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Pollen Analysis and Honey Physiochemical Properties of Gesha-Sayilem Forest in Southwest Ethiopia

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Low quality of honey product from different parts of the country leads to high challenges on export market and hence low export earnings. As a part of solution to this problem, investigation on honey samples collected from Gesha and Sayilem districts of the Kaffa Zone, Ethiopia was conducted to identify the quality of the product from the study areas against national and international standards. Assessment of bee forage based on field inventory, pollen load collection using pollen trap and pollen analysis indicated that 79 bee forages with the major pollen count belongs to *Schefflera abyssinica*, *Croton macrostachyus* and *Vernonia amygdalina ranging* from 66.4 % to 96%, 478.2-58.7% and 33.92-64.4% respectively. The results of analyzed honey samples from the areas for moisture, sucrose, glucose and fructose content, shows that 19.5 g/100 g, 69.48 g/100 g, 38.6 g/100 g and 35.5 g/100g, respectively. Similarly, proline, pH, free acid and HMF values, electrical conductivity and invertase activity of the honey also shows that 210.1 g/100g, 4.05g/100 g, 7 meq/kg, 1.23.87 mg/100g and 0.16 mS/cm, respectively. Significant correlations were observed between moisture content and electrical conductivity ($r = 0.76$, $p < 0.01$).The study found thet all analyzed parameters of the honey samples meet the basic honey quality standards both national and international specifications. From this study, we recommend that potential investors and buyers can create partnership focusing on this large UNSCO delignated Biosphere forest for producing and exporting of quality honey product to the international markets.

Keywords: Bee forage, plant community, monofloral honey and honey quality

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