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# *ANIBA ROSIODORA DUCKE (LAURACEAE) ESSENTIAL OILS ANALYSIS FROM LEAVES AND STEMS SPROUTS*

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The rosewood essential oil (REO) is produced from the trunk of the trees of the endangered species *Aniba rosiodora*, globally traded as CITES, due to linalool content, the most abundant molecule in this oil. The alternative and sustainable approach to produce the linalool rich essential oil is to extract from leaves (ROLEO) and stems sprouts (ROSEO). At the present study, samples from leaves and stems sprouts from 91 trees were extracted and the 182 essential oils were analysed by GC-MS (single-quadrupole ISQ LT MS, with a DB-5ms column). The trees collected at Maués, Amazonas State, vary in age, girth, total tree height, and height. As expected, linalool was the predominant constituent in REO, approximately three times greater concentration than the sum of all other substances, varying at 50.3%±6.7 and 41.8%±5.2, to ROLEO and ROSEO, respectively. The following molecules were also detected in smaller quantities: cis-linalool oxide, trans-linalool oxide, alpha-terpineol, eudesma-4(14),11-diene, alpha-selinene, spathulenol, benzyl benzoate, and eucalyptol. Using Principal Component Analysis (PCA), plant part, tree age and the concentrations of each substance were considered as variables, and a correlation matrix was then calculated. A relationship between REO yield and age was not observed. By graphing the data using the first two principal components, which represent 65% of the data variance, it was possible to recognize that the samples tend to cluster into two distinct regions, highlighting the difference in chemical composition between leaves and stems. ROLEO were more associated with minoritarian monoterpenes (cis/trans-linalool oxide, and alpha-terpineol), while ROSEO were associated with minoritarian sesquiterpenes: alpha-selinene, eudesma-4(14),11-diene, and spathulenol. ROLEO aging between 18-34 years showed higher concentration of linalool. At ROSEO, youngest trees (7-17 years) showed a lower concentration of linalool and 18-34 year trees showed higher amount of cis/trans-linalool oxide. The compounds eucalyptol and benzyl benzoate, although less abundant, proved to be good markers for better discriminating between the leaves and stems groups. Gas chromatographic analysis was performed using linalool and linalool oxides standard curves, allowing the identification and quantification of these substances together with many other monoterpenes and also sesquiterpenes.

***Keywords:*** *Aniba rosiodora, Linalool, Chemometrics, Essential Oils.*