Diversity of Wild Bees along Elevational Gradient in an Agricultural Area in Central Java, Indonesia

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Abstract	Increases in mean temperature affect the diversity and abundance of wild bees in agricultural ecosystems. Pollinator community composition is expected to change along an elevational gradient due to differences in the daily ambient temperature. This study investigated the diversity and abundance of wild bees in an agricultural area along an elevational gradient in Central Java, Indonesia. Wild bees were collected using a sweep net in 40 green bean (Phaseolus vulgaris) cultivation sampling locations at seven different elevations (8, 108, 224, 424, 644, 893, and 1017 m above sea level). Species diversity was determined using the Shannon-Wiener diversity index. We identified 932 individuals from 8 species of wild bee belonging to 3 families. The family Apidae was predominant, with 6 species, while only 1 species was found from each of Megachilidae and Halictidae. Across the study sites, diversity increased with increasing elevation ((H') = 1.4, (D) = 0.25, and (E) = 0.78 at low elevation to (H') = 2.04, D = 0.13, and E = 0.96 at high elevation), and higher numbers of species were found at middle and high elevations. Species richness and abundance increased linearly with increasing elevation, and species diversity was highest at middle elevations.
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