

NATIVE BEES ASSOCIATED WITH CROTALARIA (FABACEAE) IN A PASTURE AREA

ABELHAS NATIVAS ASSOCIADAS A CROTALÁRIA (FABACEAE) EM UMA ÁREA DE PASTAGEM

Willian Moreira da Costa*¹; Kamila Moreira da Costa²; Luceli de Souza³; Manuela Silva de Amorim¹; Aparecida de Fátima Madella de Oliveira¹

¹Instituto Federal de Educação, Ciência e Tecnologia do Espírito Santo, Alegre, ES, Brasil;

²Universidade Federal de Viçosa, Viçosa, MG, Brasil;

³Universidade Federal do Espírito Santo, Centro de Ciências Exatas, Naturais e da Saúde, Alegre, ES, Brasil.

*Corresponding author: willianbiologo@hotmail.com

Abstract

The genus *Crotalaria*, belonging to the botanical family Fabaceae, is represented by plants with strong performance in the fixation of atmospheric nitrogen, being recommended especially for areas that need green manuring. *Crotalaria ochroleuca* is one of the species of this group used the most, since it is an easy to plant, and produces abundant forage. It promotes erosion control as well as in soil enrichment, and is used as green manure in several crops: beans, cotton, sugarcane and various vegetables, among others. It is a bushy, erect plant, with an annual cycle, with racemose inflorescences having yellow flowers. Additionally, it is an important plant for bees, by providing food resources such as nectar and pollen. The visitation of bees to the inflorescences contributes to the pollination of the plant and the consequent production of seeds. The purpose of this study was to identify the species of native bees visiting the inflorescences of *Crotalaria ochroleuca* in a pasture area. The study was carried out between April 2020 and February 2021 in a pasture area, located in Rive, district of Alegre, south of Espírito Santo state. Two monthly collections were performed between 10 a.m. and 1 p.m., totaling a sampling effort of 66 hours. The samplings were carried out using the transect method with capture of flowers with an entomological net, where the inflorescences were observed for 10 minutes and the visiting bees were collected, transferred to a killing flask containing ethyl acetate. In the laboratory, the bees were sorted, dried, identified, labeled, and deposited with the Caparaó Museum of Zoology, at Federal Institute of Espírito Santo - Alegre Campus. Ninety-two specimens were collected, representing seven species of bees, distributed in three tribes grouped into two families: *Xylocopa frontalis* (Olivier, 1789); *Xylocopa grisescens* Lepeletier, 1841; *Xylocopa nigrocincta* Smith, 1854; *Xylocopa hirsutissima* Maidl, 1912; belonging to Xylocopini, Apidae; *Epanthidium tigrinum* (Schroetter, 1905), belonging to Anthidiini, Megachilidae; *Megachile* sp.1 Latreille, 1802 and *Megachile* sp.2 Latreille, 1802, belonging to Megachilini, Megachilidae. *Xylocopa frontalis* was the most abundant species, accounting for 40% of all individuals collected, followed by *Megachile* sp.1 with 25%, *Xylocopa grisescens* with 14%, *Xylocopa nigrocincta* with 9%, *Megachile* sp.2 with 6%, and *Xylocopa hirsutissima* and *Epanthidium tigrinum*, with 3% each. Four species were found for the genus *Xylocopa*, and it was represented by large and robust bees, which have generalist feeding behavior, visiting several botanical species, including plants of agricultural interest. These bees nest, especially in tree trunks and dry branches. They are usually solitary, but some species may present some level of sociability. Although, in the study area there were few target trees for *Xylocopa* bees to use for nesting, the species richness may have been influenced by the proximity to a forest fragment, with the two areas being approximately 300 meters apart. Female Megachilidae bees, in addition to collecting pollen grains, also use floral fragments to build their nests, and resins to maintain the nests and close the brood cells. They can nest in branches, preexisting cavities in wood and holes in the ground. In fact, some species can build their nests in rock cavities. Bees of the genus *Xylocopa* had a higher rate of visitation to *Crotalaria* inflorescences, about 70%, between 10:00 and 12:00, while the bees of the genera *Megachile* and *Epanthidium* were better represented, about 63%, between 12:00 and 13:00. *Crotalaria ochroleuca* is a botanical species exploited as a food source by native bees, which can be indicated for planting and rational management in agricultural environments and/or in environmental recovery areas.

Keywords

Agro-ecosystem, pollinators, recovery

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