



Přírodovědecká
fakulta
Faculty
of Science

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

OPPONENT'S REVIEW ON BACHELOR THESIS

Name of the student: Helene Sabine Gemeinhardt

Thesis title: Testing cross-amplification of microsatellites on European *Ranunculus* sect. *Batrachium* species

Supervisor: Mgr. Petr Koutecký, Ph.D.

Referee: PaedDr. Martina Žurovcová, Ph.D.

Referee's affiliation: BC CAS, Institute of Entomology, České Budějovice

	Point scale ¹	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	2
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	1,5
Quality of the annotation	0-3	2
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	0,5
Formal requirements – points in total		15
(2) PRACTICAL REQUIREMENTS		
Clarity and fulfillment of the aims	0-3	2
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	1,5
Discussion quality – interpretation of the results and their discussion with the literature (absence of discussion with the literature is not acceptable)	0-3	1,5
Logic in the course of the experimental work	0-3	3
Completeness of the description of the used techniques	0-3	3

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

Experimental difficulty of the thesis, independence in experimental work	0-3	2
Quality of experimental data presentation	0-3	1
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		19
POINTS IN TOTAL (MAX/AWARDED)	48	(33)²

Comments of the reviewer on the student and the thesis:

I do highly value the objective of the thesis, i.e. testing possibility of microsatellite cross-amplification in related species, which I do see as a good starting point for the student to learn basic techniques in molecular biology. Apparently, the student mastered all the essential experimental procedures. Overall, the thesis is written in good, comprehensible English, however the work is rather hastily presented, which demeans the effort invested in the laboratory experiments.

Regrettably, I must point out at quite a few issues. In the Introduction, there is quite detailed description of the focal species and method used (i.e. microsatellite markers). However, since the inspected genus belongs to the family Ranunculaceae, the information about the usage of microsatellites in this family is missing (there are at least 2 other papers on developing Ranunculus microsatellites available openly on the Internet), as well as description of the work by Wu *et al.* (2017), which is actually a base for the bachelor thesis. This reference appears for the first time in Methods - section 3.1 (Plant material used for analysis), but as the description of the loci amplified belongs to the section 3.3.

The whole segment Results is rather confusing and in some parts lengthy; summary tables would be definitely more understandable than description of the chromatograms of the sequenced loci. It is also not clearly stated, how many individuals per locus were successfully amplified in preliminary analysis and how many samples were sequenced.

Abstract, aim, discussion and conclusion repeat sentences about the use of primers for cross-amplification, which should be in the latter two parts more elaborated; namely the Discussion should also include comparison to the other work conducted on the related Ranunculus species.

Suggestions and questions, to which the student has to answer during the defense.

Mistakes, which the students should avoid in the future:

Suggestions

- In Introduction it would be good to start with some general explanation why to conduct such research;
- To use map instead of the Table of localities (which should be better placed in Supplements).

Mistakes

² Enter the number of points awarded.

- in Figures 12 and 13, there is missing description of the size marker;
- if presented in Results, gels of all loci amplified should be included, not just 5 loci out of 13;
- it is not clearly stated, how many individuals per locus were amplified and sequenced;
- description of locus B21 refers to the Figure 12, which is wrong; and Figures 14 – 19 are not mentioned in the text at all; the same applies to the Table 4; description of the Figures and Tables is not really self-explanatory;
- Placement of the Tables and Figures should follow the first indication in the text.

Questions

- 1) How did you verify quality and amount of DNA after isolation ?
- 2) How did you distinguish homozygotes and heterozygotes, especially in polypoids ?
- 3) What is the base for the conclusion that tested markers are not good for population genetic studies but may work for species identification ?

Conclusion:

In conclusion, I do

r e c o m m e n d

the thesis for the defense and I suggest the grade very good/good (depending on the defense presentation) ³

In České Budejovice date September 12th, 2019

PaedDr. Martina Žurovcová, Ph.D.

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).