

GUIDE TO THE PREPARATION OF THESIS

By

INSTITUTE OF POSTGRADUATE STUDIES

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FORWARD

This guide is meant to facilitate postgraduate students of Universiti Kuala Lumpur in the preparation of their theses. Since the preparation of the last guide, typing and printing technologies have acquired new dimensions, all to the benefit of the graduate student. The guide covers the technical specifications, type of paper, format and method of bibliographic citation.

The format of this guide has also acquired a new look in order to resemble as closely as possible the format of a thesis, in terms of content layout, except for line spacing. To conserve space, the guide uses single spacing, whereas a thesis is typed in 1.5 spacing.

As indicated by the title, this document is meant to be a guide and it is up to the students to adapt it to the demands of their respective disciplines. It is hoped that with the availability of this guide, a certain measure of uniformity, can be achieved in all UniKL theses.

We acknowledge that the preparation of a thesis or dissertation is a complex and tedious process. It involves numerous steps beginning with the submission of a research proposal and ending with the binding of the thesis. With proper planning and the aid of modern typing and printing technologies, the preparation of a thesis can be a very satisfying and rewarding exercise.

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CHAPTER 1

GENERAL REQUIREMENTS OF THESIS

Introduction

This guide is to help postgraduate students of Universiti Kuala Lumpur in the preparation of their theses. It deals only with the format of the thesis and some writing conventions. The Institute of Postgraduate Studies (IPS) welcomes queries from postgraduate students on matters of specifications of thesis format. The earlier this is done, the better it is for all concerned.

Submission of Thesis

As prescribed in the Acts and Regulations of the Higher Degree Programme of the University, candidates intending to submit their thesis should comply with the following procedure:

- (a) A candidate shall give at least three months notice in prescribed Form 'Submission draft copies of Thesis' obtainable from the IPS of his intention to submit his thesis for examination.
- (b) On completing the approved programme of study and research, a master's candidate shall submit to the IPS six copies of his/her thesis for examination, while a doctoral candidate shall submit seven copies (bound with soft cover).

(It is advisable to submit to the IPS a draft copy of the thesis before submitting the six/seven examination copies. This is to ensure that the proper format is followed before the thesis is sent for examination)

- (c) A candidate shall, within 60 days after successful defence of his/her thesis, submit to the IPS three bound copies of the approved thesis together with the unbound typescript.

Technical Specifications

Typing should be done on a word processor, with printing done on a letter quality printer. Candidates for higher degrees are urged to consult the IPS on matters of thesis format before starting to type their draft. This will avoid costly errors and delays.

Typeface and Font Size

The entire text of the thesis, including headings and page numbers, must be produced with the same font of typeface. The font size should be 10 to 12 points and should not be scripted or italicized except for scientific names and terms in a different language. **Bold** print may be used for headings. Footnotes and text in tables should not be less than 8 points.

Some fonts appropriate for thesis are:

ARIAL
BOOK ANTIQUA
BOOKMAN
Helvetica
Helvetica-Narrow
Palatino
Times
Times New Roman

Margins

For the first page of any new chapter, the left, top and bottom margins should be at least 40 mm for the rest of the pages, the left margin should be at least 40 mm and the top and bottom margins should be at least 25 mm. The right margin should be at least 25 mm for all pages. Margin specifications are meant to facilitate binding and trimming. All information (text headings, footnotes, and illustrations), including page numbers, must be within the text area.

Spacing

The thesis should be typed 1.5-spaced. The following, however, should be single-spaced:

- (i) explanatory footnotes (if absolutely necessary);
- (ii) quotations longer than three lines set in a block;
- (iii) references or bibliography (except between entries);
- (iv) multi-line captions (tables, figures, plates);
- (v) appendices, such as questionnaires, letters; and
- (vi) headings or subheadings.

Pagination

Pages should be numbered consecutively throughout the thesis, including pages for tables, figures and appendices. Each appendix should be identified separately using capital letters (A,B,C). The pages of the appendices should also be numbered accordingly. Page numbers should appear by themselves and should not be bracketed, hyphenated or accompanied by other decorative devices.

Preliminary pages preceding Chapter I must carry page numbers in small Roman numerals (i, ii, iii). The title page should not be numbered though it is counted as page i. all other pages should be numbered centrally about 2.5 mm from the bottom.

