

## Report from the stay

Receiver of the fellowship: Hana Vráblíková

Host institution: Universitetet for miljø- og biovitenskap (UMB), Aas, Norway

Time of the stay: February 2007

During February 2007, I visited a laboratory of prof. Yngvar Gauslaa and Knut Asbjørn Solhaug at the Department of Ecology and Natural Resource Management (Norway). I participated on research project dealing with effect of UV-B light on pigments and light susceptibility in lichens.

We exposed thalli of *Xanthoria parietina* and *Lobaria pulmonaria* to 4 treatments – 3 different levels of UV-B light and one without UV-B - for 15 days at two temperatures (12 °C and 21 °C) in temperature-controlled rooms. Photoperiod in both rooms was 18 h/6 h. Light intensity during light period was 200  $\mu\text{mol m}^{-2} \text{s}^{-1}$ . UV-B light was applied for 16 hours within the light period. The photosynthetic performance of thalli was analyzed by chlorophyll fluorescence measurements. Melanin content was evaluated by so-called Browning index obtained from spectral reflectance measurements. Parietin and photosynthetic pigments were quantified by HPLC.

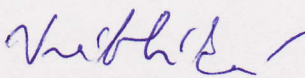
UV-B light of different intensities had same negative effect on photosynthesis of lichens. However, non-photochemical quenching of chlorophyll fluorescence (NPQ) was highest in thalli exposed to highest UV-B intensity. Surprisingly, NPQ was high also in thalli not exposed to UV-B light at 21 °C. The reason is not yet known, further analysis of data is required. The amount of melanins (*L. pulmonaria*) and parietin (*X. parietina*) in lichen thalli also increased with increasing UV-B intensity.

Finally, thalli were exposed to 1000  $\mu\text{mol m}^{-2} \text{s}^{-1}$  for 24 hours in order to test their high-light susceptibility. Thalli previously exposed to UV-B light were less susceptible to high light than thalli without it.

After all data analysis, we will write a manuscript of the paper to be published in some international journal. Travel fellowship of ESP will be acknowledged.

During my stay I learned some new techniques (spectral reflectance) and analytical methods (analysis of secondary compounds). I also acquired new experiences and skills in planning of experiments.

Date: 14.4.2007

  
Hana Vráblíková