

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Tropical AgriSciences



Czech University of Life Sciences Prague

**Faculty of Tropical
AgriSciences**

Methodical Manual for the MSc Theses Writing

2014

Contents

1	Introduction	3
2	How to write the Thesis.....	3
2.1	<i>General rules for writing scientific texts in English.....</i>	<i>4</i>
2.2	<i>How to format your thesis</i>	<i>4</i>
2.3	<i>How to cite the information.....</i>	<i>4</i>
2.4	<i>The thesis structure.....</i>	<i>5</i>
3	Description of particular parts of the Thesis	5
3.1	<i>Title page</i>	<i>5</i>
3.2	<i>Assignment.....</i>	<i>5</i>
3.3	<i>Declaration.....</i>	<i>5</i>
3.4	<i>Acknowledgement.....</i>	<i>6</i>
3.5	<i>Abstracts.....</i>	<i>6</i>
3.6	<i>Introduction and Literature review</i>	<i>6</i>
3.7	<i>Aims of the Thesis.....</i>	<i>6</i>
3.8	<i>Material and Methods</i>	<i>7</i>
3.9	<i>Results.....</i>	<i>7</i>
3.10	<i>Discussion.....</i>	<i>8</i>
3.11	<i>Conclusion.....</i>	<i>8</i>
3.12	<i>References.....</i>	<i>8</i>
3.13	<i>Annexes.....</i>	<i>8</i>
4	Tables and figures.....	9
5	Schedule and activities during Master thesis writing.....	9
6	How to submit your Thesis	9

1 Introduction

A goal of this text is to make easier writing of the student's thesis and to draw attention to the common mistakes those are better to avoid during your writing.

Main goal of a Thesis is to learn basic skills from a scientific thesis methodology, especially:

- write up of actual knowledge in set issues or topics
- work with scientific text (searching in literature sources, citation, writing)
- correct hypothesis formulation
- appropriate design of data collection
- data analysis and relevant statistical testing of suggested hypothesis
- appropriate presentation of results of own work
- results interpretation and discussion about the relevance of obtained results in a context with present knowledge

This manual is adequate for majority of Master theses carried out at FTA. In some cases, it is also possible to prepare thesis under different structure e.g. in form of project or study for practical application in state or private sector. The structure of such thesis is set up by thesis supervisor. This type of thesis should be specified in Badis application and it must be approved by head of department and the dean of the faculty.

2 How to write the Thesis

Working on a Master thesis is a long-term process, including writing it. Both, the research itself and Thesis writing require a certain level of knowledge, hence studying appropriate scientific literature is essential. This is the real basis of the success of the work on the thesis and reaching it requires a certain time. Be aware of it. Finally, quality, no quantity is finally assessed. A number of pages are not a relevant measure for an assessment. The content is the most important.

Working on a Master Thesis is based on good cooperation and communication with your supervisor. Agree clearly with your supervisor the way of cooperation and communication. Agree clearly also aims and methods of your research. Arrange with your supervisor a time schedule of your research. Supervisor may not be an expert on all aspects of your research. In such a case do not be afraid of looking for consultants.

In the course of writing of the Thesis, give enough time to your supervisor to read your handwritings and mainly whole MSc Thesis. Science is based on a communication. Ask more people to read your thesis. Your text should be understandable for wider range of readers. A removal of obvious spelling mistakes or totally non-clear sentences is very helpful. Do not write too long sentences. The reader will probably forget at the end what was at the beginning. Do not discourage our opponent with undue number of pages or wrong stylist level. Read carefully a printed version before the MSc Thesis submission.

We recommend studying also the instructions for authors of some important journal published online on their websites. The MSc Thesis is not the same as an article in a scientific journal of course. It should be more extensive, with longer Introduction (it means covering broader knowledge background to the relevant topic and usually present in chapter Literature review) and Material and Methods not limited only on a list of references but it should also include basic findings from these references.

2.1 General rules for writing scientific texts in English

The thesis should have clear structure, similarly as paragraphs should have also clear structure. It is optimal, if it appears in a first sentence an idea that you will further develop. You should write your Thesis in formal and literary language. You can write in British or American English but your grammar should be uniform in you Thesis.

It is recommended to make spaces between numbers and units (not “5kg” but “5 kg”). If you want to compare some facts, do not use letter “x” but use symbol “×”.

