


# IT'S RAINING FRAGRANT NECTAR IN THE CAATINGA: EVIDENCE OF NECTAR OLFACTORY SIGNALING IN BAT-POLLINATED FLOWERS

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## Study Description

The flowering of *Hymenaea cangaceira* in a dry season at the Brazilian Caatinga semiarid region is a remarkable event. In a short reproductive season, we report that large trees produce thousands of flowers and secrete hundreds of liters of fragrant nectar, usually falling on the ground (“sweet rain” phenomenon). This fragrant nectar seems to act not only as reward, but also as olfactory signal for pollinating bats, explaining this huge and expensive investment. By contrast, fruit set is very low (no more than a few dozen per tree) highlighting the plant strategy of investing in few fruits, but with highest quality seeds.



Photo 1. Due to its remarkable production of nectar, *Hymenaea cangaceira* (Fabaceae) are attractive to several animals from dusk (when they start producing nectar) to the next morning (when there is still some nectar). However, since anther dehiscence and stigmatic receptivity are restricted to the night, only nocturnal visitors are potential pollinators. Nocturnal floral visitors are moths (upper left), sphingids (upper right), and bats. While the insects extend their long proboscids for nectaring, without contacting reproductive organs, bats insert their heads deep into the flower, removing pollen from anthers and depositing it on stigma (below), thereby acting as pollinators. Photo credit: Arthur Domingos-Melo.

These photographs illustrate the article “It’s raining fragrant nectar in the Caatinga: evidence of nectar olfactory signaling in bat-pollinated flowers” by Arthur Domingos-Melo, Paulo Milet-Pinheiro, Daniela Maria Do Amaral Ferraz Navarro, Ariadna Valentina Lopes, and Isabel Cristina Machado published in *Ecology*. <https://doi.org/10.1002/ecy.2914>