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¹ - *Fagus orientalis* Lipsky.
² - *Carpinus betulus* L.
³ - *Quercus castanifolia* C.A. Mey

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³ - Simpson
⁴ - Shannon
¹ - Rank frequency diagram

² - Berlese
⁵ - Tullgren

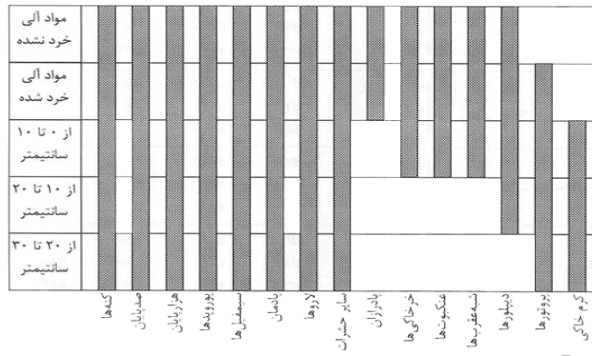
(J)	(H)	(E)	(D)
$J = H / \ln S$	$H = - \sum_{i=1}^S (P_i * \ln P_i)$	$E = 1 / (\sum_{i=1}^S P_i^2 * S)$	$D = 1 / \sum_{i=1}^S P_i^2$

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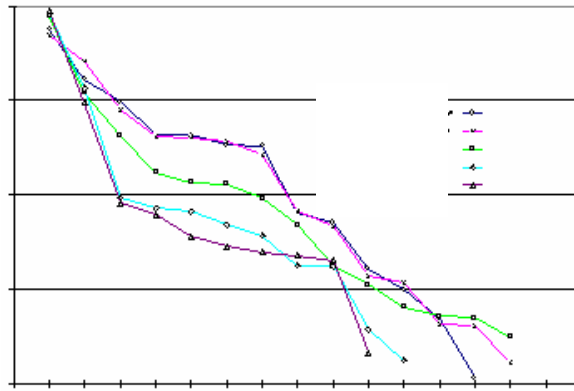
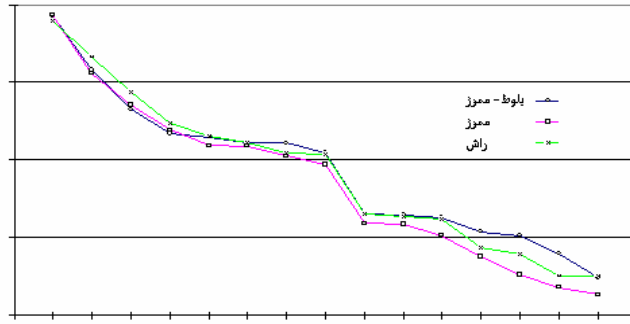


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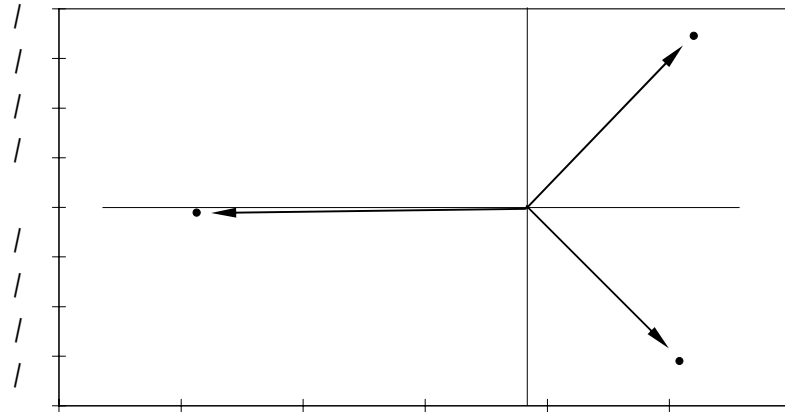
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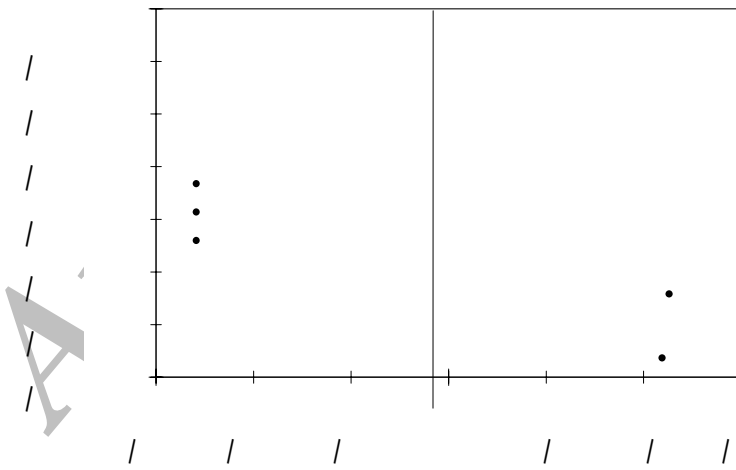
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Diversity and Assemblage Structure of Soil Invertebrates in Beech¹, Hornbeam² and Oak³-Hornbeam Forest Types

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H.Z. Mayvan⁵

Abstract

Diversity and assemblage structure of selected soil invertebrates including Earthworm, Collembula, Diplopoda, Isopoda, Chilopoda, Protura, Pseudoscorpions, Araneas, Symphyla, Diplura, Pauropoda, Opiliones, other insects and their larvae were examined in different soil layers of beech, hornbeam and oak-hornbeam forest types of Neka in north of Iran (Caspian forests). Biomass of invertebrates were monthly sampled for one year using core soil sampler (81 cm² cross section) to a depth of 30 cm including litter, fragmented organic matter, 0-10 cm, 10-20 cm and 20-30 cm mineral layers. Presence of invertebrates in soil layers of beech, hornbeam and oak-hornbeam forest types were compared. Variability of invertebrate biomass in soil layers of beech, hornbeam and oak-hornbeam forest types was quantified as the diversity and equitability indices using Simpson and Shannon formula. Invertebrate assemblage structures in soil layers of beech, hornbeam and oak-hornbeam forest types were illustrated with rank-frequency diagrams. Forest types and soil layers were ordinated using PCA. Presence of invertebrates in soil layers was different, an indication of variability in vertical distribution of their biomass. An increase in soil depth was associated with a decrease in diversity and equitability indices of soil invertebrates. Diversity and equitability indices of soil invertebrates in beech forest type were higher than those in hornbeam and oak-hornbeam forest types. Assemblage structure of invertebrates among soil layers was different, but it was similar among forest types. PCA showed that forest types and soil layers were respectively divided into three and two different groups. In general, diversity and variability in soil organic layers were higher than those in mineral layers; this should be considered in management and protection of forest biodiversity.

Keywords: Forest type, Soil invertebrates, Diversity, Assemblage structure, Neka.

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2- *Carpinus betulus* L.

3- *Quercus castaneifolia* C.A. Mey.

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