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Species Richness, Density, Activity, and Composition of Ground-dwelling Ants in the Humid Forest Zone of Southern Cameroon: Role of vegetation Cover and Abiotic Factors

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Author(s) Fotso Kuate, Apollin; Hanna, R.; Nanga, S. N.; Tindo, M.; Fotio Doumtsop , A. R. P.; Nagel, Peter
Author(s) at UniBasel Nagel, Peter ;
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The destruction of natural habitats is among the major factors responsible for the decrease in species diversity and distribution. This study focused on the effect of vegetation and its interaction with the season on ant species richness, density, activity, and composition in the three dominant habitats - forest, fallow, and mixed crop field - prevailing in southern Cameroon. Ants were sampled using two sampling techniques -pitfall trap and quadrat - in fallows, forest, and mixed crop fields from May 2007 to April 2008. Average ant species richness did not differ between fallow and forest, but the number of species in both habitats was higher compared with mixed-crop field. Species richness was also higher during the short dry season compared with other seasons. Species density was higher in mixed-crop field and in the long dry season. Species activity was similar in the three habitats, but it was higher during the long-wet season. Species richness, activity, and density were lower at low altitude. Vegetation and season affected the composition of ant species, but not the interaction between the two factors. The highest dissimilarity index was observed between mixed crop-field and forest while between seasons, it was between the short-wet and the long dry season. These results suggest that vegetation cover and abiotic factors interact to determine the distribution, density, activity, and composition of ant species. Identifying key drivers among environmental factors could help to understand the response of species to the variation of those factors in the context of climate change.
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