

4 The Thesis

4.1 Introduction

In the final phase of your studies it is obligatory to do an MSc-thesis. Registration of theses and new subjects is arranged by Prof. Imke de Boer preferably three months in advance. A major thesis is 36 ECTS, a minor thesis is less than 36 ECTS. Appendix VII shows how many working weeks you need to spend to fulfil the required ECTS. Research meetings (RESEMEET) for presentation of research plan and results are coordinated by Fokje Steenstra.

4.2 Contents of theses

A thesis within the chair group Animal Production Systems (APS) is usually linked to ongoing research. APS-research is aimed at characterising, analysing, evaluating and designing sustainable animal production systems. Frequently, parts of the research project are done in combination with other disciplines, for example, other chairs within Animal Sciences or departments or institutes outside Animal Sciences.

In each thesis a description is given of the production system the research is related to (boundary, limits, internal relationships and relevant inputs and outputs). Also the context of the production system studied has to be described. The details of the description are defined by the problem formulation and research questions. In the discussion, the consequences of the research results for the functioning of the production system are discussed with scientific literature.

To get some idea of possible thesis subjects offered by APS an overview of recently finished theses with abstracts is on our website under Education. In the rare case a student comes with a thesis subject him or herself, the student should prove that it is a relevant problem during consultation with Prof. Imke de Boer.

Discuss your plans at least 3 months before starting your thesis. An appointment with Prof. de Boer can be made via the APS-secretariat (tel. 0317-483959 or mail to Office.APS@wur.nl).

NOTE: Plagiarism is legally prohibited. See the Student Charter for the possible consequences.

4.3 Phasing

4.3.1 General

A thesis consists of conducting research independently. The following phases can be distinguished:

1 *starting phase* (approx. 1 month)

- getting familiar with the subject by reading literature
- learning methodological techniques

- formulating research plan
- approving thesis contract (available via the APS website)
- making a budget (if applicable) and handing in with thesis contract
- presenting the research plan in a Resemeet

2 *realisation phase* (depends on size)

- conducting research and analysing data

3 *completion phase* (approx. 1.5 month)

- writing draft report
- presenting a colloquium in a Resemeet
- handing in concept report for the exam
- oral exam with supervisor and professor
- finalising report and abstract

Each phase has its own objectives, results and evaluation. These depend on the type of thesis, a literature study has a different construction than a report of an experimental subject.

4.3.2 Starting

The objectives of the starting phase are:

- a) Delineation of the research objective and placing the problem selected in a wider context (for example, by literature search).
- b) Formulating a research question.
- c) Considering/developing possible solutions (through, for example, literature search, developing techniques) and selecting the method to be used.
- d) Formulating a work plan with time schedule
- e) Give a clear oral presentation on your research plan.
- f) Research costs need to be agreed upon by your supervisor. Personal traveling costs and language courses are not included in the research budget.

It is important that each of these aspects is considered in the subject to be studied. Appendix I provides the information a research plan should include.

4.3.3 Realisation

The objectives in this phase are:

- a) Getting answers to the research question(s).
- b) Acquiring skills (interviewing, surveys, data collection and analysis, experimenting, modelling, computer use).
- c) Working independently in cooperation with supervisor(s).
- d) Indicating problems and discussing them with the supervisor regularly.

In this phase students will work on the research question to be investigated as independently as possible, however regular contact and discussion with the supervisor are necessary. A fixed time for discussion can contribute to a good contact with the supervisor. The student is responsible for regular contact.

In the realisation phase the PC is often used. Student computers in Zodiac or in Forum are available for students working on their thesis.

4.3.4 Completion

Objectives of this phase are:

- a) Interpreting the results and comparing these with relevant results from the literature.
- b) Writing a correct scientific report, taking into account the layout, citing scientific journals, websites and other sources.
- c) Presenting and defending the research and results orally in a colloquium and during the exam.

In the completion phase students have to present their research orally and in writing. This means that the research is concluded with an oral presentation by a colloquium, and a final thesis. Each student has to give a colloquium (in English), before the final exam. The supervisor makes an appointment for the colloquium with Fokje Steenstra. A by the supervisor approved abstract in English containing all elements of the research (max. 350 words) should be mailed to Fokje before 8.00 am on the day of the presentation.

The research should be laid down in a thesis (in English or in exceptional cases in Dutch) or an article (in English) of maximum 40 pages text (excluding appendices). Appendix II presents the layout of a thesis/article. The 350 words abstract should also be sent separately by e-mail to the supervisor. This abstract will be put on the APS website. The choice whether to write an article or a thesis is usually made at the beginning of the completion phase. The draft report is shown to the supervisor, who will provide comments, which will be processed in writing the final report. In agreement with the supervisor a date is fixed for the oral exam. During this oral exam the student will get a final mark.

The concept report is handed in in duplicate (1 for the supervisor and 1 for the professor) not later than 2 weeks before the fixed date of the final oral exam. The concept report should include the standard APS cover. A template for this cover can be obtained by sending a request to Theo Viets by mail.

