



Essential oils from male and female flowers of *Clusia hilariana* Schlecht (Clusiaceae)

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The large Neotropical genus *Clusia*, comprises more than 300 species and is distributed from southern Florida (Key West) to southern Brazil. Most of *Clusia* species have dioecious flowers (1). *Clusia hilariana* Schlecht occurs in the state of Rio de Janeiro, including at Restinga de Jurubatiba National Park (2). On the present study, we aim to evaluate chemical composition of volatile substances of essential oil obtained from male and female flowers of *Clusia hilariana*. Plant material was collected at Carapebus (RJ) and identified by the botanist Dr. Marcelo Guerra Santos. Extraction was performed using a Clevenger-type apparatus and both essential oils presented a clear slightly yellow aspect. Chemical analysis was performed by GC-MS/CG-FID analysis. The essential oils from male and female flowers yielded, respectively, 0.04 % and 0.06 %. In all, 40 components were identified. The major constituent found in both essential oils was (*E*-caryophyllene, corresponding to 49.7 % and 37.1 % of total composition of male and female flowers essential oils, respectively. The substances α -cubebene (0.5%), α -ylangene (0.2%), aromadendrene (0.2%), *cis*-muurola-4(14),5-diene (0.3%), δ -selinene (0.3%), *trans*- β -guaiene (1.4%), β -bisabolene (2.2%), γ -(*E*)-bisabolene (4.2%), selina-3,7(11)-diene (0.2%), α -calacorene (0.7%), gemacrene B (0.3%) and caryophyllenyl alcohol (0.2%) were found only in the essential oil from male flowers. The chemical composition of essential oil from female flowers of *C. hilariana* has not been previously described. β -elemene (0.7%), α -guaiene (2.3%), 4,5-di-*epi*-aristolochene (0.2%), α -selinene (8.5%), α -bulnesene (4.1%), 7-*epi*- α -selinene (0.3%), spathulenol (0.3%), globulol (0.6%), rosifoliol (0.5%), humulene epoxide II (0.7%), α -bisabolol (0.3%) and aristolone (0.3%) were identified as chemical constituents of this essential oil, but were not observed on the essential oil from male flowers. The high sesquiterpene content of both male and female essential oil from flowers may suggest that these complex volatile mixtures may play an important role as attractor for pollinators, and the presence of substances in both essential oils may contribute attracting the pollinator on the same level, it showing there is not a preference for male or female flowers by pollinators. Thus, the present study contributes to phytochemical and chemical ecology studies of *Clusia hilariana* species.

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