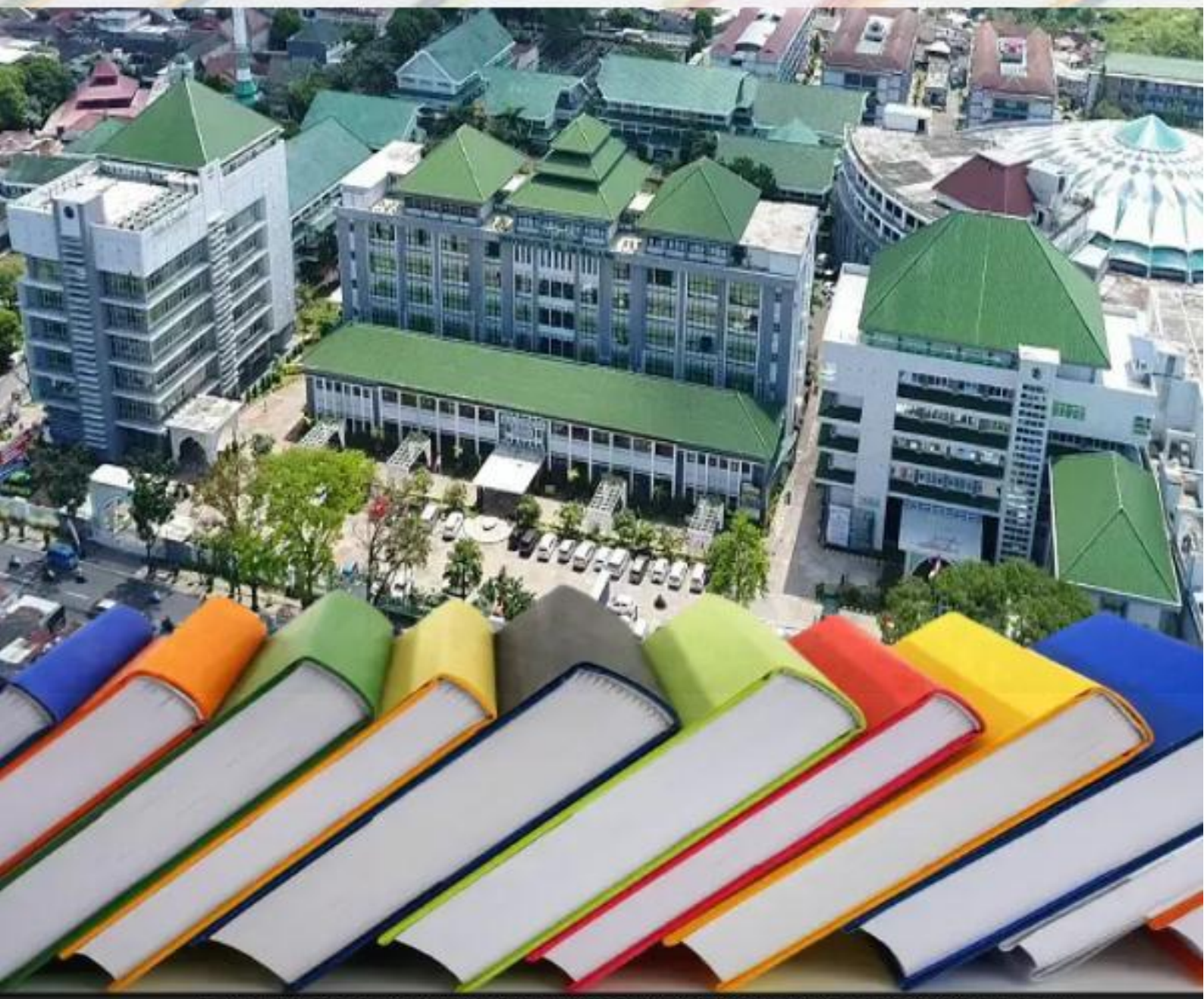
FACULTY OF
ANIMAL HUSBANDRY

BAN-PT

Manual Handbook

Undergraduate Thesis



ANIMAL HUSBANDRY STUDY PROGRAM

UNIVERSITY OF ISLAM MALANG

MANUAL HANDBOOK
UNDERGRADUATE THESIS

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Date	April 19, 2021
Submitted by	Management Representative Ir. Sri Susilowati, M.M.
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FOREWORD

Praise be to *Alhamdulillahi Robbil 'Alamin*, Allah SWT. has bestowed His grace and guidance so that the compiling team can complete the revision of this Thesis Writing Guideb ook well . This thesis writing guideline is a guideline for final semester stud ents who will carry out their final assignment contains a description of the procedures for writing proposals and research reports (thesis), so that the results of writing that are in accordance with standardized manual.

This Thesis Writing Guidelines were prepared based on the Old Thesis Writing Guidelines in the Faculty of Animal Husbandry , Unisma which were updated and revised according to the current *trend* of scientific writing development , for example the existence of rules for writing literature sourced from the internet and so on Writing Guidelines. This thesis was written as the Fourth Edition (fourth) with the aim that there will be subsequent editions so that this Thesis Writing Guidelines are continuously revised in accordance with the development of scientific writing .

Finally , we do not forget to thank the Lecturers of the Faculty of Animal Husbandry and all parties that it is impossible to mention one by one who have helped in the process of completing the publication of this thesis writing manual .

The Drafting Team realizes that this Thesis Writing Guidelines are still not perfect , but the Drafting Team hopes that the Thesis Writing Guidelines will be useful for the entire academic community of the Faculty of Animal Husbandry , University Islam of Malang. For the sake of improving this Thesis Writing Guidelines in the future, we hope for criticism and suggestions .

Malang, August 10, 2019

Team

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INTRODUCTION

Based on the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System and Curriculum of the Animal Husbandry Study Program, Faculty of Animal Husbandry, Islamic University of Malang (UNISMA), that writing a thesis is one of the requirements for obtaining a bachelor's degree (S1). Thesis is a scientific work in the field of study written by undergraduate students based on the results of field research, laboratory and literature review on a problem that is adapted to the student's field of study concerned. To write a thesis, a student is guided by two supervisors consisting of the main supervisor and member supervisor. The supervisor will provide direction in determining the general framework of the research and participate in the observations of the students under his guidance so that the research results obtained are empirical data.

Thesis is a student's original scientific work, if it is a plagiarism it means violating the Republic of Indonesia Law Number 20 article 70 of 2003 with a maximum imprisonment of two years and or a maximum fine of Rp. 200,000,000.00 (two hundred million rupiah). The purpose of writing a thesis for learning for undergraduate students is to conduct research and write scientific papers as one of the weighting of academic abilities, so that students are able to integrate their learning experiences in solving problems scientifically. In the end, students are expected to be able to behave, think and act comprehensively based on the experience and skills gained and be able to put it in written form that can be scientifically justified.

STANDARD OPERATING PROCEDURE (SOP)
Undergraduate thesis

1. **Thesis Program Requirements:**
   a. Registered as an active student in the ongoing semester (shown by a herregistration card) and if the semester has not been completed, it is mandatory to do her-registration in the following semester)
   b. Thesis programmed in the Study Plan Card (KRS)
   c. Students have taken a minimum of 130 credits
   d. Minimum Grade Point Average (GPA) is 2.00
   e. KHS has no value of E and the value of Islam does not have D, then the value of D is not more than 10%
   f. Pass the Research Methodology/Scientific Writing course with a minimum grade of C
   g. Has taken the Islamic comprehensive test.
   h. Have passed the TOEFL exam with a minimum score of 450
   i. Has participated in new student orientation and introduction to Islam

2. **Procedure:**
   a. Paying Thesis Fee to a **Sharia Bank Account**
   No. 001.11.002269 on behalf of Dr.Ir. Inggit Kentjonowaty, MP.
   or **BRI Account No. 1259-01-002079-50-0 Faculty of Animal Husbandry**

   b. Submit the required thesis guidance file:
      - Photocopy of proof of payment for thesis
      - Photocopy of her card during the semester
      - Photocopy of grade record throughout the semester (temporary transcript)
      - Photocopy of study plan where the thesis is programmed

   c. Submit the requirements file and the title submission form from the administrative staff to the Head of the Study Program (KAPRODI) and students receive a thesis writing manual.
   d. The Head of Study Program will process thesis guidance:
   Provide a cover letter to the agency that will be the location of the research, determine 2 (two) thesis supervisors and issue and sign a thesis supervisory lecturer's decree.
   e. The head of the study program provides a thesis guidance monitoring card , a title submission letter to the supervisor through students
   f. Students prepare proposals and carry out research after obtaining approval from the supervisor

g. The main supervising lecturer or represented by the member's supervisor will carry out monitoring and evaluation of research activities and the costs are borne by students. his guidance entrusted by administrative staff to be given to the relevant Lecturer.

h. Students are required to carry out research seminars with the approval of their supervisor before taking the thesis exam

i. If the thesis has been approved by the two supervisors, the student can apply for a thesis exam to the Head of the Animal Husbandry Study Program to determine the time of the exam and the testing team.

j. After being declared to have passed the thesis exam, students must submit a thesis report that has been bound and approved by the two supervisors and has been revised by the examiner team, knows the Head of Study Program and is approved by the Dean

k. Students **are required to** make scientific papers/articles from the results of their research to be published in **scientific journals**

3. Sanctions:

a. The deadline for the completion of the thesis is 2 (two) semesters in accordance with the established academic calendar. During this time, students still have to do her-registration (her card will be a requirement in applying for graduation in the current semester)

b. If in 2 semesters the student cannot complete his thesis, then with the consideration and approval of the supervisor, he can apply for an extension for 1 (one) semester

c. If during the extension period they cannot complete their thesis, then the student is obliged to repeat the entire administrative process of thesis supervision with a fixed or different title

d. The period of completion of the final project is calculated from registering until the thesis examination is carried out and is declared to have passed the thesis examination.

