



Přirodovědecká
fakulta
Faculty
of Science

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice

STATEMENT OF THE BACHELOR THESIS REVIEWER

Name of the student: **Anna Polášková**

Thesis title: **Cyanobacteria and microalgae associated with mosses in wet meadows (High Arctic)**

Supervisor: **doc. Ing. Josef Elster, CSc.**

Reviewer: **RNDr. Linda Nedbalová, Ph.D.**

Reviewer's affiliation: **Department of Ecology, Faculty of Science, Charles University**

Point scale¹ Points

(1) FORMAL REQUIREMENTS

Extent of the thesis (for bachelor theses min. 18 pages, for masters theses min. 25 pages), balanced length of the thesis parts (recommended length of the theoretical part is max. 1/3 of the total length), logical structure of the thesis	0-3	3
Quality of the theoretical part (review) (number and relevancy of the references, recency of the references)	0-3	3
Accuracy in citing of the references (presence of uncited sources, uniform style of the references, use of correct journal titles and abbreviations)	0-3	3
Graphic layout of the text and of the figures/tables	0-3	3
Quality of the annotation	0-3	3
Language and stylistics, complying with the valid terminology	0-3	3
Accuracy and completeness of figures/tables legends (clarity without reading the rest of the text, explanation of the symbols and labeling, indication of the units)	0-3	3
Formal requirements - points in total		21

(2) PRACTICAL REQUIREMENTS

Clarity and fulfillment of the aims	0-3	3
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	3
Discussion quality - interpretation of the results and their discussion with the literature (absence of discussion with the literature is not acceptable)	0-3	2
Logic in the course of the experimental work	0-3	3

¹ Mark as: 0-unsatisfactory, 1-satisfactory, 2-average, 3-excellent.

Completeness of the description of the used techniques	0-3	3
Experimental difficulty of the thesis, independence in experimental work	0-3	3
Quality of experimental data presentation	0-3	3
The use of up-to-date techniques	0-3	3
Contribution of the thesis to the knowledge in the field and possibility to publish the results (after eventual supplementary experiments)	0-3	2
Practical requirements - points in total		25

POINTS IN TOTAL (MAX/AWARDED)	48	46 ²
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Comments of the reviewer on the student and the thesis:

The bachelor thesis of Anna Polášková is focused on the characterisation of Arctic wetland cyanobacteria associated with mosses. Although these associations are expected to play an important role not only in polar ecosystems due to the capacity of cyanobacteria to fix nitrogen, our knowledge of this phenomenon remains largely limited. This thesis will thus certainly contribute to further development of this research area.

Anna applied both morphological and molecular approach to study the diversity of cyanobacteria attached to mosses. I have to appreciate in particular that she focused on a poorly studied topic, which is almost always a more complicated way due to possible methodological problems. The core part of the thesis deals with testing of various mechanical protocols aiming to rigorously quantify cyanobacterial biomass. Since this methodology has not been fixed, yet, this part of the thesis brought important data that are important for anybody interested in cyanobacteria/mosses associations. The molecular part yielded 21 sequences of 16S rDNA that were unfortunately too short to perform a phylogenetic analysis. As in the case of biovolume assessment, I have to stress that the study of cyanobacteria attached to mosses presents many methodological problems. Therefore, I think that Anna's pilot results represent a good starting point for further studies.

Remarks:

- there were some minor formatting issues (numbering of chapters in the introduction) - not reflected in the point evaluation
- the part of introduction dedicated to molecular approach is rather technical, I would prefer to have more information about its contribution to the study of diversity of Arctic cyanobacteria
- for a bachelor thesis, I would prefer to have results and discussion in as separate chapters. As for the introduction, I would find useful to develop more the discussion of molecular results and not to limit it to methodological aspects.
- the term "heterocyte" instead of "heterocysts" should be preferred

² Enter the number of points awarded.

Suggestions and questions, to which the student has to answer during the defense.
Mistakes, which the students should avoid in the future:

Questions:

- 1/ In relation to quantification of cyanobacteria, you use the terms "biovolume" and "abundance". The data presented in Figure 9 represent really abundance (i.e. cell density) or biovolume?
- 2/ Based on the experiences gained during the work on the thesis, please describe the optimal methodological procedure to describe the diversity of your target group?
- 3/ Could you think about a possible setup of a field/laboratory experiment focusing on quantification of the impact of nitrogen fixation performed by cyanobacteria on moss growth?


Conclusion:

In conclusion, I

r e c o m m e n d

the thesis for the defense and I suggest the grade **excellent.**³

In Prague date 11.6.2018



signature

³ You can suggest a grade, which can be modified during the defense based on the presentation. However, if the reviewer is not present at the defense, the grade will not be counted. Grades: excellent (1). Very good (2), Good (3), Unsatisfactory/failed (4).

