

4.3 Species composition and diversity of lichens and bryophytes in synanthropic biological soil crust

ONDŘEJ PEKSA & ZDENĚK SOLDÁN

INTRODUCTION

This chapter contains the results of repeated investigation of terricolous lichens and bryophytes growing in permanent sampling plots in sedimentation basin Chvaletice and in the area of former military airport Ralsko. The comparison between lichen and bryophyte floras of these localities is provided.

MATERIALS AND METHODS

Terricolous lichens and bryophytes associated with biological soil crusts (growing on soil and plant debris) were investigated in the years 2005–2007 on permanent sampling squares in localities of the Chvaletice sedimentation basin (16 squares grouped in 4 quaternion – CH1A to CH4D) and Ralsko airport (12 squares grouped in 3 quaternion – R1A to R3D). The lichens were determined in the field as well as in the laboratory using routine lichenological methods. Two related taxa *Cladonia rei* and *C. subulata* were not distinguished in this investigation, the designation *Cladonia subulata* s.l. was used. The cover was estimated more accurately only by the species with conspicuous thallus (*Cladonia*, *Peltigera*, *Placynthiella*, etc.). The bryophytes were determined in the field only due to their low number and no problems with the determination.

For determination of collected specimens of lichens the works of Coppins (1983, 1987), Giralt et al. (1993), Purvis et al. (1992), Tønsberg (1992), Wirth (1995) and other taxonomic publications have been used. The nomenclature of lichens follows Santesson et al. (2004) or respective works included in references. The nomenclature of bryophytes follows Kučera & Váňa (2005). All collected specimens have been deposited in the PL (lichens and bryophytes) and PRC (bryophytes).

RESULTS AND DISCUSSION

A total of 24 lichen taxa were recorded in sampling squares in two investigated localities (Table 4.3.1). Comparing the species richness of both the localities, Ralsko has obviously less taxa than Chvaletice (22/40), however, in sampling sites similar number of species were found (16/13). (The number of lichens observed in 12 sampling squares in

Table 4.3.1 The list of species recorded in sampling squares during the years 2005–2007: Abb. – the abbreviations of species names, 1 – Chvaletice sedimentation basins, 2 – Ralsko airport.

	Abb.	1	2
lichens			
<i>Bacidina</i> sp.	Bacsp	+	
<i>Cetraria aculeata</i>	Cetac		+
<i>Cladonia cervicornis</i>	Clcer		+
<i>Cladonia chlorophaea</i>	Clchl	+	+
<i>Cladonia coccifera</i>	Clcoc	+	+
<i>Cladonia coniocraea</i>	Clcon	+	
<i>Cladonia furcata</i>	Clfur		+
<i>Cladonia gracilis</i>	Clgrac		+
<i>Cladonia macilenta</i>	Clmac	+	+
<i>Cladonia pyxidata</i>	Clpyx		+
<i>Cladonia ramulosa</i>	Clram		+
<i>Cladonia subulata</i> s.l.	Clsub s.l.	+	+
<i>Diploschistes muscorum</i>	Dimus	+	
<i>Micarea denigrata</i>	Mic sp	+	
<i>Micarea</i> sp.	Micden	+	
<i>Peltigera didactyla</i>	Pedid	+	
<i>Placynthiella dasaea</i>	Pldas		+
<i>Placynthiella icmalea</i>	Plicm		+
<i>Placynthiella oligotropa</i>	Ploli		+
<i>Placynthiella uliginosa</i>	Pluli		+
<i>Thelocarpon</i> sp.	Thesp	+	
<i>Thrombium epigaeum</i>	Threp	+	
<i>Trapeliopsis granulosa</i>	Trgra		+
<i>Vezeada acicularis</i>	Vezac	+	+
bryophytes			
<i>Cephaloziella divaricata</i>	Cediv		+
<i>Cephaloziella hampeana</i>	Ceham	+	
<i>Ceratodon purpureus</i>	Cerpur	+	
<i>Polytrichum juniperinum</i>	Pojun		+
<i>Polytrichum piliferum</i>	Popil		+

Ralsko represents 69,5% of total lichen flora in the locality, however, in the Chvaletice sedimentation basin it is only 32,5% for 16 squares. Simultaneously, 9 species (from 16) were found in more than 75% of investigated squares in Ral-