Latin terms are required to write in italics (e.g. *et al.*, *ad libitum*, *in vivo* etc.). Names of genus and species names are also written in italics (e.g. *Taurotagus derbianus*) but higher taxonomic units are not written in italics (e.g. subfamily Bovinae, order Cetartiodactyla). Note that if authors use "spp." (as a short way of saying that something applies to many species within a genus), these abbreviations such as "sp.", "spp.", "subsp.", etc. should not be italicized.

The contractions (e.g. don't, isn't, shouldn't ect.) are not used in scientific literature (and students theses as well). Quotation marks in English are placed on the upper part of the word (write “something” not „something“). You will also write numbers with decimal point “.” (e.g. 16.89 % not 16,89 %); commas “,” are dividing thousands in English (e.g. Estimated population of camels in Australia is 1,200,000 of animals).

The spaces between numbers and percent sign (%) is often missing in the English text. It is possible to use both, with or without spaces (there are no difference in the meaning in English) but it should be uniform in your whole thesis.

In any doubts about English grammar, do not hesitate to consult your texts with an English native speaker.

2.2 How to format your thesis

- Recommended font is Times New Roman or Calibri and font size 12 points.
- Use a wider line spacing (1.5).
- Use page borders: 3.0 cm for upper, 2.5 cm for lower, 3.5 cm for left and 2.0 cm for right end.
- Numbering of pages is recommended to start (page number 1) since Introduction section.

2.3 How to cite the information

Faculty of Tropical AgriSciences (FTA) developed obligatory specimen for style of citations and references. Student can choose, after agreement with the thesis supervisor, one of the styles of scientific journals - **PLoS** or **Ecosystems**. You must strictly follow the selected style; all commas, dots and colons must have the same distribution in your thesis as in the FTA specimen! You can find these specimens at websites of faculty.

Check precisely whether all references appear in the text or all citations are mentioned in references as well. If some citation or reference is missing, it will be very serious mistake.

2.4 The thesis structure

The thesis has usually these parts:

- Title page
- Assignment
- Declaration
- Acknowledgement
- Abstracts (in Czech and English)
- Contents
- List of tables and List of figures
- List of the contractions used in the thesis
- ***Text part of the thesis***
- Annexes

The text part of the thesis, containing the original research, has usually following structure:

- 1) Introduction and Literature Review
- 2) Aims of the Thesis
- 3) Material and Methods
- 4) Results
- 5) Discussion
- 6) Conclusions
- 7) References

Consider carefully where you put your written sentences, e. g. all describes of methods should be included really in *Methods* and not in *Results* or *Literature review*. The recurrence of the same things in different parts of the thesis is also common mistake. This mistake can easily occur in chapters *Results* and *Discussion* or also *Literature review* and *Discussion*.

3 Description of particular parts of the Thesis

3.1 Title page

You state your name there, name of your supervisor and consultants, name of the Thesis, year of submission and place where the Diploma Thesis was written (university, faculty, and department). The specimen of title page is included in the annexe of this manual.

3.2 Assignment

The Assignment is printed from application Badis. It consists of two pages. Signature by supervisor is not obligatory, but recommended.

3.3 Declaration

You should declare that the Thesis was worked out by yourself and that you used the literature that is mentioned in References.

Example of declaration: *“I hereby declare that this thesis entitled is my own work and all the sources have been quoted and acknowledged by means of complete references.”*

In...(place and date) ...
.....(signature of student).....
Name of the student

3.4 Acknowledgement

Express your thanks to whom you want. It could be appropriate to remember your supervisor and consultants. It is also appropriate to mention financial sources for the MSc Thesis. Pay attention to the fact that people read of *Acknowledgement* relatively often. An extensive epic range is not usually the best solution. About ten lines are often sufficient.

3.5 Abstracts

You should write two abstracts with the same content. One is in Czech and the second in English. Abstracts will include title of thesis in this language, abstract of your thesis and keywords. Abstract is one of the most important parts of your Thesis, because many people will read abstract first, before reading of the whole text. According to the abstract, they will decide whether the Thesis is interesting or not and whether to read it or not. Abstract represents summary of the whole work, you should briefly describe aims of your thesis, methodology, the most important results, conclusions and its importance to the science. This is why you write your Abstract in the end.

You should provide approximately five **keywords** or sets of words (e.g. agonistic behaviour, *Taurotragus derbianus*). The keywords define more the topic of your thesis and so you should not repeat the same words as in the title of your thesis.

