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CULTURABLE DIVERSITY OF YEAST AND MOLD ISOLATED FROM BRAZILIAN STINGLESS BEE HONEY SAMPLES

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The bioprospection of fungi from unconventional food sources is of great interest because they may present novel and unique biotechnological characteristics of interest for application in food, feed, and pharmacy. In this sense, honey from stingless bees may be a rich source of microbial biodiversity due to its characteristics of water activity, acidity, and composition of carbohydrates. Moreover, the knowledge of the microbiota of honey from stingless has ecological and social importance since these insects are important pollinators to maintain the sustainable development of agriculture. To isolate and identify fungi from the honey of stingless bees. Five samples of honey from stingless bees of the species *Scaptotrigona postica*, *Scaptotrigona bipunctata*, and *Tetragonisca angustula* were collected at the Jataí Ecological Station, Luiz Antonio, São Paulo, Brazil. The samples were collected *in situ* (S 21° 37’ 0.03”; W 47° 45’ 0.55’’), taken to FCFRP – USP at room temperature, and analyzed within 24 hours. Sample sizes varied according to the amount available at the bee nest (ca. 50 g), and they were decimally diluted and homogenized by vortexing. The dilutions were spread plated on Dicloran Rose Bengal Chloramphenicol agar (Oxoid, UK) and incubated at 28°C for 5 days. Plates with 15 to 150 CFU were selected, and the isolates were purified on Potato Dextrose Agar (Oxoid, UK), with re-incubation at 28°C for 5 days. For micromorphological identification, yeasts were Gram-stained, and molds were stained with lactophenol cotton blue. The carbohydrate fermentation profiles of the isolates were determined, and slide microcultures were done when necessary. Besides, the molecular identification was performed by the Internal Transcribed Spacer (ITS) region of ribosomal DNA amplification and sequencing for 13 selected isolates. Some isolates were identified at species level, to know: *Wickerhamiella versatilis*, *Aureobasidium melanogenum*, *Starmerella etchellsii*, *Candida orthopsilosis*, *Diutina catenulata, Starmerella apicola*, and *Starmerella meliponinorum*. However, other isolates were identified only at the genus level: *Aureobasidium* sp., *Umbelopsis* sp., *Penicillium* sp., *Monascus* sp., and *Aspergillus* section nigri. According to the literature, many of these fungi present biotechnological potential, *e.g.*, for food fermentation, pigment production, and synthesis of nanoparticles, which will be further investigated in our project.

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