Comparative study on essential oils of *Alpinia zerumbet* varieties

Aline de S. Ramos[1], Thamiris de A. de Souza[1], Ysis Madeira Dias[1], Thamiris A. L. de Oliveira[1], José Luiz P. Ferreira[1,2], Maria Athana Mpalantinos da Silva[1], Jefferson R. de A. Silva[3], Ana Claudia F. Amaral[1]

[1] Farmanguinhos, Fundação Oswaldo Cruz - Rio de Janeiro, Brazil
[2] Universidade Federal Fluminense, Rio e Janeiro, Brazil
[3] Universidade Federal do Amazonas, Departamento de Química, Manaus, AM, Brazil
alineramos@far.fiocruz.br

Keywords: Zingiberaceae, *Alpinia zerumbet*, essential oil, hydrodistillation, GC-MS.

Zingiberaceae family, the largest of Zingiberales order, consists of 53 genera and over 1,200 species native to tropical regions, especially Southern and Southeast Asia. Its leaves are long, wide, bright and have a characteristic aroma. Its essential oil is popularly used for anxiety problems, pain and hypertension (1,2). In this context, the aim of this study was to identify and compare the essential oil composition of the leaves of *Alpinia zerumbet* (Pers.) BL Burtt & RM Sm. and its variety *Alpinia zerumbet* var. *variegata*. *A. zerumbet* leaves were collected in 2012 and 2013 and *A. zerumbet* var. *variegata* leaves were collected in 2013, both from cultivated area in Rio de Janeiro. The essential oils were obtained by hydrodistillation with 4 L of water and 200 g of fresh leaves of both species in Clevenger apparatus. The extractions were performed in triplicate and the technique was considered satisfactory for obtaining the respective oils. All extracts were analyzed by gas chromatography coupled to a quadrupole mass spectrometer with ionization by electronic impact (70 eV), fitted with a DB-5MS column and helium as carrier gas. The GC oven program was as follows: 50 ºC to 290 ºC at 5 ºC /min. Interpretation and identification of the fragmentation mass spectrum was carried out by comparison with the Wiley NBS mass spectrum database. The comparison of the three essential oils showed similar qualitative profile. The major identified substances of both *A. zerumbet* essential oil were 4-terpineol (22%), 1,8-cineole (18%) and γ-terpinene (14%). The major constituents of *A. zerumbet* var. *variegata* essential oil were 1,8-cineole (39%), β-pinene (11%) and β-caryophyllene (10%). These results indicated that the species *A. zerumbet* and its botanical variety were considered chemically similar to those cultivated in other countries.

1. Cronquist, A. An integrated system of classification of flowering plants. Columbia University Press, New York, 1981.
2. Silva, F.L.A.; Oliveira, R.A.G.; Araújo, E.C. Rev. Enferm. UFPE on line, 2008, **2**, 9-16.

Acknowledgements: PIBIC/CNPq, Farmanguinhos-FIOCRUZ

ISBN: 978-85-66836-11-0