4.3.5 Assessment of colloquium and thesis

The supervisor will judge whether the objectives in the different phases are met. The professor also judges the report as to contents and judges the oral defence during the final exam. The total assessment of the thesis work is done at the oral exam by using the university assessment form (Appendix III). The colloquium is judged by two independent staff members of APS (Appendix VI). The mark of the thesis is recorded by our secretary at SSC after receiving the pdf-file of the approved report and the abstract.

4.3.6 Finalising

The number of copies of the final report is determined after the exam. After the exam a pdf-file (save as smallest file size) of the final report (including cover) has to be sent to our secretary. She will copy the final thesis. Colour graphs and/or figures are only allowed after agreement with the supervisor. In this case the student has to take care of copying the final thesis.

4.5 Research meetings (RESEMEET)

Students are expected to present their thesis research plan and the final results in research meetings (RESEMEET) with APS-students and supervisors. These RESEMEETs

are regularly held on Thursday mornings, during which the official language is English. Students working on an APS-thesis are expected to attend all presentations of fellow students and actively join the discussions. The aim is to exchange and learn from other research projects. Absence should be discussed with the supervisor. Students should record the dates of the attended Resemeets on the form in Appendix IV. This form should be attached as an appendix to the concept thesis. Resemeets are usually announced by e-mail two weeks ahead as well as via the agenda of the APS website (www.wur.eu/aps).

For the presentation of the research plan 10 minutes is reserved, and for the colloquium 20 minutes presentation time is reserved. The student is expected to fill that time and not to exceed the time limit. After the presentation 10 minutes is reserved for questions from and discussion with the audience. Tips and guidelines for the presentation are given in Appendix V. For the presentation of the research plan a 2-pages English summary should be prepared and approved by the supervisor, for the presentation of the colloquium a 350 words abstract should be prepared and approved. Both summary or abstract should be sent by mail before 8.00 am of the day of the Resemeet to Fokje Steenstra.

The presentation is assessed by two staff members on contents, use of media, clarity, language, contact with the audience (Appendix VI). In addition, suggestions on how to improve are given. The mark for the colloquium will be included in the final mark for the thesis work.

APPENDIX I Contents of the research plan

- * *Data*
 - name student
 - name, number and number of ects of thesis
 - name supervisor(s)
 - agreements on supervision (if different departments)
 - place of realisation (if not with department)

- * *Title research*

- * *Introduction*
 - brief outline of the problem based on literature
 - importance of the subject
 - delineation of the problem including system and context description and boundary definition
 - definition of the problem

- * *Materials*
 - description of the data

- * *Methods*
 - description of the research methods

- * *Plan of work*
 - a realistic time schedule

- * *Cooperation*
 - students or other cooperating persons

- * *Remarks*
 - possible additional remarks that are important

APPENDIX II Layout of thesis or article

Maximum size allowed is 40 pages text (excluding appendices).

- * Cover - layout is similar to title page, standard layout (obligatory!), to be obtained from Theo Viets

- * Title page
 - title
 - name student
 - student registration number
 - date
 - specialisation
 - course code thesis

- * Abstract - max. 350 words in English

- * Introduction
 - reason for research
 - discussion on literature
 - definition of the problem

- * Materials - description of the set-up of the research and of the data used

- * Methods - description of the methods used

- * Results - description of the results on the basis of tables, figures, with interpretation

- * Discussion - critical discussion of the results, from which an answer to the problem should emerge

- * Conclusions - on the basis of the discussion a number of conclusions are formulated

- * References - arranged according to scientific journals, websites including date of reference and other information (for example, oral communication, newspapers and scientific journals)

- * Appendices

Remark: This is a standard layout; variations are possible, such as combining materials and methods, or combining results and discussion. If the research concerns a literature search, the layout may also differ.

APPENDIX III Assessment form

Thesis evaluation Wageningen University

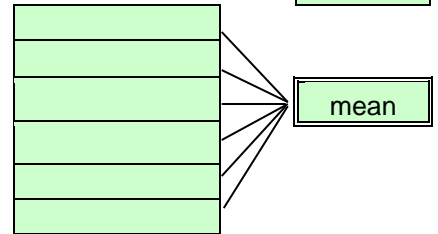
Name chair group	Animal Production Systems Group	
Name student		
Registration number		
Study programme		
Specialisation		
Code thesis	APS-804..	
Short title thesis		
Date examination		Signature
Supervisor chair group		
Supervisor outside chair group (if so)		
Second reviewer/examiner		

Research competence *

- 1 Commitment and perseverance
- 2 Initiative and creativity
- 3 Independence
- 4 Efficiency in working with data
- 5 Handling supervisor's comments and development of research skills
- 6 Keeping to the time schedule