4. **Requirements for the thesis exam** :

a. If a student is taking a thesis exam, he or she must go to the Study Program / Head of Department by bringing the following exam requirements:

1. Minutes of thesis seminar and seminar attendance list
2. Seminar card and guidance monitoring card
3. Pas photo wearing alma mater coat and tie (for those who are veiled, use a black headscarf):

a). Size 4 x 6 (**black and white without *background***) as much as 5 sheets (*not color photos printed in black and white*)

b). Size 3 x 4 **in color with a white *background***
as many as 3 sheets

4. Photocopy of high school diploma and / or diploma diploma legalized 2 pieces
5. The original registration card for the semester in question
6. Photocopy of the receipt for payment of thesis fees from Vice Dean I
7. Interim transcript and KHS per semester
8. Transcripts and diplomas from the original college, Conversion of Values and Transfer Certificates for students changing levels or transfers
9. Photocopy of community service Certificate which has been legalized by Research and Community Service Institution.
10. A photocopy of the certificate of the Islamic deepening exam that has been completed
    legalized by LPITI, and Photocopy of TOEFL Certificate, New student orientation and intro to Islam
11. Transcript from the university of origin and its conversion for
    transfer or transfer student
12. Fill in the form of Alumni biodata and Free Financial Admin.

b. Students bring the test letter to the Supervisory Lecturer
c. After completing the thesis exam, students are expected to fill out an agreement letter for the completion of the thesis revision a maximum of two months after the thesis exam) which is approved by the Supervisory Lecturer.
d. After being declared to have passed the thesis exam, students immediately revise the thesis and **are required to** make scientific research articles (*hardcopy-softcopy*) equipped with Indonesian and English abstracts to be published in **scientific journals** (Scientific Article Format attached) and submit their academic certificates.

MECHANISM OF THE THESIS WRITING PROGRAM

Requirements file in the form of FC
- Proof of thesis payment (Sharia Bank or BRI)
- Herr card . semester , grade records, provisional transcript fr om administration staff

Submitted by Head

- Appointed and issued a decree of the main thesis supervisor and members (2 authorized lecturer s)
- Make a cover letter for permission to

The Head of Study Program through administration staff provides a thesis writing guidelines, a thesis guidance monitoring card and a thesis title submission letter to be

- prepare proposals and carry out research after being approved by the supervisor
- The main supervisor or represent ative conducts field (Monev lecturer fees are bor ne by students)
- required to carry out seminars of research results before doing thesis examinati on at approved by supervisor.
- If the has been approved by the supervisor, student can subm it a thesis exam to the head of the study program the exam time and examiner s
- being declared to have passed the thesis exam, students mu

Graduation and Graduation Judici um
- *Judisium* is held every even month, the conditions are students**obliged to** make scientific articles of research results (*soft-hardcopy*) to be published in the **scientific journal** *Dinamika Rekas*atwa belonging to Faculty of animal husbandry, Unisma
- Graduation is held 2 times per year in April and October

TERMS AND HOW TO TYPE

1. Paper

Proposals and theses are typed using 80 gram A4 size HVS paper for binding. Reproduction of 2 copies of the proposal and 5 copies of the Thesis report in thick brown color with the following details: Two original copies (Student and Faculty), Photocopy of three copies (University and two thesis supervisors).

2. How to Type

The procedure for typing thesis is as follows:

a. Thesis manuscript is typed by computer or equivalent.

b. Manuscripts are typed one page only, the back page is left blank.

c. The standard size typewriter font is *Arial* 12.

d. The distance between one line and another line is 2 (two) spaces

e. The distance between the Chapter Title and the first line sentence is 4 spaces and the Chapter Title must be written in all capital letters in ***bold*** **and** placed in the middle of the text. At the beginning of the chapter written Roman letters in accordance with the order (according to the table of contents). Example: CHAPTER I. INTRODUCTION

f. The distance between the last sentence in the chapter and the new sub-chapter title is 4 spaces and the sub-chapter title is written in bold (***bold***) with all lowercase letters, except for the first letter of each word and placed on the left border of the paper by listing the numbers in the order and using Arabic numerals for example : 1, 2, …… etc.

g. The distance between the title of the sub chapter and the first line sentence is two spaces

h. The distance between the last sentence of the sub-chapter and the title of the sub-chapter is two spaces.

i. The title of the sub-chapter is typed in all lowercase letters, except for the first letter of each word and starts from the left edge of the sentence or the text above it without bold print by including the letters of the alphabet according to the order. Example: a, b, c. …….. etc.

j. One-spaced distance is used for titles, contents and descriptions of Tables, Pictures, Attachments Titles, Bibliography, Tables, Lists of Figures and List of Attachments with more than one line sentence.

k. The boundaries for typing on paper are: 4 cm from the left edge and 3 cm from the top, right and bottom edges.

l. The initial sentence of the paragraph starts six taps in (first letter of the seventh beat) from the left-hand typing limit or one Standard Tab.

m. Avoid starting a new paragraph at the end of the page, if the existing space cannot contain three lines. Also avoid including the last line of a paragraph on the next page (new page).

n. The first letter of the word after the period punctuation (.) must be typed two taps after the punctuation mark, while after the comma (,) and colon (:) punctuation marks and other punctuation marks are spaced only one tap apart.

o. Latin words or foreign terms, must be typed in italics (***italic***).

3. Use of Language

Manuscripts must use standard Indonesian. Sentences must be complete and complete, use punctuation as necessary. Personal pronouns, especially the first pronoun (I, we) should not be used in script sentences, except in quotations. Arrange the sentences in such a way that they do not need to use personal pronouns.

The separation of words into syllables at the right-hand typing boundary must follow the grammatical Indonesian, while the last word in the sentence line at the bottom of the page should not be cut off. Use the general guidebook for Enhanced Indonesian Spelling (EYD), General guidelines for forming terms and the general Indonesian dictionary as guidelines.

4. Page Number

The preparatory pages of the Thesis are numbered differently from the numbers on the main body page, the preparatory pages are numbered in lowercase Roman numerals (i, ii, … etc.) written at the bottom center of the page, while the main body pages are numbered with Arabic numerals (1 , 2, … etc.) typed at the bottom right of the paper with a distance of 2 cm from the bottom edge (*footer* = 2 cm) starting from the Introduction Chapter and so on until the appendices. Each Chapter Title begins on a new page and continues with its page number.

5. How to Place the Image

The term drawing includes: pictures, illustrations, graphs, diagrams, floor plans, maps, charts and photographs. Drawings must be made on Thesis manuscript paper, the title of the image is typed under the image with a distance of 2 spaces from the image in lowercase letters, except for the first letter in each word and if the sentence is more than one line, then the distance between the first line and the next line is one space. Images that are larger than the paper size must be reduced if they are included in the text and images quoted from other sources must include the author's name and year.

6.How to Create a Table

The table is typed on Thesis paper and the columns are arranged in such a way that the table is easy to read. The abbreviations used in the table must follow the provisions commonly used and are explained below the table.

The table is loaded on one page if possible, a table whose number of rows and rows is larger than the size of the paper, try to reduce the size, if it cannot be reduced, then the table can be continued on a new page by writing a table continuation sentence and two spaces below it, writing the column headings from the table in question. Table posts, table numbers and table titles are typed above the table and must be entered in one standard tab and the distance between the last row of the table title is two spaces, while the distance between one row to another in the table title is one space.

Tables quoted from other sources (libraries) must include the name of the author and the year of publication or be marked in the column or row in question. An example is attached on page 49.

7. How to write the emblem

Symbols for variables (variables) are used to make it easier to write variables in formulas. All must be expressed in Latin and Greek alphabets. The symbols used must be those commonly used in the livestock sector.

The beginning of a sentence should not start with a symbol, therefore the sentence should be arranged in such a way, so that it does not need to start with a symbol.

8. How to Write Units and Abbreviations

Avoid using numbers at the beginning of sentences, use metric units for all purposes. Use numbers for date, page number, percentage, time, Example: March 11, 2012 ; page 23 ; 50%, 09.00 WIB; 20 C. If the standing integer is less than 10, it is written with letters instead of numbers, for example one day the chicken is fasted.

If a sentence contains a series of numbers that have units, then all the numbers are included, but the units are simply listed in the sequence of the last digits. Example: 0, 4, 8, 12, 16 and 20 cm. If using abbreviations, standard abbreviations should be used, for example kg, g, cm, l, ml and so on. It should be noted that the writing of the unit of measure is not marked with a dot behind it.

9. Error Fixing

Thesis Manuscript that has been prepared properly does not contain errors, both script errors and typos. As a guideline, more than three typos are not allowed on one page.

Correction of errors must be edited and it is not allowed to use patches, because at any time they can be released, as well as arbitrary corrections are not allowed.

THESIS PROPOSAL

A research always starts with a proposal. This thesis proposal is a description of the student's research plan which is arranged in a systematic, consistent and operational manner. The thesis proposal must be prepared by the student and approved by the supervisor.

The contents of the thesis proposal include the following:

I. The first part:

1. Title Sheet (see example) on page 32
2. Consent Sheet (see example) on page 33
3. list of contents
4. Tables, Pictures (if any)

II. Core section:

1. Introduction
2. Library Review
5. Research Materials and Methods

III. Final part:

1. Bibliography (see example)
2. Attachments (see examples)

I. The Beginning

1. Title

The title of the research should consist of a few words or short, concise sentences (maximum 16 words) and give an indication of the content and emphasis given in the research. The title must refer to the formulation of the research problem, so that the determination of the title is after the literature and empirical orientation.

2. Approval Page

The approval page contains:

a). The research title is all capitalized in the middle of the page

b). Under the title there is writing **PROPOSAL Script** Size 16 in *bold* which is given a double line of top and bottom.

c). Under the Thesis Proposal written by: name of researcher and student number

d). The letter Approves, placed in the middle and at the bottom of the side left is written Main Supervisor and right is Member Supervisor as shown in the Appendix on page 30.

e). Under the Principal Adviser, Confirming Dean of animal husbandary.

f). Under the Supervision of Members, Knowing the Chair of the Study Program

g). Each name of the supervisor, the name of the Head of Study Program and the Dean is given a line below and write the date of approval : ...../...../.....

II. Main Part of the Proposal

CHAPTER I. INTRODUCTION

The introduction is an introduction to be able to answer the questions of what, how and for what research is carried out which contains:

1.1. Background
1.2. Problem statement
1.3. Research objectives
1.4. Research significances
1.5. Hypothesis

1.1. Background

It is to say that there is a difference or gap between what is expected and reality. It should also be written briefly about the theory, research results, conclusions, seminars, scientific discussions, as well as personal experiences related to the research problem, thereby explaining the importance of this research proposed to have a strong argument.

1.2. Problem Statement

It is an attempt to state the questions that you want to find answers to. The formulation of the problem should be formulated briefly, concisely but clearly. The formulation of the problem does not have to be a question sentence.

1.3. Research purposes

Is a summary of what is to be achieved or intended in conducting research. Therefore, the purpose of this study must refer to and be in line with the formulation of the problem. The research objective is in the form of a statement sentence.