Page 1 begins with the first page of the Introduction (or Chapter I). All page numberings are to be made centrally at the bottom (about 40 mm from the bottom).

Printed text or illustrations are on only one side of each sheet. Only the original word-processed copy of a thesis or its good and clean photocopies will be accepted.

Paper

White simili paper (80 g.s.m) or paper of equivalent quality should be used. Paper should be of A4 size (210 mm x 297 mm).

Binding

When the thesis has been completed and all necessary signatures obtained, the candidate should seek the service of a reliable binder. All copies should be checked carefully to ensure that all pages are in their correct order. IPS has a checklist to help you determine whether you have met the University requirements.

The thesis should be bound with hard covers. The binding should be of a fixed kind in which pages are permanently secured. The covers should have sufficient rigidity to support the weight of the work when standing on a shelf. All thesis are to be fully bound in **BLACK**

The following should be lettered in gold from the head to the foot of the thesis spine, using a 24-point font:

Name of candidate;
Degree for which the work is submitted; and
Year of submission.

The following particulars should be provided on the thesis cover, using 18-point gold block font:

Title of thesis;
Name of candidates;
Degree;
Name of university; and
Year of submission.
(see Appendix A).

CHAPTER II

FORMAT OF THESIS

Theses are generally composed in three main divisions: the preliminary pages or front matter; the text or main body, usually divided into parts, chapters and sections; and the ending pages or back matter.

The preliminary pages, or front matter includes the title page, dedications, preface, acknowledgements, table of contents, list of table, figures, graphs, maps, diagrams, plates, abbreviations and abstract.

The ending pages or back matter consist of bibliography or references, appendices, and vita.

The following is an example of how various pages in a thesis, from preliminary or front matter to ending pages or back matter, are arranged. We recommend that this sequencing be used as a guide, although not every thesis includes all the items listed below:

Item	Remarks
1. Blank leaf	
2. Title page	Not to be paginated but counted as i
3. Dedication (optional)	Not to be paginated or listed in Table of contents but counted as ii
4. Preface/Acknowledgements	To be paginated as page ii or iii if there is a dedication and listed in Table of Contents.
5. Table of Contents	Paginated, but not listed in Table of Contents
6. List of Tables	Paginated and listed in Table of Contents
7. List of Figures	Paginated and listen Table of Contents

Item	Remarks
8. List of Plates	Paginated and listed in Table of Contents
9. List of Abbreviations or Glossary	Paginated and listed in Table of Contents
10. Abstracts	Paginated and listed in Table of Contents (Two versions are required: Bahasa Malaysia and English)
11. Main body (chapters)	Paginated beginning with page 1
12. Bibliography or references	Paginated
13. Appendices	Insert a leaf with only the word APPENDICES in the centre of the page; This sheet is counted but not paginated. The actual appendices are paginated.
14. Approval sheets	Not paginated or listed in Table of Contents
15. Blank leaf	

Title Page

This page (see Appendix B), includes the following information:

- (i) full title of thesis;
- (ii) full name of author;
- (iii) degree for which the thesis is submitted;
- (iv) name of the institution to which thesis is submitted;
- (v) faculty/centre in which research was conducted;
- (vi) month and year of submission.

The title should describe the content of the thesis accurately and concisely, normally omitting words such as “ An Investigation . . .”, “ An Analysis . . .”, or “A Study . . .” which are redundant as all theses are investigations, analyses, studies of a kind or another. It should be typed single-spaced.

Table of Contents

The Table of Contents immediately follows the Acknowledgements. It lists in sequence, with corresponding page numbers, all relevant subdivisions of the thesis, including the titles of chapters, sections and subsections; the bibliography or reference list; the list of abbreviations and other functional parts of the whole thesis, the appendices (if any); and the index (if provided). A table of contents should not be listed in The Table of Contents itself! (See Appendix C).

If a thesis comprises of more than one volume, the contents of the whole thesis are shown in the first volume and the contents of the subsequent volumes in separate contents list in the appropriate volume. The words VOLUME ONE (1 or 1) must be placed centered beneath TABLE OF CONTENTS.

Major heading within chapters (primary headings) are centered. All subheadings (secondary and tertiary) are typed flushed with the left margin. Tertiary headings are not listed in the Table of Contents (see Appendix D).

