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Chemical composition and antibacterial activity of *Ageratina jahnii* and *Ageratina pichinchensis* essential oils collected in Mérida, Venezuela

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Statement of the Problem: *Ageratina* genus belongs to Asteraceae family and is distributed in Colombia, Ecuador, Guatemala, México, Panamá and Perú. In Venezuela are located at Amazonas, Aragua, Bolívar, Distrito Federal, Monagas, Zulia, Táchira, Mérida and Trujillo, mainly between 1000 to 3850 m.a.s.l. Species of this genus have been used in traditional medicine for the treatment of superficial mycosis, skin infections and wounds, as well as for its analgesic activity. Previous investigations have revealed anti-inflammatory, antiviral, antibacterial and larvicidal activities either in extracts or isolated compounds from different *Ageratina* species. Present investigation aims to compare the chemical composition and evaluate the antibacterial activity of essential oils of *A. jahnii* and *A. pichinchensis* collected from Mérida-Venezuela.

Methodology & Theoretical Orientation: Fresh leaves of each species were cut into small pieces and submitted to hydrodistillation for 4 h, using a Clevenger-type apparatus. The oils were dried over anhydrous sodium sulfate and stored at 4 °C. Gas chromatography-Mass spectrometry (GC-MS) analyses were carried out on a Hewlett Packard GC-MS system, model 5973. The identification of components was based on a Wiley MS data library (6th ed), followed by comparisons of MS data with published literature. The antimicrobial assay was carried out according to the disc diffusion method. MIC was defined as the lowest concentration that inhibited the visible bacterial growth.

Findings: Essential oil from leaves of *A. jahnii* (AJ) and *A. pichinchensis* (AP) yielded 0.50% and 0.43 % w/v, respectively. The major components identified in AJ were β -myrcene, α -pinene and limonene while for AP 8,9-epoxythymyl isobutyrate, germacrene-D, thymyl isobutyrate and enecalol were observed as main compounds. Essential oils showed antibacterial activity against *S. aureus* and *E. faecalis* with MIC values of 49.5 μ l/mL for AJ and 104 μ l/mL for AP.

Conclusion & Significance: Now days the study of antibacterial agents has become an important issue, due to the constant development of resistance from microorganisms to conventional antimicrobials. Consequently, search for new agents, those of plant origin must be emphasized, thus, results observed in this investigation might be of interest for the natural products research.

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