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Comparison of epigeic arachnofauna of most frequent biotopes and permanent plant associations in Czech hilly country based on the optimum biotope analysis

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The composition of the epigeic arachnofauna of 126 stations representing 27 biotopes mainly with natural xerothermophilous up to hygropsychrophilous communities in the Křivoklátsko Biosphere Reserve was studied by means of pitfall samples (347 traps with formalin solution, each exposed for an average of nine months, 126 pooled samples, 378 spider species, 35 234 adult specimens).

The single optimum biotope of the highest occurrence of each species has been detected by means of tests for the differences among the biotopes as well as individual stations in abundance, frequency, percentual incidence (dealing also with ecomorphological groups of spiders—mainly cursorial ones, Linyphiidae s. l.) and the average number per trap too. The high concordance of these computations in the detection of the optimum biotope has been stated (98,7 and 94,0% of results are concordant in the quoted groups of spiders).

Sets of species of identical optimum biotope have been used for research of homogeneity and comparison of samples from the ecological point of view. The relative representation of these sets of species in a sample has the fundamental criterion for the decisions. The results demonstrate arachnological specification of actual plant associations and some forest types and conspicuous ecological homogeneity of spider spectra in stations with well preserved and relict communities as well. The method can be applied also to various other areas of Europe, study of spiders of succession stadia and atrificial growths.