Approval Sheet

This sheet bears the signatures of the Dean of IPS certifying approval of the thesis by the Board of Examiners. To avoid unnecessary delay in getting signatures from the committee members or examiners who may be out of campus for extended periods, only the signature of the Dean of IRPS appears in the thesis. Examiner's signatures, however, are kept in the IPS files.

Preface/Acknowledgements

Preface or Acknowledgements may contain all or some of the following information:

- (i) Explanatory notes or reasons for doing the study (usually in Preface);
- (ii) Acknowledgement of guidance and assistance from individuals and institutions (usually in Acknowledgements).

For theses, PREFACE is optional while ACKNOWLEDGEMENTS is generally preferred. The acknowledgements can be written in the first person (e.g. I should like to thank . . .), or the third person (e.g. The author wishes to acknowledge . . .).

List of Tables

This list shows the exact titles or captions of all tables in the text and appendices, together with the beginning page number of each table.

List of Figures

This includes graphs, maps, or illustrations of other kinds. The exact title or caption and its corresponding page number is listed. Figures should be numbered consecutively throughout the thesis, including those in the appendices.

List of Plates

Full-page illustrations, especially photographs, are usually called plates. The list, if any, follows the List of Figures, and is numbered consecutively throughout the thesis.

List of Abbreviations

If an assortment of abbreviations and acronyms (e.g. FAO, DOA, MARDI, PORIM) is used in the thesis, it is best to list them in a List of Abbreviations with their meanings, even though the full name are given at the first mention in the text. This list serves as ready reference to readers not familiar with the abbreviations. Universally recognized symbols (°C, cm, mm, kg, ha) need not be listed.

Abstract

The abstract is a digest of the entire thesis and should be given the same careful attention as the main text. Reference to literature is not normally made in the abstract. Abbreviations or acronyms must be preceded by the full term at the first use.

An abstract should not normally exceed 350 words and typed 1.5-spaced. It includes a brief statement of the problem, a concise description of the research method and design, summary of major findings including the significance or the lack of it, and conclusions.

The abstract should be given in English and Bahasa Melayu. The version to appear first is of the same language used in writing the thesis. The format of abstract heading is shown in Appendix E.

Even though a thesis may have been written in English, the abstract in Bahasa Melayu must also reach an acceptable scholarly standard. Common pitfalls such as spelling errors, incorrect usage of prepositions and prefixes (e.g. di, ke) should be avoided. Scientific terms must be used consistently.

Text of Thesis

Body of Thesis

The body of a thesis normally consists of the following headings or chapters:

Introduction

The introductory chapter generally introduces the problem and indicates its importance and validity. It sets forth the context, the hypotheses to be tested and the research objectives to be attained.

Literature Review

It is a critical review of literature related to the topic. It is meant to act as a base for the experimental/analytical section of the thesis. Literature selected must be up to date, analysed and synthesized logically. It is not a mere summary of works of different authors.

Materials and Methods

It describes the methods and techniques used. It may also contain validation of methods used. In social science, a theoretical framework is generally included.

Results

It presents a complete account of results and analyses of the study in the form of figures, tables or text so that the key information is highlighted.

Discussion

It discusses the result of the study in relation to the hypotheses. It highlights the main findings, their significance and implications. A separate chapter for this is common in technological disciplines. In social science, such a discussion often appears under Results and Discussion. Conclusions and recommendations may be presented here or under a separate chapter.

Summary

To distinguish from the abstract, this section generally sums up the findings, discussion, conclusions and recommendations of the study.

Note on Last Paragraphs

The last paragraph of any page should comprise at least two lines of text. In other words, any heading appearing near the bottom of a page should be followed by at least two lines of text. If this cannot be done, push the heading and the line to the next page.

If the last paragraph of a page has to be continued on the next page, make sure that at least two lines of text appear on the next page.

Tables

Tables are numbered consecutively (with Arabic numerals) throughout the thesis (including text and appendices). There are two possible numbering schemes: either (a) number them consecutively throughout the thesis, or (b) number them by chapter, e.g. Table 1.1, 1.2, 1.3, 2.1, 2.2 and so on. No thesis may have two different tables called "Table 1". All tables are to be listed under LIST OF TABLES in the preliminary pages (including tables appearing in the appendices). Tables should be placed after being mentioned in the text. Short tables should not stand alone on a page.