For example Research Objectives: beginning with the words "To determine whether....", or "To study/analyze the effect of .....", or "To find ...., or “To test .....” instead of “To find out ……”

1.4. Significance of Research U

A description of the expected *significance of the results* **for** the development of science and technology or practical answers that are useful for the community.

1.5. Hypothesis

Is a temporary answer to a research problem that is considered the most theoretically possible and has the highest truth. This hypothesis will be tested empirically in the research to be carried out.

CHAPTER II. LITERATURE REVIEW

A scientific research is a continuous series that continues to run. Therefore, in conducting research, it is necessary to have a theoretical basis that has been found by previous scientists. The literature review can be used as a basis for explaining the problem, formulating hypotheses and selecting the appropriate research methodology proposed.

CHAPTER III. RESEARCH MATERIALS AND METHODS

Describe clearly the methodology used, which includes:

a. Research location and time
b. Materials and methods
c. Research plan (for experimental research)
d. Research procedure
e. Observed variables or parameters
f. Data analysis
g. Term limitation
h. research schedule

CHAPTER IV. REFERENCES

Include all the literature used in the preparation of the thesis, both from research journals, research reports, textbooks and the internet (examples of writing a bibliography see attachment on page 45.

Thesis

Thesis is a form of scientific writing from the results of research that has been carried out by students and has been approved by their supervisor. This thesis consists of three parts, namely the introduction, the main part and the end.

A. The Beginning of the Thesis

The introductory part of this thesis consists of: outer cover page, inner cover page, approval/approval page, summary page, curriculum vitae page, introduction page, table of contents page, table list page, picture list page and appendix list page.

An example of the introductory part of this thesis can be seen in the attachments to the sample thesis page, as for the explanation:

1. Outer Cover Page

The cover of the Faculty of Animal Husbandry thesis is **brown** made of paper Buffalo in black print which reads:

a. Thesis title uses capital letters
b. The word "thesis" is given a straight line at the top and bottom of the sentence.
c. UNISMA logo is green
d. Name and Student Identification Number. Above it is added the word By: .... using capital letters
e. Name of Study Program using capital letters
f. Faculty name in capital letters
g. University name in capital letters
h. City name in capital letters
i. Year of Compilation

On the left side or thick cover, the name and Student Identification Number of the scriptwriter are written, in the middle of the Thesis title, and the right edge of the year of publication. For points a, e, f, g, h, i typed in *font* 14 or 16 while the other points are in *font* 12 with one spaced distance.

2. Inside Cover Page

The inside cover page reads as on the outer cover plus the sentence "Proposed as one of the requirements for obtaining a Bachelor's Degree in Animal Husbandry (S.Pt.) at the Faculty of Animal Husbandry, Islamic University of Malang, which is located between the word SKRIPSI (thesis) and the Unisma logo.

3. Research Report Approval and Ratification Page (Thesis)

This page contains about:

a. Research title is written in all capital letters
b. Thesis sentences in capital letters are in bold and are given a straight line at the top and bottom
c. Author's name and Student Identification Number above it begins with the word By:
d. There is a sentence "This thesis has been approved and tried before the Oral Examination Commission, on the second line it is written on the day, date, month and year, then on the third line it is written that it has fulfilled the requirements.
e. The word Approve is in the middle, while the words for the Main Supervisory Lecturer are on the left and the Member Supervisory Lecturer is on the right and

the name of the Supervisory Lecturer is underlined and the Lecturer Id. Number statement below it .

f. The word ratifies the Dean of the Faculty of Animal Husbandry, Islamic University of Malang on the left under the Main Supervisory Lecturer, and is labeled with Lecturer Id. Number under the name of the Dean.

g. The word Knowing the Head of Animal Husbandry Study Program, Faculty of Animal Husbandry, UNISMA, is placed on the right, below the Member Supervisory Lecturer, and is given the Lecturer Id. Number statement at the bottom of the name of the Head of the Study Program.

4. Summary

The summary is to present the things that are important/main part of the contents of the entire thesis which are compiled after the main part of the thesis is done and arranged in a concise and concise manner with one spaced typing spacing, which contains about:

a. The word SUMMARY is written at the beginning and placed symmetrically on the page

b. The student's name is written in capital letters and in bold (***Bold***) with a dot after the name. Followed by the title of the thesis written behind the name in lowercase letters, only first each word is written in capital letters except for conjunctions and is given a period at the end of the title sentence. Behind the title is written the word “Supervised by” (Name of Main Supervisor and Member) in bold (*Bold*).

c. Summary Contents one space below the Thesis Title contains:

1. The first paragraph contains t four and the time, purpose and use of the research
2. The second paragraph contains an explanation of the material and methods
3. The third paragraph contains the research results
4. The fourth paragraph contains conclusions and suggestions.

Example of writing a thesis summary, see attachment on page 34.

5. Biography

Curriculum vitae is a biodata of the thesis writer , which contains at least:

a. Author's photo e. Address

b. Name and NPM, Educational History

c. Place of Birth Date of Author, Work Experience, scholarship

d. Name of Mr and Mrs and Scientific work (if any).

Example of writing a biography see appendix page 35.

6. Preface

The foreword contains the confirmation of the title, the importance of the problem under study and the author's expectations as well as thanks to the supervisor, the Dean and Head of the Study Program, the owner or leader of the place where the research is carried out, parents and relatives and other parties related to the preparation of the thesis.

Example of foreword writing see attachment page 36

7. Table of Contents

The table of contents must be organized and according to page numbers containing titles starting from Summary to Appendix with the following provisions:

a. The distance between the Title of the Table of Contents and the word Summary below it uses 4 (four) spaces.

b. Distance from Summary to Introduction 2 (two) spaces.

c. The distance between one Chapter and another Chapter is two spaces.

d. The distance between Chapters and Sub Chapters and between Sub Chapters is one space.

e. The distance between the last dot and the page number 2 cm

Example of writing a Table of Contents see attachment page 37

8. List of Tables

The list of tables does not always have to exist, unless in the Thesis more than two are typed in the form of tables. This table is typed like a table of contents on a new page with the following conditions:

a. The distance between the table text and the title word, the word table (left side) and the word page (right side) which is below it uses 4 (four) spaces.

b. The distance between the word Table and the table number below it is 2 (two) spaces, unless the text in one number is more than one line, spaced by one space.

The contents of the sentence in the table must be the same as the table title in the text and each end of the table title is connected with dots on the page number according to the page number in the text.

c. The distance between the table titles is two spaces, but if the table text is more than one line, then the distance between the text is one space.

d. The distance between the last dot and the page number 2 cm

Example of writing a table see attachment on page 42.

9. List of Images

a. This list of images does not always have to be there, except if the thesis contains more than two images, maps, photos or graphics. All images are numbered with Arabic numerals and are not distinguished from one another. This list of images is typed with the same conditions as in the List of Tables on a new page. The distance between the last dot and the page number 2 cm
Example of writing a List of Figures, see attachment on page 43.

10. List of Attachments

The list of attachments does not always have to exist, unless there are more than two attachments, this list is typed on a new page with the same conditions as in the list of tables and list of figures. Example of writing a list of attachments see attachment on page 45.

B. The Main Section of the Thesis

The main part of this paper is organized into chapters and sub-chapters, all chapters must be written on a new page and in all capital letters. The main part of the thesis consists of:

CHAPTER I. INTRODUCTION
1.1. Background
1.2. Problem statement
1.3. Research objective
1.4. Significances of study
1.5. Hypothesis

CHAPTER II. LITERATURE REVIEW

CHAPTER III. RESEARCH MATERIALS AND METHODS
3.1. Location and Time of Implementation
3.2. Research Material
3.3. Research Method
3.4. Data analysis
3.5. Research procedure

CHAPTER IV. RESEARCH RESULT
4.1. variable/ parameter 1
4.2. variable/ parameter 2

CHAPTER V. DISCUSSION
5.1. Variable/parameter 1 (discussed)
5.2. Variable/parameter 2 (discussed)

CHAPTER VI. CONCLUSIONS AND RECOMMENDATIONS
6.1. Conclusion
6.2. Suggestions

BIBLIOGRAPHY

ATTACHMENT (Appendix)

B. The Main Section of the Thesis

CHAPTER I. INTRODUCTION

The introduction in writing scientific papers in the form of theses is briefly stated about the theoretical and conceptual framework behind the research problem, the importance of research both in terms of theoretical and practical. The introductory chapter consists of background, problem formulation, objectives, uses and research hypotheses.

1.1. Background

The background contains a description of the importance of conducting research in accordance with the title of the study. The background should be prepared based on critical thinking on the results of literature studies and empirical facts. The background must also be arranged in a sharp, concise and relevant manner to the problem being formulated, so that it will be able to provide an argument about why the problems raised are considered interesting, important and need to be done.

1.2. Problem Statement

Based on the written background, the research problem is formulated by taking into account (1) the problem formulation should be clear, concise and does not have to be stated in the form of a question sentence; (2) must imply the existence of data; (3) must be the basis for making the title and formulating hypotheses.

1.3. Research objectives

The research objective is a statement about what you want to find or what you want to determine. Research objectives must be stated more specifically and in a more concrete form than the formulation of the problem. The research objective must be in

a statement sentence and in the form of an active sentence which has the consequence of a work activity.

Examples begin with “To determine whether.....”, or “To analyze the influence or relationship of .....”, or “To find ...., or "To test ....." instead of "To find out .....".

1.4. Significances of Research

The purpose of this research is to describe the benefits of the results of the research that have been achieved for the development of science and technology or practical answers that are useful for the community.

1.5. Hypothesis

The hypothesis contains a brief statement that is concluded from the theoretical basis and is a temporary answer to the problem under study, and has yet to be tested empirically. Formulating the hypothesis must meet the provisions of (1) formulated in a clear, concise and specific manner; (2) stated in the declarative sentence; (3) states the relationship of two or more variables that can be measured; (4) can be tested and (5) have a theoretical framework.

CHAPTER II. LITERATURE REVIEW

Literature Review is the main part of the Thesis which contains quotations or a synthesis of the literature compiled systematically related to the research problem. The library sources should meet the criteria of relevance and up-to-date. It is important to pay attention to the updating of library sources, especially those containing rapidly developing science and technology, annual reports and other information periodically changing over the last 10 years.

