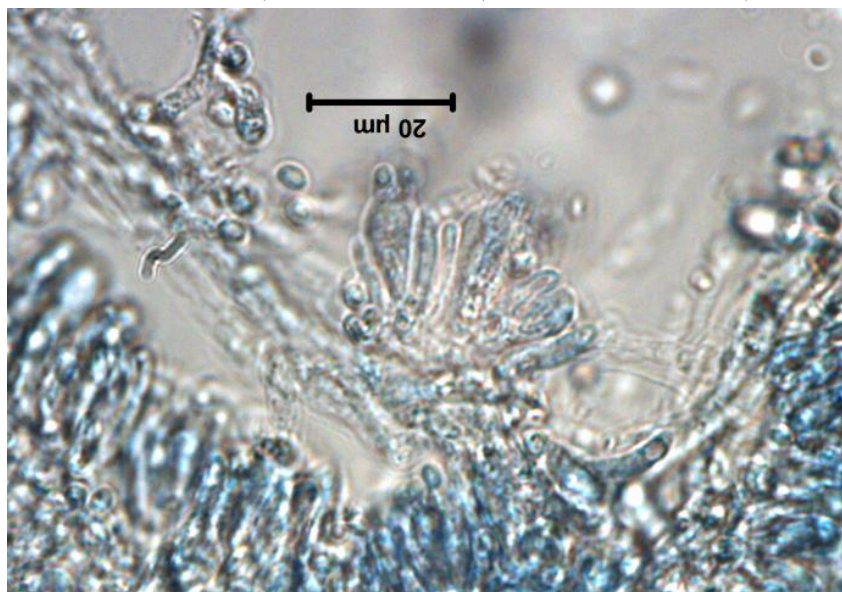


Figure 4 *Amylosporus campbellii*: hyphae and basidia attached with developing basidiospores

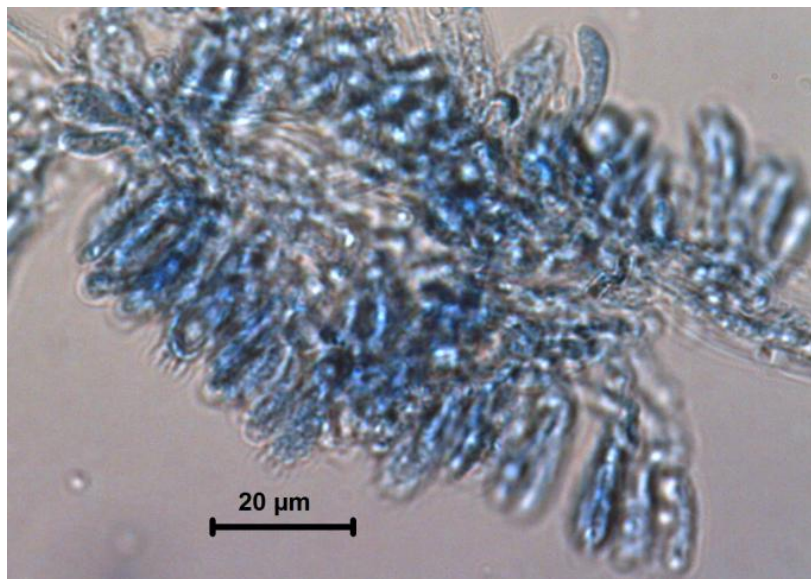


Figure 5 *Amylosporus campbellii*: hyaphae and basidia with sterigmata

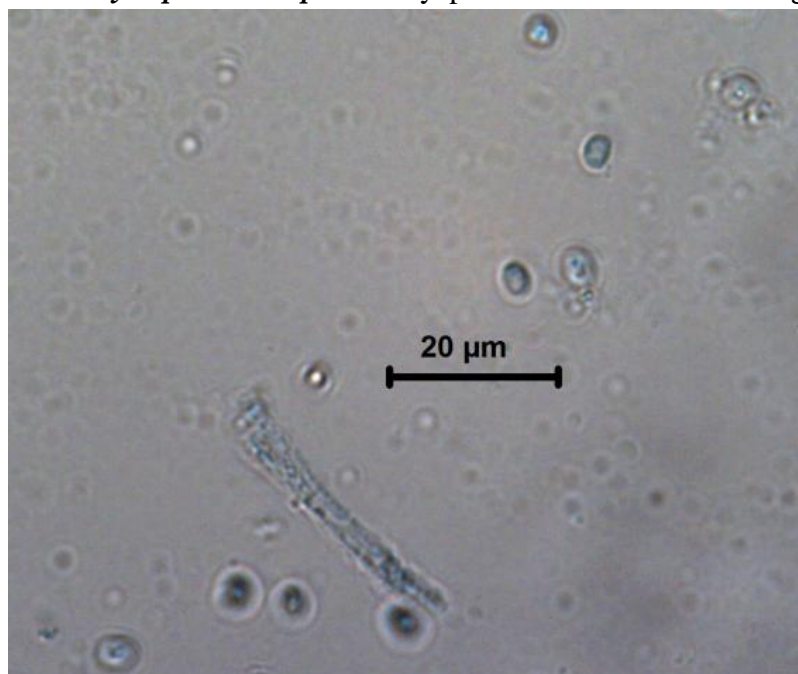


Figure 6 *Amylosporus campbellii*: basidiospores

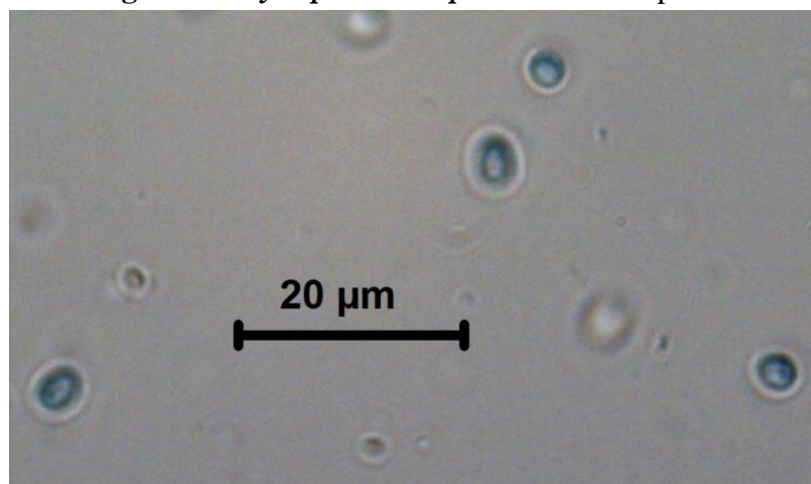


Figure 7 *Amylosporus campbellii*: basidiospores (enlarge)

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