

CHEMICAL PROFILE OF THE ESSENTIAL OIL FROM *CROTON COMPRESSUS* (EUPHORBIACEAE) BY GC/MS AND GC/FID

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The Euphorbiaceae family includes about 300 genera, with *Croton* standing out for its ~1,300 species in tropical and subtropical regions, especially in Brazil. *Croton* species produce essential oils rich in monoterpenes, sesquiterpenes, and phenylpropanoids, with notable economic and pharmacological potential [1]. *Croton compressus*, native to Southeast Brazil, has no reported essential oil composition. This study aims to analyze its leaf oil to expand knowledge of the species and its potential bioactivity. The leaves of *Croton compressus* were collected in 2025 at Tijuca National Park, Rio de Janeiro. The essential oil were extracted from fresh and oven-dried leaves (72 h at 37 °C) and, in both cases, the plant materials were subjected in triplicate to hydrodistillation in a Clevenger apparatus for three hours. The oils were analyzed by GC/MS Agilent 6890N and GC/FID (Agilent 7820A GC with 5975C MSD) [2]. The components were identified by comparing their linear retention indices (IRL), obtained from n-alkane injections under the same conditions, and mass spectra with literature data [3]. Analyzing one of the triplicates in each case, 374.8 mg of essential oil (0.12% yield) were obtained from fresh leaves, with the main constituents being Bicyclogermacrene (8.6%), (Z) - α -trans-Bergamotol (6.9%), Germacrene D (5.9%), γ -Terpinene (5.5%), and Limonene (4.3%). From dried leaves, 677.7 mg were obtained (0.22% yield), with Bicyclogermacrene (7.1%), Germacrene D (5.1%), γ -Terpinene (5.4%), and 1,8-Cineole (5.3%) as the major constituents. Notably, in the oil from dried leaves, a compound accounting for 9.9% was detected as the major constituent, yet it has not been identified by the author. This same compound was also observed in the other triplicate analyses (from fresh and dried leaves) that have not yet been studied, remaining unidentified when compared with the available literature. As a future perspective, the complete characterization of the essential oil of *Croton compressus* is proposed, based on the comparison of the triplicates, aiming to broaden the understanding of this species and uncover the potential of its bioactive constituents.

Keywords: Essential oil, Chemical composition, Gas chromatography (GC), Mass spectrometry (MS)

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