There are various types of library sources, in scientific works, among others, using references to textbooks, journals, scientific magazines, yearbooks, bulletins, Thesis, Theses, Dissertations, other forms of scientific work, both published and in the form of papers, leaflets, manuals. , *hand books* and scientific information from the internet and other reliable sources. In citing literature, you should avoid citing information from other people's citations, therefore you should try to obtain information from the first source. There are many provisions regarding writing a literature review, for guidelines for writing this thesis the following provisions are used:

1. All quotations or syntheses from bibliographic sources must include the author's last name and the year of publication or publication. The stipulation is that if it is placed at the beginning of the sentence, the year is placed in brackets, while

if it is placed at the end of the sentence, the name and year are placed in brackets and between them are marked with a comma. For citations of more than one source or synthesis results, all names and years are put in brackets and between them are given a semicolon (;) and sorted by year of publication.

2. How to write a library source with more than one author, the provisions are:
   a. If the name of the author/author is only one or two people, the name of the author (first word only) must be written all.
   b. If the author's name is more than two, then all of the names must be written at the beginning of the mention, then the author's name is written only the first author and et al. if the reading source is in Indonesian or *et al* . if the reading source is written in English.
   c. If there is a library source with the same author's name and year of publication but the title is different, then in the back of the year, additional letters (a, b, etc.) are given in accordance with the citation order.
3. If the source of the literature is used without an author, the name is written Anonimus if published in Indonesian, or written Anonymous if published in English and must be written at the end of the sentence.

CHAPTER III. RESEARCH MATERIALS AND METHODS

The first paragraph in this chapter contains the place and time of conducting the research, then the next paragraph contains :

1. Research materials including materials and equipment used.
2. The research methods used include sampling methods, variable measurement, research design, research plans, research procedures or stages and data analysis.
3. Data analysis is used as the basis for interpreting data and drawing accurate conclusions.
4. Research procedure contains the stages of research implementation.
5. Limitation of terms: Variables or terms used in research
   need to be narrated according to the aims and limitations of the researcher so that others understand it.

CHAPTER IV. RESEARCH RESULTS

The results of this study present the main points of observation and results of statistical analysis in the form of conclusions from test results and descriptive data in a concise and compact manner that is arranged systematically. To make the presentation more concise and clear, it should be in the form of tables, graphs, or pictures that were previously given an introductory sentence. The presentation of

statistical analysis of research results is placed in the Appendix where the attachment number is mentioned.

CHAPTER. V. DISCUSSION

The discussion is an important part of research, the discussion will answer the problem, interpret the results or findings, interpret the results and research findings with the repertoire of science. The discussion should be structured systematically, sharply and relevant to the research results. Avoid repeating statements that have been previously mentioned both in the discussion and in previous chapters. In discussing using skeptical, critical and analytical thinking or compared with other research results that support or are not in accordance with other writings. .

CHAPTER VI. CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusion

The conclusion is a short and precise statement obtained from the results of research and discussion in accordance with the formulated hypothesis. The conclusion is no longer in the form of statistical conclusions either in the form of descriptive or inferential.

7.2. Suggestions

The suggestions can be in the form of recommendations regarding the application of research results and about research development:

1. Applicative suggestions are made based on research results addressed to all interested parties to take advantage of the research results.
2. Development suggestions are made based on the experience and considerations of researchers addressed to researchers in the same field who wish to continue or develop the research they have done. Connect the suggestions to the research objectives.

C. The Final Part of Thesis

The final part of the Thesis consists of Bibliography and Appendix.

REFERENCES

All libraries used in the main part of the Thesis must be listed in the Bibliography. There are many provisions for writing a bibliography, the guidelines for writing this thesis use the following provisions:

1. The distance between the chapter title and the writing of the first library source and between the second library source is two spaces. When a library source is more than one row, the margins of the second and subsequent rows are entered after 7 beats with a spacing of one space.
2. Bibliography is arranged in alphabetical order by author's name. If the first letter of the author's last name is the same, then it is based on the second letter and so on. If the author's name is the same and the book titles are different, then they are sorted by year of publication.
3. The name written on the Bibliography is the family name (last name) of the author. The way it is written is the last name of the comma and then follow the abbreviation of the first name. When more than one name behind the first author's first name abbreviation is given a comma, then the second author's first name abbreviation followed by the second second author's last name and so on when more than two authors.
4. Writing bibliography is distinguished based on the type of library source, in general the provisions are as follows:
   a. Books or lectures written by one or more authors without an editor in the order of writing are: Author's name, year of publication, book title, edition, city of publication and publisher.
   b. Books or lectures written by several authors, each chapter or main part of the book is written by different people and the editor is written: Name of the author of the chapter or main part of the book, year of publication, title of the book, writing "inside: editor's name comma editor, title of the book, publisher, city published and page chapter or part of the subject of the book.
   c. Thesis, Thesis, Dissertation or writing paper are: name of author, year of publication, title, writing [type of scientific work] Example [dissertation], name of educational institution and city where the institution is located.
   d. Journals, magazines, proceedings are written: author's name, year of publication, title of article, name of journal/magazine, volume and page of the essay cited. The title of the article is different from the title of the book, the first letter is written in lowercase except for the first word. The name of the journal is abbreviated, for example, the Journal of Poultry Science Number 21 volume 64 pages 1506-1513 written by Poult. Sci.Vol. 21 No. 64:1506-1513
   e. Translated books are written: original author name, year, book title, translated by, name of translated author, publisher and city book published.

f. Sources of literature from the internet are written: Author's name, year of publication, title of article, name of web site, and written in brackets the date read on the internet. Example: Ferianto, 2010, Samas Lack of Artificial Insemination. http:/disnakeswan. kalbarprov.go.id. (Accessed 29/9/2010)

ATTACHMENT

The Appendix contains some supporting information and as more complete information than some of the information in the main part of the Thesis. The appendix may contain secondary data, maps, laboratory analysis procedures and statistical analysis.

Appendi 1. Example of Thesis Proposal Outer Cover Page

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

THESIS PROPOSAL

ANANDA OCTA LUTFIA
NPM. 216.01.0.41067

ANIMAL HUSNBANDRY STUDY PROGRAM
FAKULTAS OF ANIMAL HUSBANDRY
UNIVERSITY OF ISLAM MALANG
MALANG
2020

Appendix 2. Sample Consent and Confirmation Pages

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

THESIS PROPOSAL

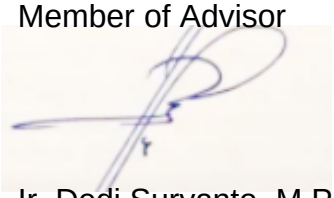
ANANDA OCTA LUTFIA
NPM. 216.01.0.41067

Approve,

Main Advisor

Dr. Ir. Inggit Kentjonowaty, MP
NIDN. 0724076101

Member of Advisor



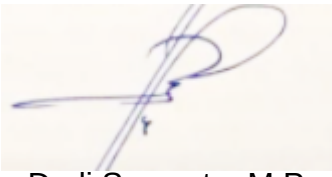
Ir. Dedi Suryanto, M.P.
NIDN. 071110630

Clarify,

Dean of Faculty of Animal Husbandry
University of Islam Malang

Dr. Ir. Inggit Kentjonowaty, MP
NIDN. 0724076101

Ketua Prodi Peternakan
Faculty of Animal Husbandry UNISMA



Ir. Dedi Suryanto, M.P.
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Appendix 3. Example of Thesis Outer Cover Page

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

UNDERGRADUATE THESIS

ANANDA OCTA LUTFIA
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ANIMAL HUSNBANDRY STUDY PROGRAM
FAKULTAS OF ANIMAL HUSBANDRY
UNIVERSITY OF ISLAM MALANG
MALANG
2020

Appendix 4. Example of Cover Page in Thesis

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

UNDERGRADUATE THESIS

Submitted as one of the requirement
Obtaining a Bachelor Degree in Animal Husbandry (S.Pt)
at the Faculty of Animal Husbandry, University Islam of Malang

ANANDA OCTA LUTFIA
NPM. 216.01.0.41067

ANIMAL HUSBANDRY STUDY PROGRAM
FAKULTAS OF ANIMAL HUSBANDRY
UNIVERSITY OF ISLAM MALANG
MALANG
2020

Appendix 5. Example of Approval Sheets

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

UNDERGRADUATE THESIS

ANANDA OCTA LUTFIA
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This thesis has been defended infront of the Board of Examiners on Wednesday, August 4, 2021 and has been declared to have met the requirements.

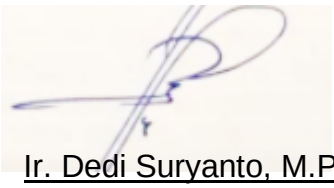
Clarify,

Examiner Essambly

Chair

Dr. Ir. Inggit Kentjonowaty, M.P
NIDN. 0724076101

Member



Ir. Dedi Suryanto, M.P.
NIDN. 071110630

Member

drh. Nurul Humaidah, M.Kes
NIDN. 0724076101

Member

Ir. Farid Wadjdi, M.P
NIDN. 0726035601

PHYSIOLOGICAL STATUS AND ERYTHROCYTE PROFILE OF PE AND F1 BOERPE MOTHER GOATS CASE STUDY TO IMPROVE GOAT MANAGEMENT PATTERN

UNDERGRADUATE THESIS

ANANDA OCTA LUTFIA
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Approve,

Main Advisor

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Member of Advisor

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Clarify,

Dean of Faculty of Animal Husbandry
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STATEMENT OF ORIGINALITY

The undersigned, students of the Islamic University of Malang:

Name : Ananda Octa Lutfia

NPM : 21601041025

Program : Animal Husbandry

Study Program : Faculty of Animal Husbandry

I solemnly declare that the thesis entitled " Physiological Status And Erythrocyte Profile Of Pe And F1 Boerpe Mother Goats Case Study To Improve Goat Management Pattern" is an original scientific work which to the best of my knowledge is not an original scientific work. scientific works that have been submitted by others to obtain an academic degree at a university, and no works or opinions have been written in this manuscript and are mentioned in the sources of citations and bibliography. If it turns out that in the manuscript of this thesis it can be proven that there are elements of PLAGIASI, I am willing to discontinue this thesis and the academic degree that I have obtained will be canceled and processed in accordance with the applicable laws and regulations.

Malang, July 11, 2021

Ananda Octa Lutfia

Appendix 6. Example of Abstract

SUMMARY

ANANDA OCTA LUTFIA. Physiological Status and Erythrocyte Profile of Parent Goat PE and F1 BoerPE Case Study for Improvement of Cross Breeding Goat Management Pattern. (Supervised by **Dr. Ir. Inggit Kentjonowaty, MP** as Main Advisor and **Ir. Dedi Suryanto, MP** as Member Advisor).

