



Chemical variability and antiphytopathogenic activity of essential oils from *Hymenaea courbaril* L. var. *courbaril* leaves (Fabaceae: Caesalpinioideae).

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The use of pesticides in agriculture is risky to human health and frequent damages the environment. Thus, the search for alternative methods on the control of plant pathogens is aimed in this study to evaluate the chemical variability and the antimicrobial activity of essential oil from leaves of *Hymenaea courbaril* L. var. *courbaril*, collected in four different phytophysiognomy of the Catimbau National Park, Pernambuco, Brazil. To obtain oils (I, II, III and IV), the hydrodistillation method was used in a Clevenger apparatus, and constituents were identified by GC/MS. The evaluation of the antimicrobial activity was performed using the microdilution broth method for determining the minimum inhibitory concentration (MIC) and bactericidal/ minimum fungicidal concentration (MBC/MFC). The microorganisms used were six phytopathogen bacteria: *Acidovorax citrulli* (DEPA 1.12), *Pectobacterium carotovorum* subsp. *carotovorum* (31 DEPA), *Ralstonia solanacearum* (DEPA CRM 10), *Xanthomonas campestris* pv. *campestris* (53 DEPA), *X. campestris* pv. *malvacearum* (DEPA 11.2.1), *X. campestris* pv. *viticola* (DEPA 137) and six phytopathogenic fungi: *Fusarium oxysporum*, *F. moniliforme*, *F. solani*, *Verticillium lecanii*, *Rhizopus stolonifer* and *Aspergillus flavus*. Temperature, relative humidity, amount of water and nutrients in the soil were analyzed in order to verify their influence on the collected samples. The oils showed yields of 0.86, 0.87, 1.32 and 1.45 % for samples I, II, III and IV, respectively. In GC/MS analyses, caryophyllene oxide, β -caryophyllene and junipene were the major compounds. All oils were effective for all tested microorganisms, being most active against bacteria *X. campestris* subsp. *malvacearum*, presenting MIC of 1.56 μ L/mL and MBC of 1.56 μ L/mL. For the fungi tested, the sample IV presented CIM of 12.5 μ L/mL and CFM of 12.5 μ L/mL against the *F. moniliforme*. The essential oil of *H. courbaril* is a potential source of biopesticide against the assessed pathogens. Other studies are needed to assess the safety of using this essential oil as biopesticide.

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