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Fingerprint profile by ^1H RMN and chemometric analyses of freeze-dried Açaí berry pulp

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Fingerprinting profile by ^1H RMN was obtained for acai fruits genetically modified at Embrapa Amazonia Oriental cultivated in controlled agronomic conditions and also for acai pulp sold in the city of Belem (North of Brazil) were obtained. The acai fruits were collected at different season in the years 2014 and 2015. Samples were sanitized and processed in the same collection day. The acai pulp was freeze-dried and the methanolic extract was performed five times for each sample. The ^1H NMR spectra of samples were acquired at 300 K in a Bruker AVANCE III 400 MHz with a 5 mm inverse detection probe with ATMA[®] and SampleXpress[™]. PCA was carried for the ^1H NMR data in AMIX[®] software. The study showed that there is strong similarity between samples of freeze-dried acai pulp genotypes and commercial ones. It was possible to observe tendencies in the distribution of periods of collection of genotype fruits and also in the commercial acai pulp. Some commercial samples showed higher concentration of unsaturated lipid compounds than genotype samples. Differences in commercial samples were not found for only one point of sale in 2015; possibly, they buy acai fruit frequently and do not work with large stockpiles of frozen pulp in Belem. Of the 31 genetically modified acai palm trees, just 5 genotypes showed different chemical characteristics of the fruit. These fruits have higher concentration of unsaturated lipids and carbohydrates. The signs in the carbohydrate region are probably sugars attached to phenolic compounds such as anthocyanins and other flavonoids.