



Fungal Planet 642 – 20 December 2017

Mutinus verrucosus T.S. Cabral, B.D.B. Silva, K. Hosaka, M.P. Martín & Baseia, *sp. nov.*

Etymology. In reference to the verrucose surface of the fertile portion of the pseudostipe.

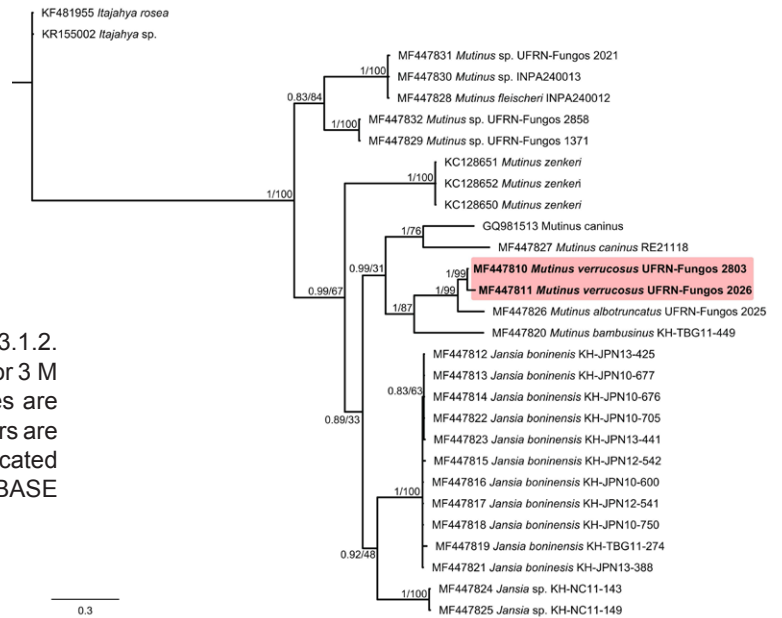
Classification — Phallaceae, Phallales, Agaricomycetes.

Unexpanded *basidiome* (egg) ovoid to pyriform, 11–18 mm high × 6–8 mm diam, epigeous. *Exoperidium* membranaceous, smooth, white to yellowish white (4A2), with white rhizomorphs at the base attached to the soil. *Endoperidium* with gelatinous content, hyaline. Expanded basidiome composed of a pseudostipe and volva. *Pseudostipe* cylindrical, 80 mm high × 6 mm diam, acuminate at the apex, hollow, spongy, apically perforated; sterile portion white at the bottom, becoming yellowish white (4A2) close to the fertile portion, chambered; fertile portion (receptacle) 22 mm high, reaching 1/3 of the total length of the pseudostipe, brownish red (9D6, 9E6), thick, obclavate but slightly truncate at the tip, with a pore at the apex, surface strongly verrucose. *Gleba* on the terminal portion of receptacle, mucilaginous, olive brown (4F3). *Pseudostipe* composed of pseudoparenchymatous cells, hyaline, irregular shaped, 20–57.5 × 18–47 µm. *Volva* formed by filamentous hyphae, septate, branched, hyaline, 2.6–4.5 µm diam. *Rhizomorphs* composed of filamentous hyphae, septate, hyaline, 1–5 µm diam, with crystals disposed in globose cells (14.5–50.5 × 17–50 µm). *Basidiospores* cylindrical, 4–5 × 2–2.5 µm [$x = 4.3 \pm 0.1 \times 2.4 \pm 0.6 \mu\text{m}$, $Q_m = 1.7$, $n = 20$], smooth, hyaline.

Typus. BRAZIL, Rio Grande do Norte, Baía Formosa, Reserva Particular do Patrimônio Natural Mata da Estrela, growing on soil, 2012, B.D.B. da Silva (holotype UFRN-Fungos 2026, ITS and LSU sequences GenBank MF447811 and MF447809, MycoBank MB822002).

Additional material examined. BRAZIL, Pará, Belterra, Floresta Nacional do Tapajós, 2014, T.S. Cabral, UFRN-Fungos 2803, ITS and LSU sequences GenBank MF447810 and MF447808.

Notes — *Mutinus verrucosus* is morphologically close to *M. proximus* and *M. penzigii*, due to the nature of the surface of the apical portion. There is little information on *M. proximus*, especially about the surface of the receptacle; however, it is different from *M. verrucosus* by having smaller basidiomata (up to 5 mm high), and the imperforate orange-red receptacle (Massee 1891). *Mutinus penzigii* was initially described based on a specimen registered as *Jansia elegans* from Java (Penzig 1899); this species is characterised by the peg-shaped processes on the surface of the receptacle (Lloyd 1909, Fischer 1910), which is different from the verrucose receptacle found in *M. verrucosus*. These species also differ in habitat: *M. penzigii* was found on rotten bamboo stems, while *M. verrucosus* is found on soil. Another morphologically similar species to *M. verrucosus* is *M. boninensis*, due to its white pseudostipe and brownish red receptacle perforated at the apex, but *M. boninensis* has an annulated surface of the apical portion (Lloyd 1909, Kobayasi 1937). On the other hand, *M. borneensis* resembles *M. verrucosus* with the white pseudostipe (Penzig 1899, Kibby 2015), but the apical portion surface is an irregular fragile network of variable meshes, and with brownish colour. Based on ITS nrDNA phylogenetic analyses, *M. verrucosus* is close to *M. albo-truncatus* with high support values (posterior probability = 1; bootstrap = 99 %); however, *M. albo-truncatus* has a pale brown receptacle with slightly verrucose surface and doliiform to cylindrical shape (Da Silva et al. 2015).



ITS nrDNA phylogenetic tree obtained with MrBayes v. 3.1.2. (Huelsenbeck & Ronquist 2001) under GTR+I+G model for 3 M generations. Both type and paratype of the new species are marked with a rectangle. The GenBank accession numbers are indicated before species names. Support values are indicated on the branches (posterior probabilities/bootstrap). TreeBASE submission ID 21112.

Colour illustrations. Brazil, Rio Grande do Norte, Baía Formosa, Reserva Particular do Patrimônio Natural Mata da Estrela (Photo: Rhudson H.S.F. Cruz). On top, apically perforated fertile portion and fresh basidiome of *Mutinus verrucosus* (UFRN-Fungos 2026 and UFRN-Fungos 2803); scale bars = 10 mm. On bottom, crystals disposed in globose cells (red arrow) found on rhizomorphs; hyphae of rhizomorphs; and spores; scale bars = 40, 20 and 10 µm, respectively.

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