**NEW SPECIES OF *Tephromela* (ASCOMYCOTA, TEPHROMELATACEAE) CHARACTERIZED BY A MOLECULAR AND CHEMICAL APPROACH**

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*Tephromela* is a genus of high ecological plasticity, found on different substrata in various habitats in most regions. Species have been assumed to exhibit high morphological and chemical variation, makes it difficult to properly delimit and recognize them, in particular in the *Tephromela atra* complex. However, an increasing amount of molecular data suggest a considerable degree of previously unrecognized speciation which does not appear to be cryptic, as these lineages may differ in substrate preferences, thallus configuration, ascospore dimensions, and/or secondary chemistry. The objective of this study was to assess the identify of *Tephromela* atra sensu lato in the Brazilian Northeast, using the fungal ITS barcoding marker. Morpho-anatomical characteristics of the material was studied with dissecting and compound microscopes, with hand-cut anatomical sections mounted in water. Secondary metabolites were analyzed with thin layer chromatography (TLC) run in solvent C. Genomic DNA was extracted, and the ITS regions was amplified, purified, and sent for sequencing. The obtained sequences were edited and aligned with sequences retrieved from Genbank, and a maximum likelihood tree was reconstructed. One sequence of a Brazilian specimen was recovered within a clade with three saxicolous, undescribed species from Peru and Africa. Despite the similarity with *Tephromela atra*, the latter is phylogenetically not closely related. The Brazilian material further differs in chemical and morphological characteristics, and in substratum. The results of this study show that there may be a large number of species among tropical *Tephromela*. Funding: CNPq.