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WHO IS THE BEST POLLINATOR? TRACKING THE POLLEN FATE OF A BUZZ POLLINATED PLANT

Amanda Vieira da Silva¹, Anselmo Nogueira¹, Vinicius Garcia Brito², Laura Carolina Leal³

Federal University of ABC, Sao Bernardo do Campo, Brazil¹, Federal University of Uberlandia, Uberlandia, Brazil², Federal University of São Paulo, São Paulo, Brazil³

ABSTRACT

Floral visitors differ in quality of pollen transfer, even acting as a thief instead of a pollinator. Body size may be one trait that help predict the outcome of pollination: usually, large bees are considered more effective pollinators, while small bees act as pollen thieves. Our aim was to track pollen fate regarding the size and behavior of two different bee species. We hypothesized that small bee species are less efficient in pollen removal and deposition and have a less steep pollen carryover curve than larger bee species. To evaluate our hypothesis, we conducted fieldwork and pollination experiments. We found that small bees remove 1.7 times more pollen from anthers and deposited almost 1.5 times more pollen grains in the stigma of *C. latistipula* than large bees, but surprisingly, this did not into a higher plant fitness: while 88% of *B. morio* visits set fruits, only 66% of *Melipona* spp. set fruit. This may be explained by the morphological mismatch between bees' and flower size. We also found that the pollen carryover curve was steeper for large than for small bees, but the number of pollen grains deposited over multiple visits was higher for large bees. In sum, our results suggest that the flower visitor traits, such as size, could help us predict the outcome of plant-flower visitor interactions and dynamic of mutualism.