



Biochemical composition and sensory characteristics of infusions of leaves from two morphotypes of *Lippia multiflora* (verbenaceae) grown in Côte d'Ivoire

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ABSTRACT

Objectives: this study aims to compare composition and sensorial characteristics of infusions of leaves from broad leaf morphotype (blmLM) and long leaf morphotype (llmLM) of *Lippia multiflora* (Savannah tea) cultivated in three localities, in order to identify the morphotype and/or locality, which offer the better biochemical composition and organoleptic qualities of tea.

Methodology and results: Leaves harvested were dried and pulverized. Infusions were prepared using standard methods and sensorially analysed by Mossion methods. Elements were determined according to AOAC methods. Phenolics compounds and caffeine was analysed by a standard method. Infusions of blmLM are rich in tannins (12.15-14.26 mg/L), quercetin (0.33-0.95 mg/L) and flavanone (05.75-13.33 mg/L), while those of llmLM are rich in caffeine (19.07-20.14 mg/L) and catechin (08.89-59.56 mg/L). Calcium (50.96-51.54 mg/L) and magnesium (35.10-37.08 mg/L) contents are highest in infusions of BlmLM, while llmLM infusions are richer in K (97.78-103.46 mg/L) and Na (143.01-156.03 mg/L). Globally, infusions are brown to greenish yellow, astringent, slightly bitter with a pleasant smell. Infusions of Béoumi and Korhogo have a mint scent; those of Béoumi have a scent of lemongrass.

Conclusion and Application of results: The qualities of infusions depend on the morphotype and the growing area. Their richness in phenolic compounds, caffeine and essential minerals gives them nutritional, medicinal and pharmacological properties and can be a replacement for ordinary teas sold on the market. This study provides information on the choice of the plant morphotype and the cultivation area according to the needs of the consumer. Consumption of infusions of leaves from Korhogo and Béoumi that are richer in tannins, catechin, quercetin and essential minerals (calcium, magnesium and iron) will be beneficial for human nutrition, bones strengthening and prevention of cardiovascular diseases which represent a public health problem. Taking *Lippia multiflora* into account in the agricultural and eating habits of farmers will constitute for them a source of income and also a source of permanent raw material for the agro-food processing industries.

Keywords: *Lippia multiflora*, leaves infusion, biochemical composition, sensory characteristics