

MITOCHONDRIAL AND MICROSATELLITES POLYMORPHISM IN ETHIOPIAN HONEYBEE

Autores: Leandro Rodrigues Santiago¹, Addissu Gebre Ayele², Mohamed Tilahun², Zenebe Abreha², Patricia Maria Drummond³, Maria Cristina Arias²

Instituição: 1. Departamento de Genética e Biologia Evolutiva, Instituto de Biociências-USP; 2. Mekelle University; 3. Embrapa Acre.

Contato: 1. Rua do Matão 277, CEP 05508-090, São Paulo-SP; 2. Mekelle University, Mekelle, Etiópia; 3. Rodovia BR-364, km 14, Caixa Postal 321, CEP 69900-970, Rio Branco-Acre.

Email: lr.santiago@usp.br

Beekeeping in Africa plays significant role in attaining poverty reduction strategy through the production of honey and other hive products that use and create assets to beekeepers. Honey is the most important product of beekeeping in northern Ethiopia from the socio-economic viewpoint. Development interventions involved to improve honey production in Ethiopia are, however, highly dependent on bee races selection as the colony multiplication technique currently used is unreliable to select good races. This problem can be solved through grafting method of queen rearing of specific races. To characterize honeybee populations from three different agro-ecological zones (here called Low, Mid and High) we designed a molecular approach encompassing the sequencing of COI-COII mitochondrial intergenic region (well established as reliable marker to identify bee races) and the genotyping of 4 microsatellite loci. A total of 160 colonies were analyzed. We found high genetic variability in terms of allelic number, but most of microsatellite alleles were shared among all populations. Therefore population structuring was not observed, indicating current gene flow. The mitochondrial data showed also high variability (number of haplotype) in all populations. Tests for populations structuring showed that there is difference between the pairs Mid - Low and High - Low. So in conclusion, the samples from Low land are genetic distinct in relation to the others two. These data should now be correlated with ecological and productiveness parameters to recommend appropriate strains in each agro-ecological zone.

Apóio: Africa-Brazil Agricultural Innovation Marketplace

Palavras-chave: Honeybee Microsatellites Mitochondrial DNA Honey Beekeeping