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## Assessing The Physicochemical Composition And Wide Diversity Of Pollen In Honey Samples Procured From Some Markets In Umudim Local Government Area Of Anambra State

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### Abstract

A range of honey varieties can be found in Nigerian markets. In the present study, a comprehensive analysis of four honey samples collected from various locations (Eke Osu, Afor Eziama, Eke Amichi and Nkwo-Igbo) in Umudim Local Government Area of Anambra State was carried out with the aim of evaluating the wide diversity of pollen and physicochemical composition of the honey samples using standard methods. A total of forty six (46) distinct pollen types in 22 plant families were recorded. Inclusively, the varying percentage counts of the entire samples were: 650 (22.26%) in Eke osu, 825 (28.25%) in Afor Eziama, 755 (25.86%) in Eke Amichi and 690 (23.63%) in Nkwo Igbo. The frequency class highlighted the presence of pollen types such as *Allophylus africanus*, *Lannea acida*, *Piliostigma* sp. and *Elaeis guineensis*, which were classified as secondary types. The results of the physicochemical composition showed that the samples had pH values ranging from 4.00 - 5.00, moisture (7.60% - 8.21%), ash (0.09% - 1.20%), protein (1.36% - 1.98%), fat (1.05% - 1.43%), polyphenol (60.73% - 84.48%); free acidity (46.00 - 59.00 meq kg<sup>-1</sup>) and HMF (46.60 – 54.40 mg/kg). Sugar composition analysis showed that the recorded values of fructose and glucose were: Eke osu (57.00±1.73 Mg/100g), Afor Eziama (50.00±0.58 Mg/100g), Eke Amichi (49.00±0.11 Mg/100g) and Nkwo Igbo (53.00±0.33 Mg/100g) for fructose; Eke Osu (43.00±1.15 Mg/100g), Afor Eziama (44.00±0.58 Mg/100g), Eke Amichi (39.00±0.81 Mg/100g) and Nkwo Igbo (49.00±0.42 Mg/100g) for glucose. Higher values were recorded for sucrose. The results demonstrated that most of the parameters aligned with recommended standard of quality honey. Hence, they are good for human consumption.

**Key words:** honey samples, physicochemical composition, pollen types, markets, frequency class

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