

Chemical composition and toxicity evaluation of essential oils of leaves and fruit peels of *Citrus aurantium* L. from Curuá, Pará, Brazil

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Citrus aurantium L. is an orange popularly known as “laranja da terra” and belongs to Rutaceae family. Leaves and fruit peels are largely used in folk medicine to treat respiratory and gastrointestinal disorders (1). This work aimed to analyze the chemical composition of essential oils of leaves and fruit peels of *C. aurantium* L. and their toxicities by brine shrimp assay (*Artemia salina*). Samples were collected at Curuá city, Pará State, Brazil. Fruit peels and leaves were separately submitted to hydrodistillation in Clevenger apparatus both during 4 h, yielding 2.5 % and 0.44 % of essential oils, respectively. The essential oils were analyzed by GC/MS with following conditions: GC/MS Agilent Model HP-6890 coupled to a mass selective detector, column HP-5MS (30m X 0.25 mm X 0.25 µm), temperatures: injector= 220 °C, detector= 250 °C, column= 60 °C, 3 °C min⁻¹, 240 °C (20 min), carrier gas= He 1.0 mL min⁻¹. The compounds were identified by comparison with NIST library-05, retention index calculation and comparison with literature. Chemical composition of essential oil from leaves presented 10 compounds, with linalool (49.5 %) being the major one, followed by linalool acetate (27.6 %), p-menth-1-en-8-ol or α-terpineol (9.5 %), geraniol acetate (5.1 %) and nerol acetate (2.6 %). On the other hand, essential oil of fruit peels presented nine compounds: limonene (92.3 %), *cis*-limonene oxide (1.9 %), β-myrcene (1.4 %), *cis*-carveol (1.0 %) and *trans*-limonene oxide, (0.9 %). For brine shrimp assay, *A. salina* eggs were incubated in artificial saline during 24 h under a lamp till the hatching of nauplii. Ten nauplii were transferred to tubes containing saline solution and the samples in the following concentrations: 1, 10, 100 and 1000 µL mL⁻¹. Bioassay was done in triplicate. The survival percentage of nauplii was calculated after 24 h and the results showed that essential oils from the leaves and fruit peels of *C. aurantium* presented 100 % mortality at concentrations of 100 and 1000 µL mL⁻¹.

1. Areas, T.F.; Moura, R.B. Rev. Fitos, 2012, **7**, 110-118.

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