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Essential oil composition of leaf and fine stem of *Aniba canelilla* (Kunth) Mez from Manaus, Brazil.

Maria da Paz LIMA[1], Tatiana Maria D. SILVA[1], João Domingos da SILVA[1], Maria das Graças B. ZOGHBI[2], Eloisa Helena A. ANDRADE[2]

ABSTRACT
The essential oil of the leaves and fine stems of *Aniba canelilla* (Kunth) Mez collected in the city of Manaus, AM, Brazil, were obtained by hydrodistillation and analyzed by GC/MS. Forty-two components were identified, of which 1-nitro-2-phenylethane, as expected, was the major (71.2%-68.2%).

KEY WORDS
Aniba canelilla, Lauraceae, essential oil composition, 1-nitro-2-phenylethane.

Os óleos essenciais das folhas e galhos finos de Aniba canelilla *(Kunth) Mez coletados em Manaus, Brasil.*

RESUMO
Os óleos essenciais das folhas e dos galhos finos de Aniba canelilla *(Kunth) Mez coletada na cidade de Manaus, AM, Brasil, foram obtidos por hidrodestilação e analisados por CG-EM. Quarenta e dois componentes foram identificados, dos quais 1-nitro-2-feniletano, como esperado, foi o que apresentou maior porcentagem (71,2%-68,2%).*

PALAVRAS-CHAVE
Aniba canelilla*, 1-nitro-2-feniletano, composição química de óleos essenciais.*

Aniba canelilla (Kunth) Mez (Lauraceae) (syn: *Aniba elliptica* A. C. Sm., *Cryptocarpa canelilla* Kunth), locally known as "casca-preciosa", is a large tree endemic to South America. Bark infusions have been used to treat diarrhea, coughs, and as a antispasmodic and stimulant for the nervous system (Corrêa, 1984; Martins, 1989; Almeida, 1993). 1-Nitro-2-phenylethane and methyleugenol were the major compounds identified in the essential oil of *A. canelilla* (Gottlieb & Magalhães, 1960; Morais et al., 1972; Oger et al., 1994; Taveira et al., 2003). The percentage content of these two compounds are reported as depending on soil and the seasonal period of collections in the Amazon that was higher in the rainy season (Taveira et al., 2003). The alkaloids of *A. canelilla* have been reported (Oger et al., 1993). The fungistatic activity of 1-nitro-2-phenyletahane and the LD_{50} of a petroleum ether extract from this plant was determined (Oger et al., 1994). This paper relates the chemical composition of the oil obtained from the leaves and fine stems of *A. canelilla*.

The samples of *A. canelilla* were collected on the Instituto Nacional de Pesquisas da Amazônia (INPA) campus, in Manaus, in the state of Amazonas, Brazil, in november 2001. A voucher especimen (#210071) was kept in the Herbarium of INPA. The leaves (188g) and fine stems (80g), dried at room temperature for 7 days, were subjected to hydrodistillation for 4h, using a Clevenger-type apparatus to produce oil yields of 0.8% and 0.2%, respectively. GC/MS analysis was performed on a Finnigan Mat INCOS XL GC/MS system, equipped with a DB-5MS (30m x 0.25mm; 0.25mm film thickness) fused silica capillary column; helium was used as carrier gas, adjusted to a linear velocity of 32 cm/s (measured at measured at 100°C); split flow was adjusted to give a 20:1 ratio, and septum sweep was a constant 10mL/min. Splitless injection of 1mL, of a 2:1000 hexane solution; injector and detector temperature was 250°C; programmed oven temperature was 60°C-240°C at 3°C/min. the carrier gas was helium. Injection and oven-programming temperature were the same as above. EIMS: electron energy, 70 eV; ion source temperature and connection parts: 180°C. Individual components were identified by comparison of both mass spectrum and their GC retention data with those of authentic compounds previously analyzed and stored in the data system, and by comparison of mass spectra with those in the data system libraries and cited in the literature (Adams,

[1] Instituto Nacional de Pesquisas da Amazônia, Coordenação de Pesquisas em Produtos Naturais, CP 478, 69011-970, Manaus, AM, Brasil
[2] Museu Paraense Emílio Goeldi, Coordenação de Botânica, CP 399, 66040-170, Belém, PA, Brasil

1995). Components, retention indices, and percentages are listed in Table 1.

Table 1 - Volatiles (%) identified in the essential oils of *Aniba canelilla*

Constituents	R I	Leaves	Fine stems
α-Pinene	939	1.0	0.8
Benzaldehyde	961	4.8	
β-Pinene	980	0.4	0.6
Benzonitrile	985	1.2	0.4
Δ^3-Carene	1012		0.2
p-Cymene	1026	0.4	0.3
Limonene	1031	0.8	1.3
1,8-Cineole	1033	0.2	
Phenylacetaldehyde	1043	0.5	
trans-Linalool oxide	1089		0.1
Linalool	1099	1.2	5.2
Terpinen-4-ol	1178		0.2
Isomenthol	1182		0.1
α-Terpineol	1189	0.6	0.9
Geraniol	1257		0.2
1-Nitro-2-phenylethane	1300	71.2	68.2
Eugenol	1357	1.0	5.2
β-Elemene	1375	0.2	0.2
α-Copaene	1377	1.5	0.2
(E)-Methyl cinnamate	1379		0.1
(Z)-Caryophyllene	1403	2.2	1.2
Methyl eugenol	1405		1.1
(E)-Caryophyllene	1418	0.9	1.4
α-Humulene	1454	0.6	0.7
β-Chamigrene	1477		0.3
β-Selinene	1485	4.5	1.8
α-Selinene	1494	1.1	0.9
β-Bisabolene	1509	0.7	0.8
δ-Cadinene	1525	0.3	0.5
cis-Calamenene	1521	0.1	0.3
Cadina-1,4-diene	1533		0.1
Elemol	1550		0.1
(E)-Nerodiol	1565		0.1
Spathulenol	1576	0.1	0.3
Caryophyllene oxide	1581	1.3	0.6
Globulol	1584		0.1
Guaiol	1595	0.1	0.4
Humulene epoxide II	1606	0.1	0.1
1-*epi*-Cubenol	1629		0.3
Cubenol	1644		0.2
Selin-11-en-4α-ol	1553		3.6
Bulnesol	1668		0.3

*RI on DB-5MS

As reported in the literature (Gottlieb et al., 1960; Morais et al., 1972) in previous studies of the oil of *A. canelilla*, 1-nitro-2-phenylethane was found to be the major component. According our results the leaf and fine stem oil of the present sample furnished also a high content of 1-nitro-2-phenylethane (leaves: 71.2%; fine stems: 68.2%). The content of this component in the oil of the stem bark of *A. canelilla*, that were previously reported presented 89.8% (Oger et al., 1994) and 48.6%-94.3% (Taveira et al., 2003). To the best of our knowledge the chemical composition of the stem oil of *A. canelilla* is being reported here for the first time.

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