This research was conducted at the Laboratory of Animal Physiology and Anatomy of Fapet Unisma (Pre-Research), UPT HMT Singosari Malang (Blood Sampling), Laboratory of the Faculty of Medicine, Islamic University of Malang (Measurement of Erythrocyte Values) and Teaching Farm for physiological examination. Implementation of the research starting on December 30

2019 – 20 May 2020. This study aims to determine and analyze the differences in erythrocyte values, heart rate and respiration of PE Goats and F1 generation crossbreeds with male Boer Goats.

The materials used were PE Goats aged 4 years and F1 Boer Goats aged 14 months. The method used is a case study method using descriptive data. The sample criteria are PE Goat parents with the F1 BoerPE generation that have direct kinship relationships. The variables observed were erythrocyte value, heart rate and respiratory rate. Data analysis using unpaired t test table.

The results of the t-test showed that the PE parental erythrocyte value was 1.286 x 10^6/$mm^3$and its F1 BoerPE generation is 1,188 x 10^6/mm^3stated that the PE parent was not significantly different (P>0.05) with the F1 . generation

BoerPE, the PE parent heart rate was 70.96 times/minute and the value in the F1 generation BoerPE was 60.32 times/minute. minutes and in the F1 generation BoerPE is 55.96 times/minute this shows no significant difference (P>0.05).

From the results of the study, it can be concluded that the Erythrocyte value and the respiratory frequency value of the PE Goat are not different from the F1 BoerPE goat generation but the heart rate value is significantly different (P>0.05). F1 Boer and also its physiological status Need to do further research on F1 . males

Male BoerPE aged 16-20 months to see the metabolism in these cattle and also the high productivity.

Appendix 7. Example of Biography

BIOGRAPHY

ANANDA OCTA LUTFIA, NPM 21601041067. Was born in Malang at September 30, 1997 as daughter from Eko Wahyudi and Kukuh Sri Agustin.

Adress: Bareng Raya Road, Malang, East Java

Education:

1. Elementary School at SDN BARENG 2 MALANG graduated in 2010
2. Junior High School at SMPN 19 MALANG. graduated in 2013
3. Senior High School at SMAS LABORATORIUM UM MALANG graduated in 2016
4. Student at University of Islam Malang since 2016-2020

Appendix 8. Example of Acknowledgment

PREFACE

Praise and gratitude the authors pray to the presence of Allah SWT who has bestowed His mercy and grace, so that in carrying out research and writing this thesis, it can be completed on time. This study was conducted to determine and analyze the comparison of erythrocyte values, respiratory rate and heart rate of PE Goats and the generation of F1 crossbreeds with BoerPE males.

In connection with the completion of the writing of this thesis, Ananda Octa Lutfia would like to express his deepest gratitude to the honorable ones:

1. Dr.Ir.Inggit Kentjonowaty, MP as the Dean of the Faculty of Animal Husbandry, Islamic University of Malang.
2. Ir. Dedi Suryanto, MP as the Head of the Study Program of the Faculty of Animal Husbandry, Islamic University of Malang.
3. Dr. Ir. Inggit Kentjonowaty, MP and Ir. Dedi Suryanto, MP as the supervisors who had provided direction and guidance during research and report generation.
4. Oktavia Rahayu Puspitarini, S.Pt. M.Si as Guardian Lecturer Class 2016.
5. Head of UPTD Livestock Breeding and Forage Singosari, Mrs. drh. Jaya who has allowed me to do research.

6. To both parents who have financed and facilitated for 4 years studying at the Faculty of Animal Science.
7. Mas Budi's teammates, Ulfa and Ayu, who have helped each other to make the research run smoothly.
8. To Ulin, Anas and Lukman friends at Teaching Farm who have helped to facilitate research.
9. To my closest friends Bella, Khalifi, Danang and Erik who have encouraged and accompanied me while working on the revision of the report.
10. And lastly to all my college friends who have supported me all this time.

Appendix 9. Example of Table of Contents

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Appendix 10. Examples of Literature Review

CHAPTER II. LITERATURE REVIEW

2.1. Broiler Duck (Hybrid)

Hybrid ducks are one of the results of a cross between Peking ducks and *Khaki Campbell* ducks. *Khaki Campbell* ducks have high body weight and a higher number of egg production than the Local laying ducks. *Female Khaki Campbell* ducks have a body weight of 2.0-2.2 kg, the number of eggs 300 eggs per year with a weight of each grain between 60-75 g. Local ducks have a low body weight of 1.4 - 1.6 kg, the number of eggs 253 eggs per year with an average grain weight of 65 g. Lack of *Khaki Campbell ducks* have a long body weight gain so it is not suitable for use as a broiler duck. Peking duck is a broiler duck that has a rapid weight gain, but low egg production and hatching power so it is difficult to develop. *Quality final stock* broiler duck breeding can be done by crossing Peking duck with *Khaki Campbell* duck (Basthomi, 2014)

2.2. Duck Feed Ingredients

Animal feed materials based on their origin are divided into two groups, namely feed materials from plants and animals. Plant-derived feed materials are usually a source of carbohydrates and are known to contain a lot of crude fiber. Animal feed materials usually contain protein, more complete amino acids and fiber.

Various types of good food waste that come from restaurants, office canteens/factories as well as vegetable market waste, can be processed into nutritious and relatively inexpensive animal feed. Dried restaurant waste contains 10.89%protein, 1780 Kcal/kg metabolic energy, 9.13%crude fiber, 9.7%fat, 0.08%calcium, and 0.39%phosphorus. This restaurant waste can be used up to 75% in the growth chicken ratio with a response to weight gain and higher economic value than the control ratio (Zainuddin and Nazar, 2000).

Restaurant waste generally consists of rice, vegetables, fish, meat, fruit that is no longer consumed by humans or that is not reused in the cooking process (Anas, 2010). The function of feed is to meet the basic needs of life, to form the cells or tissues of the body and to replace damaged parts, as well as for production purposes. In the body, feed nutrients are used for basic living needs and the excess is used for production and reproduction. In addition, Anggorodi (1995) states that the main purpose of feeding is to ensure the most economical weight gain during the period of growth and development. According to Parakkasi (1990) animal feed can be said to be good when consumed normally and can supply nutrients in a ratio of amount and form in such a way that biological and bodily functions run normally.

Appendix 11. Example of Writing Table

Table 7. Results of Average Digestion of Organic Matter (%) of Feed Treatment.

No.	Treatment	Digestion of Organic Matter (%)
1	R 0	57.77
2	R 1	59.87
3	R 2	60.09
4	R 3	59.48

Appendix 12. Example of List of Tables

LIST OF TABLES

Table: Page Title

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3. Nutritional Content of Complete Feed ……. …….. 20

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Appendix 13. Example of List of Pictures

LIST OF PICTURES

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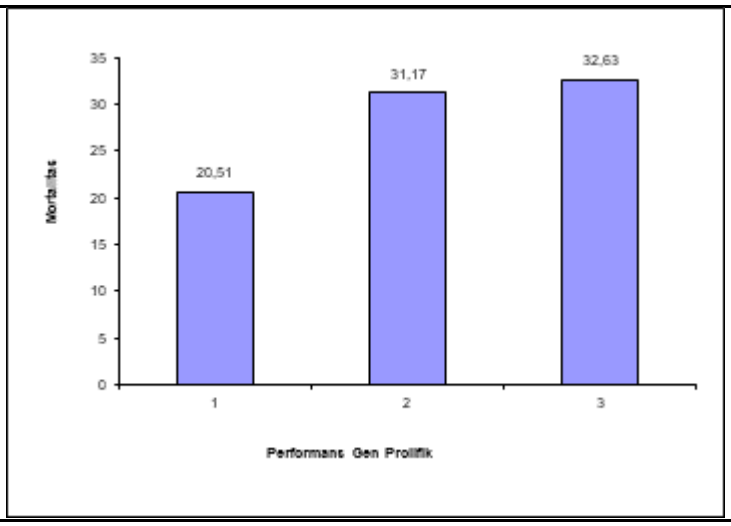
1. Research Plan …… 15
2. Bekatul Fermentation Process ……. 22
3. Microorganism Growth Curve …….. 25

Appendix 14. Example of Figures



Description:
1. Low strain
2. Medium strain
3. High strain

Figure 1. Performance of Prolific Genes on Sheep Mortality
At each treatment.

Appendix 15. Example of List of Appendices

LIST OF APPENDICES

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_____. 1970. Animal Nutrition. Seventh Edition. MC. Graw Hill Book Company. Inc. New York, Toronto, London.

Appendix n 17. Article Format in Scientific Journals

(Times New Roman, all caps, 14 pt, bold, centered)

INSTRUCTION TO AUTHORS (Times New Roman, all caps, 12 pt,italic, centered)

(kosong dua spasi tunggal, 12 pt)

Penulis Pertama[1], Penulis Kedua[2] dan Penulis Ketiga[1]

1. Nama Jurusan, Nama Fakultas, Nama Universitas, Alamat, Kota, Kode Pos, Negara
2. Nama Lembaga Penelitian, Alamat, Kota, Kode Pos, Negara
E-mail: penulis_pertama@address.com
(kosong dua spasi tunggal, 12 pt)

(Times New Roman, 12 pt, italic, centered)

***ABSTRAK** (12 pt, bold, italic)*
(kosong satu spasi tunggal, 12 pt)

Abstrak ditulis dalam bahasa Indonesia dan bahasa Inggris dengan jenis huruf Times New Roman, ukuran 10 pt, italic, spasi tunggal. Abstrak bukanlah penggabungan beberapa paragraf, tetapi merupakan ringkasan yang utuh dan lengkap yang menggambarkan isi tulisan. Sebaiknya abstrak mencakup latar belakang, tujuan, metode, hasil, serta kesimpulan dari penelitian. Abstrak tidak berisi acuan atau tidak menampilkan persamaan matematika, dan singkatan yang tidak umum. Abstrak terdiri dari satu paragraf dengan jumlah kata paling banyak 250 kata dalam bahasa Indonesia dan 150 kata dalam bahasa Inggris.
(kosong satu spasi tunggal 10 pt).