Tables are captioned single-spaced above the tables (see Appendix F). Capitalise only the first letter of the principal words in the caption (excluding words like "of", "the", "to"). If preferred, use "down style" in which all letters are of lowercase except for proper nouns and first letter in the caption.

Table sources and notes should be placed directly below the table (not at the bottom of the page). Use superscript symbols (e.g. *, **, ***) or lowercase letters, (e.g. a, b, c) but never numerals for tables footnotes.

Illustrations

Illustrations include maps, charts, graphs, diagrams, and photographs. Photographs normally called PLATES, while the rest are called FIGURES. Each of these categories are numbered consecutively throughout the thesis, including those in the appendices. Illustrations should be of good quality. The trend now is to use computers.

The figure/plate number and caption should be typed below the illustration using Arabic numerals and lowercase, except for proper nouns and first letters of principal words (see Appendix G). If preferred, "down-style" can also be used in which all letters are of lowercase except proper nouns and first letter in caption. Illustration should be inserted near their mention in the text.

If an illustration occupies an entire page, the caption may be typed on the left-hand facing page (reverse side blank), which is counted but paginated. A right-hand page in landscape format should have the top of the illustration at the binding edge. The illustrations number should be typed parallel to the way the figure/plate reads. The page number is typed in standard text position. Illustrations should conform to standard margin requirements.

Footnotes

Footnotes should be used sparingly in a thesis regardless of the field of study. They should be used only to clarify a certain term, to state conversions factors or exchange rates and not to cite authority for specific statements or research findings. Citations of authority is done in the text as described in the following section. Extensive footnoting tends to distract

the reader from the main argument of the text. If footnotes are necessary, the indicators (the reference numbers in the text) are usually superscript (e.g. ^{1, 2, 3}). The numbering of footnotes should begin with 1 and must be continuous within each chapter or appendix, and not throughout the whole text.

Citations in the Text

The author is responsible for choosing a style of citation that is appropriate to the field and using that style correctly and consistently. Students may consult their supervisors for guidelines.

References or Bibliography

Bibliography is a term commonly taken to mean a list of works cited as well as works consulted but not cited, whereas the reference list refers only to a list of works cited. You may use either one but make sure it is correct.

The University does not specify which bibliography style to use. It is, however, to your advantage to follow a style used by an authoritative journal in your field. Samples of commonly used bibliographic styles are given in Appendix H.

Appendices

An appendix or appendices, if any, are placed after the reference list or bibliography. Details of the appendices are listed by type in the Table of Contents. Appendices include original data, summary, side-line or preliminary tests, tabulations, tables that contain data of lesser importance, very lengthy quotations, supporting decisions, forms and documents, computer printouts and other pertinent documents. Appendix materials should be grouped by type, e.g. Appendix A: Questionnaire, Appendix B: Original Data, Appendix C: Results Tables.

CHAPTER III

WRITING CONVENTIONS

Units of Measure

Use internationally recognized abbreviations for units of measure, such as:

20 milliliters (20 ml)
5 kilogram (5 kg)
20 kilometer (20 km)
2.5 hectare (2.5 ha)
3.7 metric tone (3.7 mt)
45 parts per million (45 ppm)
12 gram (12 g)
500 U.S. Dollars (USD 500)
3.4 metric tonne/hectare (3.4 mt/ha)

The numbers before the measurement units should not be spelled out, e.g. 5 kg, not five kg even if they are below 100 (see below), unless they are the first words of sentences.

Numbers

Write out all numbers less than ten unless they are attached to units of measure (e.g. 5 kg, 10 ml). Use figures for 10 or more than 10. If a sentence begins with a number, write the number in words, e.g. “Three hundred and eighty-five farmers were sampled from the study area.”

If you are using a series of figures, use numerals:

- (a) In the room there were 4 chairs, 12 boxes, 13 books, 10 files, 9 umbrella and 8 pairs of shoes.
- (b) The number of taxi permits issued during the past five years was 8, 53, 27, 38, 52, and 90.

