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Comparative analysis of diet in syntopic geophilomorph species (Chilopoda, Geophilomorpha) using a DNA-based approach

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1 **Comparative analysis of diet in syntopic geophilomorph species (Chilopoda,**  
2 **Geophilomorpha) using a DNA-based approach**

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13 **Abstract**

14 Trophic niche partitioning between potentially competing species within the same coenosis has  
15 been little explored for most of the major groups of arthropod soil predators, among which are the  
16 geophilomorph centipedes. We performed a comparative study in nature on the diet of three species  
17 of Geophilomorpha living in the same site in Southern Europe. Through PCR-based molecular gut  
18 content analysis, we estimated trophic niche width and overlap with respect to three common prey  
19 groups: lumbricids, collembolans and dipteran larvae. Results show that apparently similar  
20 geophilomorph species differ significantly in prey spectrum, with quite different niche widths.  
21 Estimates of predator diet overlap gave moderate values, non-significantly different from null  
22 expectations. Within-species diet composition does not vary significantly with sex. This work,  
23 while providing the first evidence of trophic niche partitioning among coexisting geophilomorph  
24 species, contributes to recent progresses in the understanding of intra-guild interactions between  
25 predators in the soil food webs.

26

27 **Keywords:** centipedes, niche overlap, niche width, gut content analysis, prey spectrum, soil food  
28 web

29

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