After reading of an abstract, everybody should know what about your thesis is. It is necessary to fit one abstract in one page. Recommended length is about 200 – 350 words for one abstract. Abstracts are written in past tense.

3.6 Introduction and Literature review

An *Introduction* should be a literature survey that introduces also less knowledgeable reader into set problems. You should describe here why to study your problem and use already citation in the text.

Next, you should summarize current knowledge about set problem. Certainly, it does not mean that it must be a colossal work with many pages and an exhausting list of thesis about studied problems appeared during whole human history. Try to extract from literature significant information and those give into the connections. Studied problems should be connected to some basic questions of a wider character. Then study also another thesis/works than only about your favourite taxon.

If you cite someone, you must have a reason for it and provide some concrete information.

Do not write for example: **Wild camels were studied by Reading et al. (1996).**

Write for example: **Reading et al. (1999) observed Wild camels in Mongolia: The average group size was 10 camels.**

Your MSc Thesis will not finished by the searching for literary facts. It is necessary to critically assess these facts and clearly show where the gaps of our knowledge are. Do not forget to clearly distinguish between facts, opinions and speculations.

Whole text must be logically interconnected. Sentences must follow previous thought. You are writing a scientific story and its point are your goals and results. The literature review should be step by step directed to formulation of aims of your thesis by enhancing gaps in the knowledge which you aim to fill in by your own work.

It is possible to write this chapter in present or past tense.

3.7 Aims of the Thesis

In this chapter, you formulate aims of your Thesis, first by some general aim and then by particular aims, those preferably in the form of tested hypothesis. Write clearly what new your MSc Thesis should bring and how do you want to reach it.

Aims should be written in the past tense.

Example: The MSc Thesis goal was to find the differences in timing of breeding season of camels in the wild and in captivity.

Hypothesis (or questions) should clearly follow from an *Introduction*. There should not appear any other topic that is not actually mentioned in your thesis.

Even if you will probably write this part of thesis before your research activities, you should write your goals and hypothesis in the past tense.

3.8 Material and Methods

This part should be very precise. You must describe all carefully that anyone should repeat your experiments or observation. Do not forget to mention a number of samples, animals' age and sex, daily and annual period, breeding conditions or localities description (for example with a map or tables with site or subjects characteristics), specific instrumental equipment and other details. It could be also suitable to mention how you prevented an influence of repeated testing of the same individuals and why you think that a number of individuals is sufficient for answering your questions. Used statistical methods and computer programs are necessary to describe. If you use abbreviations, state their list. You should write this chapter in past tense.

Material and Methods are often divided in several subchapters, e.g.: material (animals), experimental design, data collection, data analysis etc. Reading of the MSc Thesis is easier, if a structure of subchapters is similar in more chapters (*Material and Methods* × *Results* × *Discussion*). Try to be relatively brief but you must include all important facts, e.g. fact that you wrote down your notes by pencil to the sheet of paper with size A4 is not necessary to mention.

3.9 Results

Consider carefully which part of your results should be present in chapter *Results*. There should be mainly results that contribute to the answering of your questions. Basic data (for example tables with measured sizes or individuals genotype) belong more likely to the *Annexes* or to the attached CD.

Keep in mind that pictures rather express ideas, while tables show data. Do not state data from the tables again in the text. Pay attention also to the duplication of data contained in the tables and graphs. However, every table and graph must be mentioned in the text (simply said: the table shows data that are further commented in the text). Graphs are usually referred as Figures.

Example: As shown in Figure 1, the population size of Wild camels has been halved in the last fifty years. or The population size has been halved in the last fifty years (see Figure 1).

The tables and the figures should be numbered and arranged according to numbers (which means that Table 1 appears in the text earlier than Table 2).

Pay attention to the legends of the figures and the tables. Graphs must be self-explanatory and the description texts of axes and legends should be precise. The tables should be as simple as possible. It is recommended to use invisible vertical lines and a number of horizontal lines should be reduced to a minimum.

Of course, you can use the coloured graphs or tables. But the simplicity is recommended. It is enough if you use only black and white colours (of course, it must not be valid for pictures or photos). If you use coloured graphs, they should be distinguishable also in black and white version (if possible).

You should write your results in past tense. You can write in plural (**We found that ...**) or singular (**I found that ...**) and it is possible to use both, active (**I ... / We ...**) or passive voice (**It was found that ...**).

