Abstract

Some organisms disperse energy, associated with the transportation of resource, which is not necessarily food. Stingless bees of Central Amazonia (Melipona flavolineata and M. lateralis) collect clay in banks along streams for nest building. The moisture of the clay varies along the bank, and bees collect clay from specific location, indicating that there is some sort of preference regarding their selection. This study aims at identifying: if larger bees carry more clay; if there is a preference for moisture of substrates; and if bees are less efficient accumulating and transporting clay when it is wet. In order to do so, I measured the size of the bees and of the pellets of clay found in the corbicula. I set up a field experiment to test substrate preferences. The amount of clay transported, increased exponentially in accordance to the size of the bee, and the preferred substrate was the driest clay. The amount and the efficiency of removal of clay were not affected by the moisture of the substrate. Despite the wet clay being denser, it does not reduce the efficiency of exploitation of the resource, but suggests that bees spend more energy to carry the same quantity of wet clay, which may be the underlying mechanism explaining their preference for removing drier clay.

Keywords

Corbicula, Melipona, substrate preference, removal efficiency, nest building.