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Chemical composition and yield of essential oil from three Croton species
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## Abstract

Marmeleiros are popularly known for the medicinal properties ascribed to their essential oils. This research aimed to analyze the essential oil of leaves from three Croton species (Croton argyrophylloides, Croton jacobinensis, and Croton sincorensis), to verify whether the daily time and harvest season in the year may interfere with their essential oils performance and composition. From each species, 1,500g of green leaves were harvested in Viçosa do Ceará - CE, at 6am and 12pm, during both dry and rainy seasons. Essential oil extraction was conducted by the method of water vapor drag and chemical profile was analyzed by gas chromatography-mass spectrometry (GC/MS). The highest yield was obtained at 12pm in the dry season for C. argyrophylloides and C. jacobinensis, and at 6am in the rainy season for C. sincorensis. Bicyclogermacrene demonstrated higher relative abundance in C. argyrophylloides (28.09 to 30.59%), C. jacobinensis (25.2 to 30.14%), and C. sincorensis (23.86 and 21.71%), and the only exception was at 6am in C. sincorensis, where (E)-caryophyllene was the most abundant compound (25.34%). The yield and composition of the studied species were influenced by rainfall, temperature, and sunlight, presenting statistical significant differences between the different periods studied. The species produce constituents with specific biological properties; and therefore, they can be used as a natural source.

## Keywords

Marmeleiro, euphorbiaceae, bicyclogermacrene, environmental influence, crotons.