



HONEY AND HONEY BEES OF GUINEA-BISSAU

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Beekeeping is an ancient activity in Guinea-Bissau. The ancestral interaction with bees stands on “honey hunting” of natural colonies or use of traditional hives hanged on trees. These hives are perfect shelters for swarms but the colony is destroyed every year after honey harvesting. Bees are therefore kept as wild as ever with little, if any, interference from man.

Reports on honey bees and honey of Guinea-Bissau are scarce. Herein we report the first data on honey quality and provide a morphometric and genetic identification of the bees. Fifteen colonies from 5 localities were examined for morphometry and mtDNA. Honey samples were collected from beekeepers using Kenyan top-bar and traditional hives and analyzed for color, humidity, conductivity, free acidity and diastase activity.

The morphometric analysis showed a bee smaller than the Europeans but with similar leg and wing size. Regarding color, each worker displayed a very distinct yellow spot on thorax and a black spot at the fourth ring, which appeared either isolated from the black strip or linked, looking like a “T shape”. Those two features mark the difference towards other honey bees.

The maternal genetic composition was assayed using the *Dra* I test (COI-COII mitochondrial region). Three haplotypes, each belonging to a distinct evolutionary sublineage, were found. Most colonies (11 out of 15) harbored an A1 haplotype (sublineage I) whereas only 3 and 1 were of A8 (sublineage II) and A14 (sublineage AIII) ancestry, respectively.

Honey samples showed significant differences in quality depending on the harvesting methodology: honey from modern beekeepers was light amber with 16% humidity, low acidity, and conductivity from 300-700 $\mu\text{S}\cdot\text{cm}^{-1}$. Samples from traditional production had debris contamination, an unpleasant flavor and color above 150 in the Pfund scale. Water content was higher than 20% and conductivity above 600 $\mu\text{S}\cdot\text{cm}^{-1}$.