Kata kunci: 3 - 5 kata kunci (Times New Roman, 10 pt)
(kosong satu spasi tunggal 10 pt)

***ABSTRACT** (12 pt, bold, italic)*
(kosong satu spasi 12 pt)

Abstract should be written in Indonesian and English using Times New Roman font, size 10 pt, italic, single spasing. Abstract is not a merger of several paragraphs, but it is a full and complete summary that describe content of the paper It should contain background, objective, methods, results, and conclusion from the research. It is should not contain any references nor display mathematical equations. It consists of one paragraph and should be no more than 200 words in bahasa Indonesia and 150 words in English
(kosong satu spasi tunggal 10 pt)

Keywords: 3 - 5 keywords (Times New Roman, 10 pt)
(kosong enam spasi tunggal, 10 pt)

1. PENDAHULUAN (12 pt, bold)

(kosong satu spasi tunggal, 10 pt)

Petunjuk penulisan ini dibuat untuk keseragaman format penulisan dan kemudahan bagi penulis dalam proses penerbitan naskah di Jurnal Program Studi/Pasca Unisma. Penulis bisa menggunakan bahasa Indonesia atau bahasa Inggris. Naskah dalam bahasa Indonesia harus sesuai dengan EYD yang berlaku, dan bila dalam bahasa Inggris sebaiknya memenuhi standard tata bahasa Inggris baku.

Naskah ditulis dalam format kertas berukuran A4 (210 mm x 297 mm) dengan margin atas 3 cm, margin bawah 3 cm, margin kiri dan kanan masing – masing 2 cm. Bentuk naskah berupa 2 kolom dengan jarak antar kolom 1 cm. Panjang naskah hendaknya maksimal 12 halaman,

termasuk lampiran. Jarak antara paragraf adalah satu spasi tunggal.

Judul naskah harus mencerminkan inti dari isi suatu tulisan. Judul hendaknya menonjolkan fenomena (obyek) yang diteliti, bukan metode dan bukan kegiatan (proyek). Judul bersifat informatif, spesifik, efektif dan maksimal 15 kata. Jika naskah dalam bahasa Indonesia, ditulis terlebih dahulu judul bahasa Indonesia kemudian diikuti judul dalam bahasa Inggris. Sebaliknya, jika naskah dalam bahasa Inggris, ditulis dahulu judul bahasa Inggris kemudian diikuti judul dalam bahasa Indonesia.

Nama penulis ditulis secara lengkap di bawah judul tanpa menyebutkan gelar. Di bawahnya, dicantumkan nama lembaga dan alamat lengkap tempat penulis bekerja beserta alamat e-mail penulis pertama untuk korespondensi. Jika penulis lebih dari satu orang dan bekerja di lembaga yang sama, maka pencantuman satu alamat telah dianggap cukup mewakili alamat penulis lainnya.

Abstrak ditulis dalam bahasa Indonesia dan bahasa Inggris yang masing – masing dilengkapi dengan kata kunci (*keywords*). Kata kunci dapat berupa kata tunggal atau kata majemuk (terdiri lebih dari satu kata). Penulisan kata kunci antara tiga sampai lima (3 – 5) kata dan dapat mengikuti klasifikasi sebagai berikut: metode teoritis, metode eksperimen, fenomena, obyek penelitian dan aplikasinya.

Naskah disusun dalam 4 subjudul yaitu: **Pendahuluan, Metode Penelitian, Hasil dan Pembahasan, Kesimpulan.** Subjudul ditulis dengan huruf besar dan diberi nomor dengan angka Arab. **Ucapan Terima Kasih** (jika ada), **Daftar Pustaka** dan **Lampiran** (jika ada) ditulis berurutan setelah **Kesimpulan** dan di awal kata tidak diberi nomor. Subjudul untuk naskah bahasa Inggris sebagai berikut: **Introduction, Methods, Results and Discussion, Conclusions. Acknowledgement** (jika ada), **References** dan **Appendix** (jika ada) ditulis berurutan setelah **Conclusions.** Penggunaan subsubjudul sebaiknya dihindari, apabila diperlukan diberi nomor bertingkat dengan angka Arab seperti contoh berikut: 1.1., 1.2., ... dan seterusnya.

Pendahuluan hendaklah mencakup hal – hal berikut ini: latar belakang, perumusan masalah, tujuan, teori, dan hipotesis (jika ada). Untuk penemuan – penemuan ilmiah yang telah dipublikasikan sebelumnya baik oleh diri sendiri maupun orang lain dan berkaitan dengan penelitian yang dikerjakan, bisa dimasukkan di dalam subjudul pendahuluan ini. Bagian pendahuluan diakhiri dengan sistematika penulisan.

Metode penelitian yang digunakan harus ditulis sesuai dengan cara ilmiah, yaitu rasional, empiris dan sistematis. Seyogyanya disebutkan waktu dan tempat penelitian secara jelas, berikut data maupun alat dan bahan yang dipakai dalam penelitian.

Hasil dan pembahasan berisi hasil analisis fenomena di wilayah penelitian yang relevan dengan tema kajian. Hasil penelitian hendaknya dibandingkan dengan teori dan temuan penelitian yang relevan

Kesimpulan bisa berupa kesimpulan khusus dan kesimpulan umum. Kesimpulan khusus merupakan hasil analisa data atau hasil uji hipotesa tentang fenomena yang diteliti. Kesimpulan umum sebagai hasil generalisasi atau keterkaitan dengan fenomena serupa di wilayah lain dari publikasi terdahulu. Hal yang perlu diperhatikan adalah segitiga konsistensi (masalah-tujuan-kesimpulan harus konsisten).

Penggunaan catatan kaki tidak diperkenankan. Simbol / lambang ditulis dengan jelas dan konsisten. Istilah asing ditulis dengan huruf *italic*. Singkatan harus dituliskan secara lengkap pada saat disebutkan pertama kali, setelah itu bisa ditulis kata singkatnya.

Tabel ditulis dengan *Times New Roman* ukuran 10 pt dan berjarak satu spasi dibawah judul tabel. Judul tabel ditulis dengan huruf berukuran 10 pt, bold dan ditempatkan diatas tabel. Penomoran tabel menggunakan angka Arab (1,2,.....). Tabel diletakkan segera setelah disebutkan di dalam naskah. Tabel diletakkan pada posisi paling atas atau paling bawah dari setiap halaman dan tidak diapit oleh kalimat. Apabila tabel memiliki lajur/kolom cukup banyak, bisa digunakan format satu kolom atau satu halaman penuh. Apabila judul pada lajur label terlalu panjang, maka lajur diberi nomor dan keterangannya di bawah tabel.

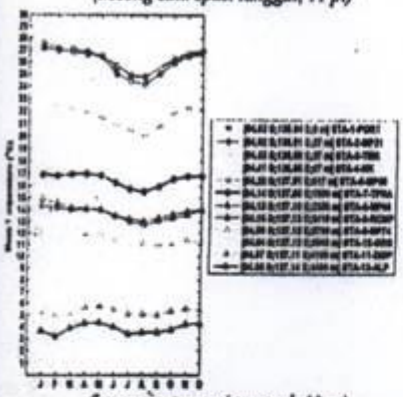
(kosong satu spasi tunggal, 10 pt)

Tabel 1. Tabel Prosesi Gerhana Untuk daerah Lampung.

(kosong satu spasi tunggal, 10 pt)

(kosong dua spasi tunggal, 10 pt)

(kosong satu spasi tunggal, 11 pt)



(kosong satu spasi tunggal, 11 pt)

Gambar 1. Temperatur rata-rata bulanan AWS PTFI per ketinggian.

(kosong dua spasi tunggal, 11 pt)

Gambar diletakkan segera setelah disebutkan dalam naskah, Gambar diletakkan pada posisi paling atas atau paling bawah dari setiap halaman dan tidak boleh diapit kalimat. Gambar diletakkan simetris dalam kolom. Apabila gambar cukup besar, bisa digunakan format satu kolom. Penomoran gambar menggunakan angka Arab. Penulisan keterangan gambar menggunakan huruf *Times New Roman* berukuran 10 *pt*, bold dan diletakkan di bagian bawah, seperti pada contoh diatas. Gambar yang telah dipublikasikan penulis lainnya harus disebutkan sumbernya dalam keterangan gambar.

Apabila terdapat persamaan reaksi atau matematis, diletakkan simetris pada kolom. Nomor persamaan diletakkan di ujung kanan dalam tanda kurung, dan penomoran dilakukan secara berurutan. Apabila terdapat rangkaian persamaan yang lebih dari satu baris, maka penulisan nomor diletakkan pada baris terakhir. Penunjukkan persamaan dalam naskah dalam bentuk singkatan, seperti Pers. (1).

(kosong satu spasi tunggal 11 pt)

$$ka = -\left(\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y}\right) \qquad (1)$$

(kosong satu spasi tunggal 11 pt)

Penurunan persamaan matematis tidak perlu ditulis semuanya secara detail, hanya dituliskan bagian yang terpenting, metode yang digunakan dan hasil akhirnya.

Pengutipan pustaka di dalam naskah dituliskan dengan menggunakan angka Arab dan diurutkan sesuai urutan pengutipan dalam naskah. Angka ditulis dalam kurung persegi/*square bracket*. Contoh pengutipan pustaka adalah sebagai berikut:

- Monsun dan pergerakan ITCZ (*Intertropical Convergence Zone*) berkaitan dengan variasi curah hujan tahunan dan semi-tahunan di Indonesia [1,2].
- Liberti et. al. [3] menggunakan data.....

Nomor 1,2,3, dan seterusnya menunjukkan urutan pengutipan pustaka dalam naskah dan seluruh pengutipan pustaka kemudian diurut dalam Daftar Pustaka dengan cara penulisan seperti pada contoh.

