Chemical composition of essential oils of Croton hirtus L'Her from Piauí (Brazil).

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Author(s): de Lima, S. G.; Medeiros, L. B. P.; Cunha, C. N. L. C.; Silva, D. da; de Andrade, N. C.; Neto, J. M. Moita; Lopes, J. A. D.; Steffen, R. A.; Araújo, B. Q.; Reis, F. de A. M.

Abstract:
The essential oils from the fresh leaves of Croton hirtus from two locations, Teresina and Simões in Piauí State, located in northeastern Brazil were obtained by hydrodistillation and analyzed by gas chromatography-flame ionization detection (GC-F1D) and gas chromatography-mass spectrometry (GC-MS) techniques and further confirmed by ¹H and ¹³C NMR. The main compounds found in the oil of the leaves from C. hirtus collected at Simões were spathulenol (26.7%), E-caryophyllene (10.0%), bicyclogermacrene (9.5%), α-cadinol (7.7%) and cubenol (7.0%). At Teresina, the harvest was carried out in two different months and in three periods of the day, and E-caryophyllene (27.9-37.3%), germacrene D (6.3-33.7%), α-cadinene (7.0-16.1%), δ-cadinene (1.8-13.5%) and α-humulene (3.6-4.6%) were identified as the major constituents. The brine shrimp (Artemia salina Leach) lethality bioassay, carried out to investigate the toxicity of the essential oils, showed 50% lethal concentration (LC₅₀) values of 11.24 and 11.85 ng/ mL for samples from Teresina and Simões, respectively.