Russula nigrovirens sp. nov. (Russulaceae) from southwestern China

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Abstract

A new species, Russula nigrovirens, with phenotypic similarities to R. virescens is proposed based on morphological and molecular data. Morphologically, R. nigrovirens is characterized by the combination of non-striate pileus with dull green patches, incurved margin, non-discolouring context, globose to subellipsoid basidiospores with bluntly conical to subcylindrical warts isolated or connected with irregular lines or ridges, and large, clavate basidia. Russula nigrovirens is placed in subgenus Heterophyllidia, subsection Cyanoxanthinae.

Key words: New taxon · Phylogeny · Russulales · Taxonomy

Introduction

The genus Russula Pers. (Russulaceae, Russulales, Basidiomycota) is a widely distributed genus containing about 750 species (Kirk et al. 2008) worldwide including 160 species in China (Song et al. 2007).

The Hengduan Mountains, situated in southwestern China, is one of the twenty five hotspots for biodiversity (Myers et al. 2000), and proves to be an area highly rich in macrofungi (Yang 2005). More than 70 species of Russula have been recorded from the region (Song et al. 2007, Wang et al. 2009). During a previous investigation of fungal resources of western Yunnan (Zhang et al. 2010), it was noticed that four particular collections were frequently mislabeled as R. virescens (Schaeff.) Fr. which was described and illustrated as a new species. To get an insight into the phylogenetic position of these morphologically similar species, sequences of the internal transcribed spacer (ITS) were analyzed jointly with sequences of closely related taxa within Russula subgenus Heterophyllidia Romagnesi emend. Sarnari.

Materials & methods

Sampling

Collections were obtained and photographed in the field during 2008–2010. Notes and photographs were taken for macro-morphological features and specimens were dried at 50 °C. Materials examined were deposited in the Herbarium of Cryptogams, Kunming Institute of Botany, Chinese Academy of Sciences (HKAS).

Morphological studies

Macromorphological characters were determined based on detailed field notes and photographs of fresh basidiomata. Descriptive terminology followed Vellinga (1988). Color designations were from Kornerup & Wanscher (1981). Ten percent FeSO₄ solution was used to test for chemical reactions on fresh specimens. For microscopic observations