DAFTAR PUSTAKA

(kosong satu spasi tunggal, 11 pt)

Penulisan daftar pustaka sesuai dengan urutan pengutipannya dalam naskah. Jumlah sumber acuan dalam satu tulisan paling sedikit sepuluh sumber acuan, dengan 80% merupakan sumber acuan primer dan 80% merupakan terbitan 5 tahun terakhir. Sumber acuan primer adalah sumber acuan yang langsung merujuk pada bidang ilmiah tertentu, sesuai topik penelitian dan sudah teruji. Sumber acuan primer dapat berupa tulisan dalam makalah ilmiah dalam jurnal internasional maupun nasional terakreditasi, hasil penelitian di dalam disertasi, tesis maupun skripsi. Buku (*textbook*), termasuk dalam sumber acuan sekunder. Format daftar pustaka yang digunakan Jurnal Unismamengacu pada model APA yang dikembangkan oleh *American Psychological Association*, seperti contoh berikut ini:

Paper dalam jurnal

a. Artikel dalam jurnal ilmiah dengan volume dan nomor (1 penulis)

[1] Handayani, A.S. (2010). Analisis daerah endemik

No	Prosesi Gerhana	Waktu (WIB)	Waktu (UTC)
1	Gerhana Matahari mulai (I)	15:19	08:19
2	Fase Gerhana Cincin mulai (II)	16:38	09:38
3	Puncak Gerhana Matahari Cincin	16:42	09:42
4	Fase Gerhana Cincin selesai (III)	16:45	09:45
5	Gerhana Matahari selesai (IV)	17:52	10:52

bencana akibat cuaca ekstrim di Sumatera

Utara, *Jurnal Meteorologi dan Geofisika, 11(1)*, 52-57

b. Artikel dalam jurnal ilmiah dengan volume dan nomor (2 - 6 penulis)

[2] Suryanto, W., Nurdiyanto, B., & Pakpahan, S. (2010). Implementasi perhitungan receiver function untuk gempa jauh menggunakan Matlab. *Jurnal Meteorologi dan Geofisika, 11(1)*, 66-72.

c. Artikel dalam jurnal ilmiah dengan volume dan nomor (lebih dari 6 penulis)

[3] Subagyono, K., Sugiharto, B., Purwani, E.T., Susilokarti. D., Las, I., Unadi, A., et. Al. (2010). Technology needs assessment (TNA) for climate change mitigation in agriculture sector: criteria, prioritizing and barriers. *Jurnal Meteorologi dan Geofisika, 11(2)*, 96-105.

Buku

a. Buku (1 penulis)

[4] Shearer, P.M. (1999). *Introduction to seismology*. Cambridge: Cambridge University Press.

b. Buku (2 - 6 penulis)

[5] Trewartha, G.T., & Horn, L.H. (1980). *An introduction to climate*. New York: McGraw-Hill.

c. Buku (lebih dari 6 penulis)

[6] Johnson, L., Lewis, K., Peters, M., Harris, Y., Moreton, G., Morgan, B., et. al. (2005). *How far is far?* London: McMillan.

Prosiding

[7] Meilano, I., Abidin, H.Z., & Natawidjaya, D.H. (2009). Using 1-Hz GPS data to measure deformation caused by Bengkulu earthquake. *Proceeding of International Symposium on Earthquake and Precursor*, 153-158, Bukittinggi: Research and Development Center, BMKG.

Makalah seminar, lokakarya

[8] Ibnu, S. (2011, Maret). *Isi dan format jurnal ilmiah*. Makalah disajikan dalam Lokakarya Nasional Pengelolaan dan Penyuntingan Jurnal Ilmiah, Malang: Universitas Negeri Malang.

Skripsi, disertasi, tesis

[9] Riyadi, M. (1996). *Pemodelan gayu berat tiga dimensi untuk melokalisir jebakan timah di daerah Pemali-Bangka*. Tesis, Fakultas MIPA: Universitas Indonesia.

Laporan Penelitian:

[10] Sumaryanto. (2008). *Karekteristik sosial ekonomi petani pada berbagai agroekosistem*. Laporan penelitian, Pusat Analisis Ekonomi dan Kebijakan Pertanian, Bogor: Kementrian Pertanian.

Artikel dari internet:

[11] Interactive Weather and Wave Forecast Maps. (2011) *(http://www.bmg.go.id/indexbaru.php/arts/viewer/in-lex.html)*, diakses 7 April 2011.

PENGAJUAN NASKAH

1. Redaksi Jurnal Unisma menerima naskah ilmiah berupa hasil penelitian atau hasil studi dalam bidang ..... Naskah harus berisi informasi yang benar, jelas dan memiliki kontribusi substantif terhadap bidang kajian
2. Penulisan harus singkat dan jelas sesuai dengan format penulisan Jurnal Unisma. Naskah belum pernah dimuat atau tidak sedang dalam proses untuk dimuat di media lain, baik media cetak maupun elektronik.
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(Contoh penulisan artikel ini diambil dari: Meteorologi dan Geofisika)

Appendix 18. Examples of Article Writing in Scientific Journals

THE EFFECT OF ADDITION OF VARIOUS SOURCES OF NITROGEN IN THE EN K APSULATION PROCESS ON THE AMOUNT OF MICROBES AND THE REDUCTION OF PROBIOTIC ORGANIC MATERIALS

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Abstract

This study aims to analyze the effect of the addition of various types of nitrogen sources on the encapsulation process of *Lactobacillus salivarius* bacteria using maltodextrin on the number of microbes and the reduction of organic matter (BO) probiotics. The material used was isolates *of Lactobacillus salivarius bacteria*, maltodextrin, skim milk, soybean seeds, bekatul and ZA. Experimental research using Complete Randomized Design (RAL) 3 treatments and 4 repetitions, P1: maltodextrin 10% + soybean seeds 45% + bekatul 45%, P2: maltodextrin 10% + skim milk 45% + bekatul 45% and P3: maltodextrin 10% + ZA 1% + bekatul 89%. The observed variables were the number of microbes and the decrease in BO probiotic content. The data obtained were analyzed variably. The results of variance analysis showed that the addition of N source in the encapsulation process of *Lactobacillus salivarius* probiotic showed a significant effect ($P < 0.05$) on the number of microbes and a very significant effect ($P < 0.01$) on the decrease of probiotic organic matter. Average number of microbes (log cfu/g) treatment P1: $8.4534^{ab} \pm 0.0010$, P2: $8.4522^{a} \pm 0.0001$ and P3: $8.4548^{b} \pm 0.0017$. The mean decrease in transform BO content was at P1: $7.28^{a} \pm 1.53$, P2: $6.51^{a} \pm 1.62$ and P3: $12.20^{b} \pm 0.79$. The study concluded that the addition of 1% ZA and 89% bekatul as nitrogen source in the encapsulation medium showed the best results on the number of probiotic microbial cells supported by higher organic matter utilized by microbes marked by decreased probiotic BO content.
Keywords: encapsulation, nitrogen source, number of microbes, organic matter

THE INFLUENCE OF VARIETY SOURCE OF NITROGEN ON ENCAPSULATION PROCESS TOWARD THE AMOUNT OF MICROORGANISM AND DECREASING ORGANIC MATTER OF PROBIOTIC

Abstract

The purpose of this research was to know the effect of additional variety source of nitrogen toward encapsulation process of Lactobacillus salivarius using maltrodextrin toward the amount of bactery cell and the ingredient decreasing organic matter of probiotic. The material on this study was isolate bacterial Lactobacillus Salivarius, maltodextrin, skim milk, soybean, rice bran and ZA. The experimental design which is used is Completely Randomized Design (CRD) with3 treatments and 4 replicationare P1: maltodextrin 10% + soybean 45% + rice bran 45%, P2: maltodextrin 10% + skim milk 45% + rice bran 45% and P3: maltodextrin 10% + ZA 1% + rice bran 89%. The variables are analyzed outlined as following: amount of bactery and the ingredient decreasing OM probiotic. The data were analyzed using analysis of variance Results of analysis of variance showed that the addition of N sources on the probiotic Lactobacillus salivarius encapsulation process showed a significant effect ($P < 0.05$) to the number of microbes and a high significant level ($P < 0.01$) to the organic matter (OM) levels. The average number of microbes (log cfu/g), treatment P1: $8{,}4534^{ab} \pm 0.0010$, P2: $8{,}4522^{a} \pm 0.0001$ and P3: $8{,}455^{b} \pm 0.0017$. Average the ingredient decreasing organic matter level, P1: $7.28^{a} \pm 1.53$, P2: $6.51^{a} \pm 1.62$ and P3: $12.20^{b} \pm 0.79$. The conclusion of this research is additonal 1% of Za and 89% of rice brain as a nitrogen source toward encapsulation media considered as the best result toward amount of probiotic bactery cell is supported by the higher organic materials utilized by microorganism is characterized by a decrease in the OM contains probiotics.
Key Word: Encapsulation, nitrogen, amount of microbes, organic matter

INTRODUCTION

Probiotics are living microbes that can live or grow in the gut and can benefit their hosts both directly and indirectly from the results of their metabolites, so that beneficial microbes can grow well (Kompiang, 2009). Probiotics are able to increase these internal and external capabilities by utilizing microorganisms that function as probiotics (beneficial microbes) and producers of more easily digestible nutrients (prebiotics), as well as a source of microbial enzymes. The use of probiotics directly will increase the effectiveness of intestinal microbes which in turn increase growth. Kalsum (2006) stated that the use of endogenous probiotics isolated from the gastrointestinal tract can affect the activity of enzymes in the small intestine,

The criteria of a good probiotic is to have quality stability and to have good storage capacity. To maintain the stability of the quality of probiotics must be supported by protection with appropriate technology, so that probiotic microbes are able to grow in good quantity and quality and are able to defend themselves from other environmental disturbances. It is further stated that the requirement of a good probiotic is that the probiotic must remain in a living state, the ability to survive when passing through the digestive tract and the health benefits that can be proven. To maintain the viability of bacteria, it is necessary to protect the bacteria, one of them by encapsulation method.

Encapsulation is a process of packaging (*coating)* a core material, in this case probiotic bacteria as the core material by using certain encapsulation materials, which is useful to maintain its viability and protect probiotics from damage due to unfavorable environmental conditions (Wu *et al* ., 2000.). Sensitive components such as microorganisms, can be encapsulated to increase their viability and shelf life (Pacifico *et al* . 2001).

Previous research on probiotic encapsulation has been conducted by several researchers with various variations of encapsulation materials and encapsulated cultures, including: *Bifidobacteria* and *Lactobacillus* encapsulation with alginate - starch (Sultana *et al* . 2000), *Lactobacillus casei* with alginate - polodo flour and wheat (Width) , 2003), *Lactobacillus sp* with calcium alginate (Chandramouli *et al* ., 2004).

From some of the above research, it is concluded that the use of protein type encapsulation material, gives better resistance after encapsulation process and the use of polysaccharide type encapsulation material causes rough texture on the resulting microcapsules and after application to the product.

Triana (2006) stated that the encapsulation of microbial cells with encapsulation material from a type of protein that contains high nitrogen is able to protect cells perfectly so that the resistance or viability of probiotic cells during the process of product manufacturing (encapsulation) and storage, as well as increase resilience during the pathway. digestion (low pH and bile in poultry that consume it.

Therefore, this study was conducted to determine the best encapsulation material from the addition of various types of nitrogen sources. Reviewed from the ability to protect probiotic microbes and decrease the content of probiotic organic matter.

