



## Distribution of stingless bee nests (Hymenoptera, Apidae, Meliponini), a response to urbanization?

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Stingless bees (Apidae: Meliponini) are distributed in the tropical and subtropical regions and form the most diverse group of social bees in the tropics. In Brazil, 244 species in 29 genera are recorded. They forage in groups, which increases their efficiency in pollinating plants that bloom abundantly in a short period of time, and improve fruit quality in cultivated areas. Moreover, they play an important socio-economic role through meliponiculture. Stingless bees can be affected by changes in land use caused by processes inherent to urbanization such as the habitat loss and fragmentation of native forest, amount of impervious surface, pollution of soil, water and air. The prediction that in the year 2050 the world urban population will exceed 60% increases the importance of understanding how stingless bees respond to urbanization. The aim of this study is to analyze how the distribution of stingless bees nests varies with the characteristics of urban habitats in a medium-sized city in Brazil and to identify the factors that influence this distribution. For this purpose, 18 sample units (SU) were delimited in the urban area of Campos dos Goytacazes, RJ, composed of a green area and four 300m transects of urban roads, distributed in the three main macro-areas delimited by the Municipal Master Plan. These SU will be inspected in the dry season and rainy season to search nests in trees and other substrates. All trees within the SU will be numbered and inspected. The nests found will be identified according to: substrate (tree or construction), height, position of the entrance in relation to the cardinal points, plant species and CBH for the nests in trees. As habitat characteristics in each SU, the number of trees and buildings with more than 3 floors, tree cover in the green area and land use history will be recorded. The flowering and fruiting of trees and shrubs or herbs with mass flowering will be evaluated monthly, for a year, as possible sources of resources for bees. The entrance size and the density of marked nests will be measured in two consecutive years, in areas with greater and lesser movement of people and automobiles in order to verify if these characteristics affect the nesting behavior. We expected that the higher density of stingless bees nests is associated with the SU in less urbanized regions, with greater availability of food resources and nesting place. Based on this diagnosis, we intend to produce instructional material with indications for the management of vegetation and green areas that can favor the conservation of stingless bees in urban areas.