

FUNCTIONAL TRAITS OF PLANTS AND POLLINATORS EXPLAIN RESOURCE OVERLAP BETWEEN HONEYBEES AND WILD POLLINATORS

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Background


The western honeybee, *Apis mellifera*, is the most widespread pollinator species. One of the reasons for its success is that it has been managed for millennia for the production of honey, pollen and other hive products. Therefore, honeybees have been introduced worldwide and often cohabit with wild pollinators, which are equally important for our ecosystems. As honeybee hives can host more than 50,000 bees, their abundance in natural and managed habitats can be extremely high. The presence of such large numbers of honeybees can influence the foraging activity of wild pollinators and potentially lead to competition for floral resources. Functional traits determine how pollinator species choose the flowers to forage on, so they are a key aspect to consider when exploring potential competition among pollinators.


Objective

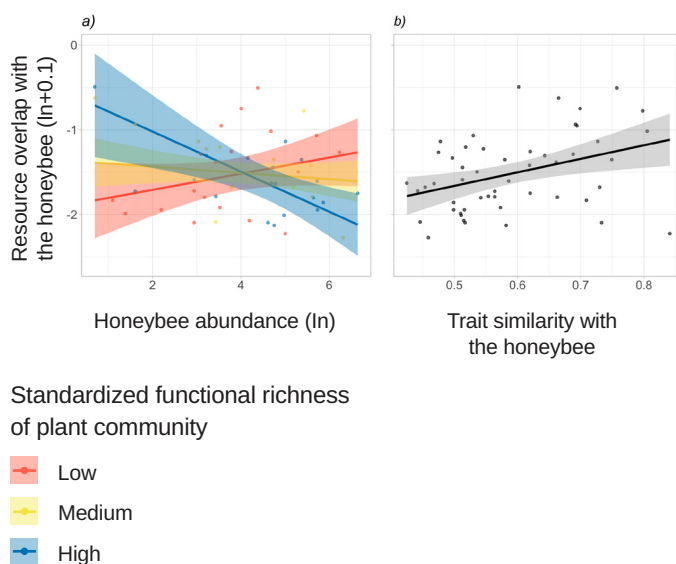
This study aims to understand which pollinator groups may be more prone to potential competition for floral resources with managed honeybees, and how this competition could change in areas with flowering plant communities with very or little different morphology, focusing on functional traits of both plants and pollinators.

Key Messages

 The functional composition of the flower community in which pollinators forage had a strong effect on the potential competition.

 Where honeybee abundances were high, the overlap of floral resources between managed honeybees and wild pollinators was lower in areas where the flower community was characterised by high functional diversity than in areas where functional diversity was low, suggesting a potential diet shift of wild pollinators in areas with a high variability of flower morphologies.

 Wild pollinators with functional traits similar to the honeybee visited the same plant species as the honeybee and were, therefore, more prone to potential competition. In particular, the study observed a high overlap of floral resources between honeybees and large-sized bees belonging to the Apidae family with proboscis length similar to the honeybee.



Source

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