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MELISSOPALYNOLOGY OF HONEYS PRODUCED IN THE NEVADOS PROVINCE OF THE DEPARTMENT OF TOLIMA, COLOMBIA BY Apis mellifera L. (Hymenoptera: Apidae)

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Honey is a sweet substance produced by bees from nectar or plant secretions, containing glucose, fructose, organic acids, enzymes, solid particles, and pollen grains. The pollen found in honey results from the foraging and pollination activities of bees on the vegetation surrounding the hive. Mellisopalynological analysis allows for the identification of the specific plants visited by bees, as pollen grains are carried by them from the flowers. In Colombia, this type of analysis has not yet been fully established, despite its significance from the perspective of plant-insect interactions. This study investigates the floral composition of honeys collected from the Nevados Province in the Tolima Department of Colombia. The region, located in the central Andes, features a variety of ecosystems ranging from tropical to montane forests, which influence the diversity of floral sources available to local honeybees. Different honey samples from the study area were processed using the standard acetolysis technique, followed by pollen grain counts per sample, and the determination of pollen type frequencies. Nearly 90 pollen types from 35 plant families were identified. The families with the highest representation were Leguminosae (17.3%), Compositae (11.9%), Anacardiaceae (5.43%), and Poaceae (5.43%). The pollen types of Attalea sp., Mimosa somnias, Triumfetta lappula, Psidium guajava, and Poaceaesp. were found in all samples, while the most represented pollen types in the samples included Attalea sp., Mimosa somnias, M. pudica, Poaceae sp., P. guajava, and Cecropia peltata. The diversity and occurrence of pollen types in the samples allow them to be classified as multifloral honeys, as no sample contained pollen types with a frequency higher than 50%. This study holds significant relevance for both the scientific community and the agricultural and beekeeping sectors in Colombia, not only in terms of beekeeping and honey production but also for biodiversity conservation.