MATERIALS AND METHODS

The research was conducted on October 24 to November 24, 2014 at the Central Laboratory of the Islamic University of Malang . The materials used in the study were isolates *of Lactobacillus salivarius bacteria (* Kalsum *et al,* 2012 *)* , maltodextrin, *skim milk* , soybean seeds, bekatul and ZA. The research uses an experimental method with Complete Randomized Design (RAL).

This research was conducted in two stages , namely preliminary research and main research. Preliminary research conducted in this study to determine the results of the best

comparison in terms of texture with various comparisons of N source materials for the encapsulation process on maltodextrin that is using maltodextrin 10% and 20%.

The main research used 3 treatments and 4 repetitions, namely P1: Maltodextrin 10% + Soybean seeds 45% + Bekatul 45% (N of 0.57%), P2: Maltodextrin 10% + *skim milk* 45% + Bekatul 45% (N of 0 , 22%) and P3: Maltodextrin 10% + ZA 1% + Bekatul 89% (N of 0.25%). The equipment used was analytical scales, *autoclave* , oven, *waterbath shacker* , enlenmeyer, *spectrophotometer* , petri cup, reaction tube, and glass beaker.

The variables observed were the number of microbes and the decrease in the organic matter (BO) content of probiotics . The results were analyzed by ANOVA test.

RESULTS AND DISCUSSION

Number of Microbes

The results of variance analysis showed that the difference of addition of different types of nitrogen sources in the process of probiotic encapsulation (*Lactobacillus salivarius*) gave a significant effect (P <0.05) on the number of probiotic microbes. This is due to the addition of various sources of nitrogen in the encapsulation process able to protect *Lactobacillus salivarius* bacteria from bacterial damage. According to the statement of Anal and Singh (2007) that the process of encapsulation is a process to coat the nucleus in the form of a cell with a certain protective material that can prevent cell damage. The use of protein -based materials as encapsulation materials has the ability to emulsify and is able to protect bacteria from heat (*thermo protectan*) (Krasaekoopt *et al* . 2003). In addition, it is thought that the growth of *Lactobacillus salivarius* bacteria in each medium is closely related to the ability of bacteria to metabolize existing nutrients and the ability of bacteria to survive the influence of the environment and multiply cells.

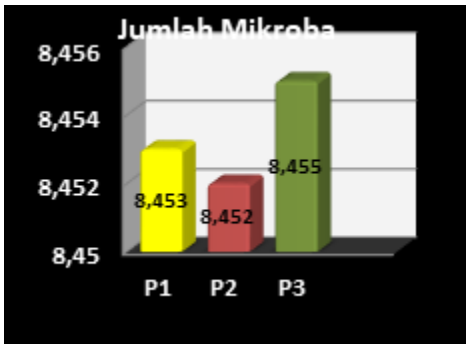

Figure 1. Total Average Graph
Probiotic Microbes

Based on the results of BNT test (5%) and the average number of *Lactobacillus salivarius* microbes in probiotics after encapsulation of each treatment, namely: P1 = 8.4534 [ab] log cfu/g, P2 = 8.4522 [a] log cfu/g, and P3 = 8 , 4548 [b] log cfu/g (transformation data). The results of variance analysis showed that the difference of addition of different types of nitrogen sources in the process of probiotic encapsulation (*Lactobacillus salivarius*) gave a significant effect (P <0.05) on the number of probiotic microbes. It is thought that the addition of various sources of nitrogen in the encapsulation process is able to protect the bacteria *Lactobacillus salivarius*from the damage of the bacteria. This is in accordance with the opinion of Anal and Singh (2007) that the encapsulation process is a process to coat the nucleus of a cell with a certain protective material that can prevent cell damage. The use of protein -based materials as encapsulation materials has the ability to emulsify and be able to

protect bacteria from heat (*thermoprotectan*) (Krasaekoopt *et al* . 2003). In addition, it is thought that the growth of *Lactobacillus salivarius* bacteria in each medium is thought to be closely related to the ability of bacteria to metabolize existing nutrients and the ability of bacteria to survive the influence of the environment and multiply cells.

Based on the results of BNT test (5%) and the average number of *Lactobacillus salivarius* microbes in probiotics after encapsulation of each treatment, namely: P1 = 8.4534 ^{ab} log cfu/g, P2 = 8.4522 ^{a} log cfu/g, and P3 = 8 , 4548 ^{b} log cfu/g (transformation result data). P2 treatment is significantly different than P3 and P1 treatments. This is because the treatment of P1 and P3 has a higher nitrogen content compared to P2, so that P2 is less able to maintain According to the statement of Triana (2006) *Lactobacillus salivarius*not thermophilic bacteria, but mesophilic. The bacteria do not have a stable protein at high temperatures when the cell radiates high heat due to imperfect encapsulation, the protein will be damaged so that the cell dies. With a higher nitrogen content in the treatment of P1 and P3 is more able to protect the cells perfectly so that it is able to survive during the encapsulation process. The nitrogen content of P1 was 0.57% and P3 was 0.35% higher than that of P2 nitrogen at P2 was 0.22%.

In addition to the increase in total microbes, it is thought that more and more microbes are utilizing fiber for cell metabolism. The coarse fiber content in P3 is quite high due to the presence of 89% of the total encapsulation media. Microbes
remodeling coarse fiber into a simpler substrate for cell metabolism. This is in accordance with the statement of Karppinen (2003), that crude fiber can be fermented by lactic acid bacteria although the fermentation rate is slower than soluble dietary fiber. At P3 there is also a fairly high sulfur content of 1% ZA which aids protein synthesis. According to Vorizan (2002) ZA contains Nitrogen in the form of ammonium of 21% and sulfur 24% which can be directly used by microbes as a source of nitrogen and minerals for cell proliferation. So *that Lactobacillus salivarius* bacteria are able to grow normally and can survive from environmental influences during the encapsulation process.

In P1 treatment did not show significant difference with P3 treatment. This is thought to be due to the high nitrogen content in P1 of 0.57% but the average value of the number of microbes is lower d compared to P3 because the sulfur content in P1 is smaller than P3. This is in accordance with the statement of Slyter *et al*. (1996) that Sulfur reduced in the form of sylfic acid (H2S) will subsequently react with O-acetyl serine to form the amino acids cysteine and acetic acid. The reaction is supported by the enzyme cysteine synthetase. Cysteine is known to be a major precursor for the synthesis of the amino acid methionine. Methionine is further essential in the initial process (initiation stage) of protein synthesis in microbial cells. Due to the very strategic function of methionine in the process of protein synthesis, the addition of sulfur can increase bacterial growth.

The amount of nitrogen contained in the treatment of P1 and P3 as encapsulation material in the encapsulation process is thought to be able to protect *Lactobacillus salivarius* bacteria from environmental influences that can reduce its viability. This is in accordance with the statement of Triana (2006) that the presence of protein containing high nitrogen is able to protect cells perfectly so that the resistance or viability of probiotic cells during the process of product manufacturing (encapsulation) and storage, as well as increase resistance during the digestive tract (pH low and bile in poultry that consume it.

Decreased Organic Material Content

The results of variance analysis showed that the differences in the addition of different types of nitrogen sources in the process of probiotic encapsulation (*Lactobacillus salivarius*) gave a very significant effect ($P < 0.01$) on the decrease in the content of probiotic organic matter. The result of BNT test is 1 % and the average decrease in probiotic organic matter

content after encapsulation of each treatment is P1 = 7.28 [a] %, P2 = 6.51 [a] %, P3 = 12.20 [b] % (transformation data).

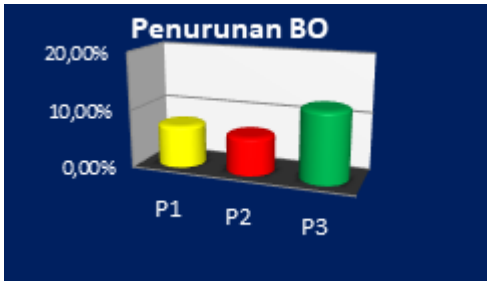

Figure 2. Decrease Graph

Contents of BO Probiotics

The content of organic matter after the encapsulation process decreases. This is due to the utilization of substrates contained in the media by microorganisms to grow, develop and maintain their life during the process of encapsulation of *Lactobacillus salivarius probiotics.* This is in accordance with the statement of Sastrawidana et al (2008), the decrease in organic matter is high due to the modification of nutrients, one of which is the use of organic matter in the form of carbohydrates, proteins, fats and crude fiber from raw materials for microbial activity in producing energy and nitrogen. useful for the growth and development and multiplication of microbial cells.

In P3 treatment, there was a decrease in the highest BO content of 12.20% compared to P1: 7.28% and P2: 6.51%. The higher the reduction of organic matter in the encapsulation media, it is estimated that the content of organic matter in the encapsulation media such as proteins, carbohydrates and fats have been completely overhauled by bacteria into simple compounds so that bacteria can be used for cell metabolism. This is because microbes can convert complex fibers such as proteins, carbohydrates and fats into simple compounds that are easily absorbed by the body for growth, development and cell proliferation (Anonimus, 1995).

In addition, in P3 there is a fairly high SK content because the use of 89% bekatul with a high SK content will be transformed by microbes into a simpler compound that is easy for microbes to use to grow and develop so that the BO content in P3 decreases. This is in accordance with the statement of Sofyan (1996) that during the incubation process of fermentation, microbes will break down complex organic molecules into simple molecules so that it is easy for microbes to grow and develop.

The decrease in BO content after the encapsulation process corresponds to the result of an increase in the number of microbes. In P3 there was the highest decrease in BO of 12.20 % and showed the highest number of microbes 8,455 x 10^{8} cfu/g. Similarly, in P1 there is a smaller decrease than P3 7.28 %, the number of microbes is lower than P3 8,453 x 10^{8} cfu/g, and the lowest decrease in BO that is at P2 6.51 % is also synergistic with the number of probiotic microbes the most little is 8,452 x 10^{8} cfu/g. This is because the higher the decrease in BO content after the encapsulation process, the more microbes that utilize the nutrients contained in the media for cell metabolism.

In addition, with more and more microbes growing and also starting to produce more enzymes that help the modification of nutrients for microbial growth, it will affect the content of organic matter from the substrate. This is due to the growth and development of microbes remodeling carbohydrates, fats and also crude fiber that later from the remodeling results used as a source of energy.

CONCLUSION

The addition of 1% ZA and 89% bekatul as nitrogen sources in the encapsulation media showed the best results on the number of probiotic microbial cells supported by higher organic matter utilized by the microbes marked by a decrease in probiotic BO content.

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