



PROFILE OF SUGARS IN THE AROEIRA HONEY FROM NORTHERN MINAS GERAIS

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ABSTRACT

The aroeira honey is a product obtained from the nectar of the aroeira tree, or *Myracrodruon urundeuva*, a dioecious plant present in Brazil, Bolivia, Paraguay and Argentina. The aroeira tree is rich in several active compounds and its honey has distinct characteristics, such as a less sweet taste, dark color and complex chemical profile. Profiling its sugar composition is important both for its chemical characterization and active compounds identification. Those are crucial steps for honey fraud prevention and future development of biopharmaceutical products, given the fact that the trisaccharides present in honey can have antibiofilm activity. We quantified the contents of glucose, fructose, sucrose, maltose, erlose, melezitose and raffinose present in 106 samples of the aroeira honey from northern Minas Gerais. We conducted HPLC/RID analyses using a LC-NH₂ 5µm column, 25cm x 4.6mm; an isocratic mobile phase of acetonitrile:methanol:ultrapure water (77:4:19 v/v); an injection volume of 20µL and a flow of 0.7mL/min. We used pre-tested sugar standards for retention time identification and developed analytical curves for each sugar. Six different carbohydrates were identified, with an average composition of: glucose (38.1 ± 3.9%), fructose (34.4 ± 3.3%), erlose (2.2 ± 1.4%), sucrose (0.8 ± 0.3%), melezitose (0.6 ± 0.5%) and raffinose (0.5 ± 0.2%). Other sugar peaks were observed but not identified. The composition shows a typical profile within the expected limits, with sucrose below the MAPA defined limit of 6%. The chosen methodology was effective in identifying and quantifying the six researched carbohydrates. The content of trisaccharides was above 3% – namely erlose, melezitose and raffinose – indicating both the complexity of the honey's sugar profile and its potential antimicrobial activity, as those trisaccharides can act to reduce the adhesion of bacteria and fungi to tissues. These results are important in the greater effort of mapping the Brazilian biodiversity, in the identification of possible raw materials for biopharmaceutical development, in the standardization of commercial honey from Northern Minas Gerais and in the prevention of honey fraud.

Keywords: honey; Aroeira; HPLC, sugars, trisaccharides

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