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DOES FLORIVORY AFFECT FLORAL SCENT EMISSION ALONG FLOWER LIFETIME?

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ABSTRACT

Plant-pollinator interactions require the prior establishment of communication pathways, which are modulated by chemical and visual cues. Among them, floral scent is essential to ensure successful pollination in various natural systems, but it can also be used by florivores to locate flowers and their resources of interest. Florivores may negatively impact scent emission directly, by feeding on areas responsible for volatile synthesis and emission, or indirectly, by inducing plant physiological responses that change floral scent traits. Thus, after florivory, flowers may no longer be attractive to pollinators or may even start to repel them, due to local short-term changes in floral scent emission.

Here, we selected seven plant species pollinated by bees, hummingbirds, hawkmoths, or butterflies, which have diverse florivore groups in a Neotropical savanna, to investigate whether damage by florivores alters the amount and composition of floral scent during flower lifetime, i.e., in a time interval inferior to 24 hours.

Despite variable florivory levels, we verified no reduction in the total amount of floral scent emitted in six species, but a reduction was observed in a hawkmoth-pollinated species. However, in none of the species did florivory affect scent composition during the flower lifetime. Overall, our data suggest that a stability in scent emission, even in a post-florivory scenario, may guarantee the maintenance of pollinator visitation despite the damages caused to the flowers by florivores.

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