Do not forget that this section is also a TEXT, not an overview of tables and figures or short summary of statistical test. You must describe your results by a comprehensive text with full sentences.

3.10 Discussion

Do not underestimate chapter *Discussion*. It is the most important part of your thesis. But according to this it is also the most complicated for writing. Writing of very good *Discussion* requires plenty of time. Expect it! You will not do it in one evening. Sometimes, it can occur that after writing of *Discussion* you will have to rewrite for example whole *Literature review*.

It is good to start with the interpretation of your results. It means: do not repeat your results, but interpret them. Explain WHY you found out what you did; you can refer to text from previous chapters or tables and figures.

Discussion must also show how results reflect the current knowledge about set problems. You must discuss both, the harmony of obtained results with published results and also their disharmony. Explain the originality of your results. If there existed disharmony of your results and results of other researchers, then it is necessary to explain, why it is possible.

Example: **Zhirnov and Ilyinsky (1986) reported smaller average group size of Wild camels then this study. However their research was carried out in different season.**

Do not forget that you defined questions and goals at the beginning of your research (in the Aims section). It is necessary to answer them. You can also indicate the next research after your basic findings. You can also formulate new hypothesis that could be tested in the future. Discussed scopes order should be the same as it was in the *Literature review*. The MSc Thesis reader should be ready for the *Discussion* after reading of the *Introduction* and *Literature review*. New facts that were not mentioned in the *Literature review* should not occur in the *Discussion*. You can write this chapter in present or past tense.

3.11 Conclusion

This chapter mention only the most important result. Present briefly what new your thesis brings, summarize the most important findings and present some recommendations or possibilities of usage in practice. Thus do not repeat the facts from the Material and Methods or other chapters. Write this chapter in past tense.

3.12 References

References are lined up alphabetical (A to Z) in case of Ecosystem style or according to order of occurrence in the text in case of PLoS style. A style of references is set by faculty. You must use this style. The style is available at faculty and department websites. For more information see chapter 2.3 *How to cite the information*.

3.13 Annexes

Bigger tables and figures which are interesting but suitable for using in Thesis can be included in *Annexes*. Page numbers of Annexes have usually different style than in “true Thesis” (e.g. Roman numerals). Chapter *Annexes* is not included in the *Content*. You should provide the *List of Annexes* prior to concrete annexes.

You can provide primarily data and protocols in annexe as well. The best solution is to attached CD with data, protocols and also manual, how to orient in the *Annexes*. A file with manual should be easily identifiable. Name it for example manual or readme. Data should be saved in format that is possible to open in some general program (for example Excel or PDF).

4 Tables and figures

It is possible to place tables and figures (graphs and pictures) in the text part of your thesis. But all tables and figures included in your thesis must have some reason for their presence. They need some connection with the text and it is essential to refer to them in your text (e.g. *The distribution of Wild camels is presented in Figure 1. The length of breeding season differed significantly (Table 1).*

Graphs can be presented as Graph or included like Figure (together with pictures). The numbers presented in your graphs or tables must keep the style of language (be careful with decimal points).

All tables and figures must have descriptive **captions**. Captions of the tables are placed before the table while captions of the figures are place under the figure – see some examples in the annexe of this manual. It is possible to use whole words (Table, Figure, Graph) or shortened words (Tab., Fig.) but the style must be unified in the thesis.

The language of tables and figures should be the same as language of the whole Thesis. Every table and figure should contain their source (e.g. citation, authorship, or formulation “based on...”)

5 Schedule and activities during Master thesis writing

The topic of the Master thesis is chosen in the beginning of winter semester in the 1st year of master studies. The whole Thesis Assignment should be finished in cooperation with the supervisor till the end of the first semester.

Students will receive credit every semester; 1) for the Thesis assignment, 2) for the Research design, 3) for the Data Analysis and 4) for the Thesis Submission. The credit will be given by the Thesis supervisor and only in case if all tasks connected with the credit will be fulfilled.

