

Chemical variability of priprioca essential oil (*Cyperus articulatus* var. *nodosus*) in different soil conditions in Amazon West

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Priproca (*Cyperus articulatus* var. *nodosus*, Cyperaceae) is an Amazonian plant used for aromatic baths. In Pará, in the metropolitan region of Belém, local perfume industries have used the priproca extract in their products for more than thirty years (1). The essential oil (EO) is used in commercial scale by only one company, “Beraca” in Belém, to produce the “Natura” range of fine perfumes. This study aimed to define experimental parameters for commercial cultivation, EO production and determination of chemical composition of EO’s of different agronomical experiments in Amazon West, in experimental areas of Santarém city (Tabocal I and II) and Belterra (Embrapa). The cultivated material was collected in November 2014 (summer) and a voucher specimen was deposited in Herbário Museu Paraense Emílio Goeldi under registration n^o 207174. Soil samples were collected according to recommendations of Embrapa and analyzed in the laboratory of Embrapa Amazônia Oriental and Laboratório Agropecuário Plante Certo Ltda. The chemical profile was determined according by gas chromatographic-mass spectrometric (GC-MS) in CPQBA-UNICAMP. Identification of chemical compounds was done through calculation of retention indices of the analytes, and comparison with a MS reference library (NIST-11) and literature data (2). Results from soil analysis revealed a sandy texture in Tabocal I (544 g/kg), and claylike in Belterra (700 g/kg) and Tabocal II (634 g/kg). Respectively, pH in water: 5.0; 4.6 and 5.5; M.O. (g/kg): 5.10; 6.39 and 34; N (%): 0.19 in Tabocal I and 0.41 in Belterra; P (mg/dm³): 2; 7 and 14; K (mg/dm³): 25, 67 and 60; Na (mg/dm³): 17 in Tabocal I and 34 Belterra; Ca (mg/dm³): 2.3; 2.0 and 4.6; Ca+Mg (cmol_d/dm³): 3.0; 2.6 and 5.8; Al (cmol_d/dm³): 0.3; 0.8 and 0.0; H+Al (cmol_d/dm³): 3.80; 6.77 and 5.25; and effective CEC (cmol_d/dm³): 3.54; 3.32 and 11.3 (mg/dm³). Yield of EO was 0.58% in Tabocal I, 0.62% in Tabocal II and 0.49% in Belterra. Chemical profile of priproca showed that volatile compounds are in different concentrations in the samples. Sesquiterpenes are the major compounds in all samples including isocorimbolone, mustacone, aristolone, *trans*-pinocarveol and caryophyllene oxide. The same compounds were previously identified in priproca (3). Myrtenol, viridiflorene, verbenone, 1,3,8-*p*-menthatriene, β -humulene, *trans*-calamenene, α -selinene, with a further five unidentified compounds with concentrations > 2%. Clay soils presented minor concentration of compounds like α -pinene (0.84-0.98%) than sandy soil (5.13%), similarly to β -pinene in clay soil (0.58%) versus sandy soil (2.82%). Mustacone has higher concentration in clay soil (14.25%) than sandy soil (11.86%). The aromatic differentiation of EO’s produced in different soils and growing conditions could define favorable factors of the fragrances appreciated by perfumers.

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