**grading
mark 1-10**

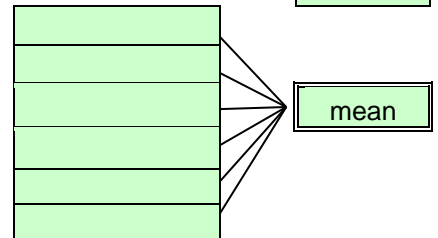
relative
weight *
40%



Thesis report *

- 1 Relevance research, clearness goals, delineation research
- 2 Theoretical underpinning, use of literature
- 3 Use of methods and data
- 4 Critical reflection on the research performed (discussion)
- 5 Clarity of conclusions and recommendations
- 6 Writing skills

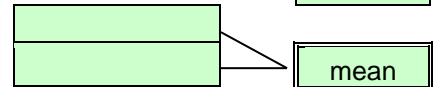
40%



Colloquium *

- 1 Graphical presentation
- 2 Verbal presentation and defence

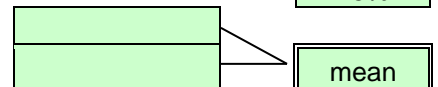
5%



Examination *

- 1 Defence of the thesis
- 2 Knowledge of study domain

15%



TOTAL (weighted)	mean
FINAL GRADE	

APPENDIX IV RESEMEETs (RESEArch MEETing) attendance

Student name:
Thesis ECTS:
Start date thesis:
Examination date:
Proposal presentation on ¹ :
Colloquium on:
Other RESEMEETs attended:
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

¹: fill date for RESEMEETs where you've presented or were present (as public)

APPENDIX V Tips and rules RESEMEET (RESEarch MEETing)

- * Spoken language is English. Therefore, everything has to be prepared in English. If only Dutch-speaking people are present, you can present in Dutch.
- * In a RESEMEET you present your research proposal, thesis results (colloquium), or your internship research results.
- * Total time for a Research proposal is 20 minutes, of which 9-10 minutes for the presentation, and 10 minutes for discussion. Total time for the Colloquium is 30 minutes, of which 18-20 minutes for the presentation and 10 minutes for discussion. Total time for the Internship presentation is 25 minutes of which 14-15 minutes for presentation and 10 minutes for discussion. Fill your presentation time, but do not exceed, so practise.
- * Before 8.00h on the day of the presentation an English summary of at most two A4, or for a colloquium a 350 words abstract (please add name, research title, etc.) must be handed in (by email) at Fokje Steenstra (room E2210; phone 483651). This will be copied as a hand-out. Guidelines for the summary are given below.
- * You have to be present at least 15 minutes before the first presentation of your RESEMEET session starts. You can put your presentation on the pc present in the room.
- * During your thesis period **you're obliged to attend all Resemeets**, on top of the two in which you will present your research. The aim is to exchange and learn from other research projects. If necessary, call off at your supervisor.

Contents summary research proposal:

The emphasis will be usually on the introduction, method(-s) and materials.

Title, subtitle(-s)

Name student and supervisor(-s)

Code thesis and credit points

Introduction

Research questions/objectives/hypothesis

Method(-s) and material

Time schedule

Contents summary internship:

The emphasis will be usually on the results, discussion and conclusions.

Title, subtitle(-s)

Name student and supervisor(-s)

Code internship and credit points

Introduction

Research questions/objectives

Method(-s) and material

Results

Discussion

Conclusions

Recommendations

NOTE:

During your presentation, keep in mind that the audience wants your attention (instead of admiring your own sheets and showing your back)

APPENDIX VI Presentation Assessment form

Observation presentation MSc proposal/colloquium

APS 2018

Student:

Observer:

Content (complete and clear presentation of..)

Mark:

	Poor	Sufficient	Good ¹
Introduction of subject	Poor	Sufficient	Good ¹
Objective of research	Poor	Sufficient	Good
Explanation of methods	Poor	Sufficient	Good
Results	Poor	Sufficient	Good
Discussion of research	Poor	Sufficient	Good
Conclusions and recommendations	Poor	Sufficient	Good
Handling of questions	Poor	Sufficient	Good

Remarks:

Presentation skills

Mark:

	Poor	Sufficient	Good
Opening and ending of presentation	Poor	Sufficient	Good
Structure / outline presentation	Poor	Sufficient	Good
Layout / readability sheets	Poor	Sufficient	Good
Language / clear / phrase	Poor	Sufficient	Good
Audibility	Poor	Sufficient	Good
Enthusiasm / liveliness	Poor	Sufficient	Good
Tempo / short breaks	Poor	Sufficient	Good
Time management	Poor	Sufficient	Good

Remarks:

General compliments and/or tips:

¹ Good does not necessarily mean excellent

APPENDIX VII ECTS and thesis/internship working time

1 ECTS is the equivalent of 28 hours student working time. Wageningen University assumes that students following courses have a working week of 42 hours (excluding breaks), hence covering 12 ECTS in 8 weeks.

At most places, however, employees have a working week of 40h. The following table translates the ECTS to working weeks of 40 hours, so you know the period of your thesis and/or internship.

ECTS	weeks (40h)
6	4.2
12	8.4
24	16.8
27	18.9
30	21
33	23.1
36	25.2
39	27.3