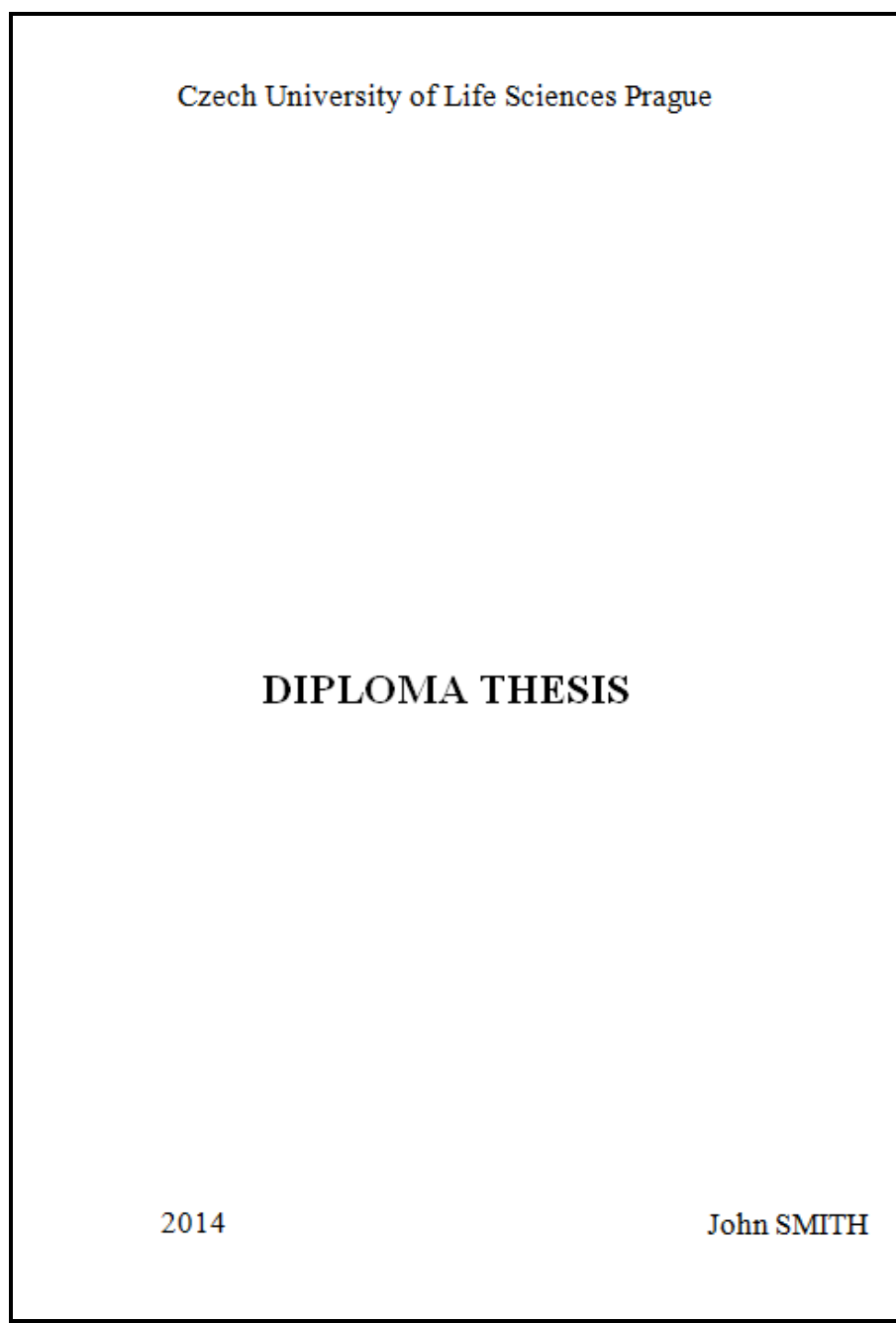
Every submitted thesis will undergo a control for plagiarism. It is recommended to control your thesis yourself before submission, e.g. at web pages www.odevzdej.cz or similar. The submitted thesis will be judged by the Thesis supervisor and one external opponent. A thesis defence takes a place separately, after a state exam.

6 How to submit your Thesis

The Thesis is submitted to the department secretary in two copies with firm binding. Both copies should include CD with your thesis in PDF. Do not forget to sign your *Declaration* and to write your name at both CDs. You must also to submit the **Thesis in PDF in application Badis** at the same time. All terms are firm and the late submission will not be tolerated. Do not forget to number the pages and check, if the numbering corresponds to Content.

The **cover** (boards) of **MSc. Thesis must have blue colour**. The text on the cover of MSc. Thesis is in English (see the specimen in annexe).

Annexe 1: The specimen of the cover of thesis



Annexe 2: The specimen of title page

The department is set up according to the supervisor.

