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Diversity of the alliance *Polygono-Trisetion* and his distribution in the Slovak republic

Diverzita zväzu *Polygono-Trisetion* a jeho rozšírenie v rámci Slovenska

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Abstrakt

The alpine meadows of the alliance *Polygono-Trisetion* in the Slovak part of the Western Carpathians are distributing at altitudes 700 – 1500 m a.s.l. Meadows with characteristic species of these alliance (*Crepis mollis*, *Geranium sylvaticum*, *Senecio subalpinus*, *Phyteuma spicatum*, *Silene dioica*, *Crocus discolor*) occur mainly as small islands over calcareous bedrocks (Starohorské vrchy Mts, Veľká Fatra Mts, Belianske Tatry Mts, Nízke Tatry Mts, Slovenský raj Mts, Muránska planina Mts, Spišská Magura Mts, Levočské vrchy Mts, Poľana, Bukovské vrchy) at wetter and colder sites of saddles and slopes with mainly northern aspect, rarely on the non-carbonate substratum. Associations of these alliance have tight relationships to the alliances *Arrhenatherion*, *Mesobromion* and *Nardo-Agrostion*.

Phytocoenological material (324 relevés) was analyzed by cluster analysis processed by the program PC-ORD 4 where Ward's linkage method and the relative Euclidean distance as a resemblance measure were applied. Optimal number of clusters was determined by Crispness method. Diagnostic taxa for the individual clusters were determined by calculating the constancy and fidelity measure of each species to each cluster, using the *phi* coefficient of association in the program Juice. The CANOCO 4.5 package was used for running indirect gradient analyses. Detrended correspondent analysis (DCA) defined major gradients in the spatial arrangement of species of the analysed data set. Average Ellenberg indication values for relevés were plotted onto a DCA ordination diagram as supplementary environmental data. Based on the analysis five associations can be recognized within the alliance of *Polygono-Trisetion*: *Alchemilletum pastoralis* Szafer et al. 1927, *Geranio phaei-Alchemilletum crinitae* Hadač et al. 1969, *Geranio sylvatici-Trisetetum* Kapp ex Oberd. 1957, *Rhinantho pulchri-Alchemilletum monticolae* Hadač et al. 1969, *Campanulo glomeratae-Geranium sylvatici* Ružičková 2002, *Crepido mollis-Agrostietum capillaris* Ružičková 2004.

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