



Section: 04

MORPHOANATOMIC INVESTIGATION IN THE QUALITY CONTROL OF SPECIES THAT COMPOSE AYAHUASCA GOIANA

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Ayahuasca is an ethnobotanical beverage used in rituals, whose main constituents are the stem of the vine *Banisteriopsis caapi* and the leaves of *Psychotria viridis*¹. The correct botanical identification and verification of material purity are fundamental steps for the quality control and safety of plant-derived products². This work aimed to use a robust methodology of morphological and microscopic analysis, including scanning electron microscopy (SEM), for the authentication and differentiation of the powders of these two species. The material was collected in the region of Abadiânia, Goiás, and its *in situ* identification was performed by a responsible collector, based on distinctive morphological criteria such as the extrafloral nectaries in *B. caapi* and the domatia in *P. viridis*. The samples were subjected to controlled drying and pulverization. Analysis by light microscopy and histochemistry revealed details such as the arrangement of the parenchyma, stomata, and trichomes, highlighting the cellular differences between the species. The SEM of the powders complemented the observations, providing crucial ultrastructural data. The powder of *B. caapi* exhibited the morphology of woody fragments and calcium oxalate crystals, characteristic of the stem, in addition to allowing the observation of the conductive vessels in SEM. In contrast, the powder of *P. viridis* clearly revealed the cellular structure of the leaves and the morphology of the domatia trichomes, allowing a distinction between them. In conclusion, this study establishes pharmacognostic characterization parameters that contribute to the identification of *Banisteriopsis caapi* and *Psychotria viridis* powders. The microscopic and ultrastructural structures can be used as a morphological reference standard for quality control, preventing adulteration and contributing to the authenticity and safety of traditional ethnobotanical preparations.

Keywords: Ayahuasca, Quality Control, Scanning Electron Microscopy, *Banisteriopsis caapi*, *Psychotria viridis*.

¹METZNER, R. Ayahuasca: A Shamanic and a Scientific Perspective. *Journal of Psychoactive Drugs*, v. 34, n. 3, p. 275-279, 2002.

²MATOS, F. J. A. *Introduction to Experimental Phytochemistry*. Fortaleza: UFC Editions, 1988.