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Tropical AgriSciences

Department of



Czech University of Life Sciences Prague

**Faculty of Tropical
AgriSciences**

Name of the thesis

Bachelor/Master Thesis

Prague 2014

Supervisor:

name

Author:

name

Annexe 3: Examples of table and figure

Table 1. Zoological gardens included in the study with the numbers of camels kept and the number of filial and non-filial sucking bouts in herds.

Zoo	Year	Adults (M, F)	Nursing F	Calves (M, F)	Total SB	Non-filial SB	Non-filial SB (%)
Brno	2006	1,4	2	0,2	81	0	0,00
Brno	2007	1,3	1	0,2*	26	3	11,54
Zlín-Lešná	2005	1,2	2	2,0	58	2	3,45
Ostrava	2006	1,7	2	1,1	85	16	18,82
Ostrava	2007	1,7	3	1,2	36	9	25,00
Praha	2006	1,5	2	1,1	87	2	2,29
Total					373	32	8,58

(M - males; F- females; SB – sucking bout).

*One of the calves was already weaned by its mother but occasionally sucked from a non-maternal dam.

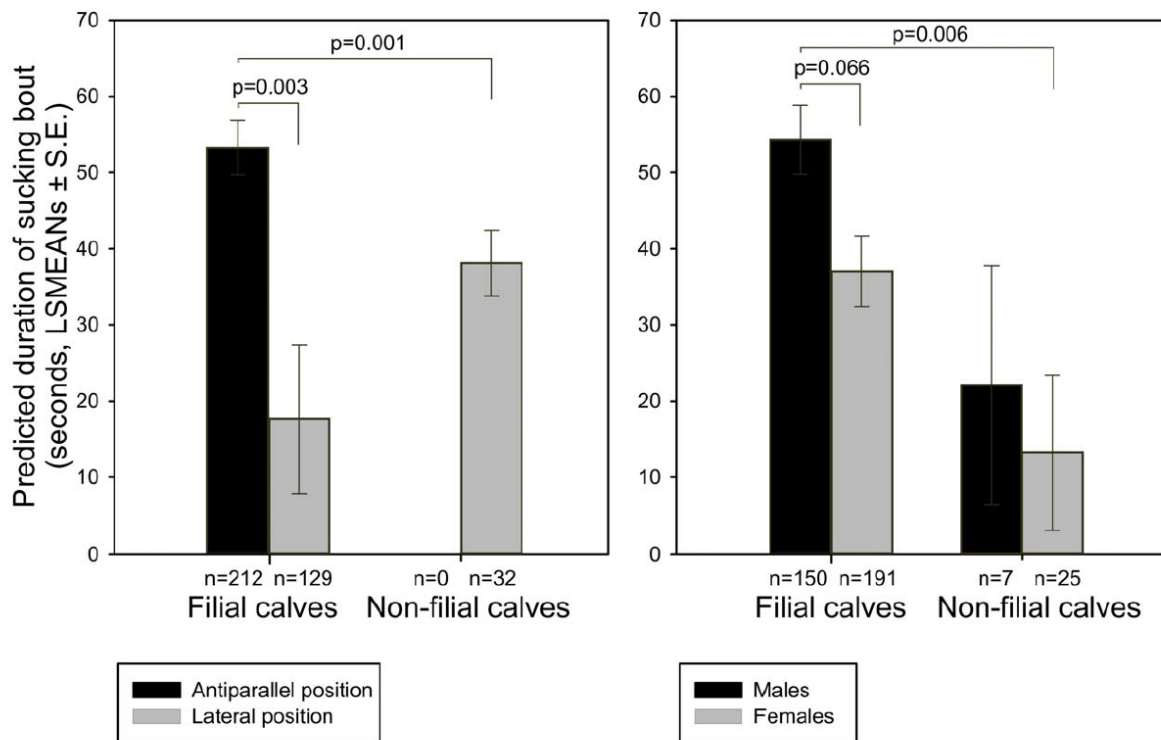


Figure 5. Sucking bout duration (LSMEAN ± SE) for filial and non-filial calves according to position and for filial and non-filial male and female calves.

(Source: Brandlová K, Bartoš L, Haberová T. 2013. Camel Calves as Opportunistic Milk Thefts? The First Description of Allosuckling in Domestic Bactrian Camel (*Camelus bactrianus*). PLOS ONE 8: e53052).

Methodical Manual for the

MSc Theses writing

Faculty of Tropical AgriSciences

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