Elliptical Mark

Writers use ellipsis to show an omission from quoted material. The ellipsis consists of three-spaced full stops (. . .). When an ellipsis follows a sentence, it appears as four full stops (. . .) - - one full stop marks the end of the sentence and the other three signal the omission. For example:

Coombs (1985: 4) wrote about the conference:

The conference at Williamsburg . . . agreed that the world educational crisis sketched in the document was real. . .

Use of Brackets ()

Within direct quotations, brackets are used to enclose any explanatory note inserted by the thesis writer, e.g.

This year (1996) alone, we had two hundred applicants wanting to join our holiday camp (Mustafa, 1996).

Candidates should use “sic” within brackets (sic) to indicate a certain doubt as to the meaning or factual error. It is used in quotations to show that the original is being faithfully reproduced even though it is incorrect or seems to be so. Errors, which are obviously typographical, should be corrected as a matter of professional courtesy.

Use of Symbol for Percentage

The symbol % may be used in place of percent, e.g. 27.3% and typed without a space. If the candidate prefers to write 27.3 percent in full, then consistency should be maintained throughout.

Policy on Direct Quotations

Direct quotations must be minimized at all costs, except in some fields such as literature (e.g. quotations from Shakespeare). Extensive use of direct quotations can be quite irritating, especially if the quotations appear in a language other than that used in the thesis. For example, a thesis written in Bahasa Malaysia should not quote materials directly in another language (e.g. English, Tagalog). The candidate must learn to synthesize materials in other languages and paraphrase them in his own words and style, an ability which is required in graduate education.

CHAPTER IV

USE OF EDITORIAL SERVICE

Some candidates employ professional editors to “polish” their thesis presentation. This should be done before the thesis is sent for examination. The IPS does not insist that all theses be sent to professional editors (who charge a fee theses that are reasonably free of errors. Your supervisors cannot be held responsible for errors in your thesis and you cannot expect them to be your editors.

The IPS stresses on consistency and accuracy. A consistently misspell word is also unacceptable for instance.

A candidate who follows this Guide faithfully is not likely to face many problems in having his/her thesis accepted. In addition, candidates should also refer to recently approved theses in their fields at UniKL for guidance. However, errors made by others and overlooked by the IRPS should not be repeated or used to justify their perpetuation.

Good Luck!

Appendix A

Spine and Cover of the Thesis

<p>MOHAMMAD HARUN DIN</p> <p>DOCTOR OF PHILOSOPHY</p> <p>2011</p>	<p>NEW COMPUTATIONAL DATALOGGER MONITORING SYSTEM FOR MANAGING QUALITY OF SOIL IN PALM OIL PLANTATION</p> <p>MOHAMMAD HARUN DIN</p> <p>DOCTOR OF PHILOSOPHY UNIVERSITI KUALA LUMPUR 2011</p>
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Appendix B

Title Page

**NEW COMPUTATIONAL DATALOGGER MONITORING SYSTEM
FOR MANAGING QUALITY OF SOIL IN PALM OIL PLANTATION**

By

MOHAMMAD HARUN DIN

**Thesis Submitted in Fulfillment of the Requirements for the
Degree of Master of Engineering Technology in
Universiti Kuala Lumpur
British Malaysian Institute
Malaysia**

August 2011

Appendix C

Suggested Table of Contents

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Appendix D

Layout of a Chapter

CHAPTER NUMBER

TITLE OF THE CHAPTER

There may be a preamble in the beginning of a chapter. The purpose may be to introduce the themes of the main headings.

Main Heading No 1

(Primary Level) - Bold & flushed with margin

Sub-heading No. 1 (Secondary Level) - Bold & flushed with margin

There should be a minimum of two sub-headings to justify having sub-headings.

Sub-heading No. 2 (Secondary Level) - Bold & flushed with margin

All first letters of principal words are capitalized and the sub-heading is typed flush with the left margin.

Tertiary Heading No. 1 (under Sub-heading No. 2) - Bold & flushed with margin

There should be at least two tertiary headings to justify having tertiary level headings. Tertiary headings are usually not listed in Table of Contents.

Tertiary Heading No. 2 (under Sub-heading No. 2) - Bold & flushed with margin

Appendix E-1

Format of Abstract (English Version)

ABSTRACT

The main objective of this research is to construct DNA barcodes for approximately 44 species from 21 different plant families of Malaysian herbs using three different DNA regions which are *rbcL*, *trnH-psbA* and *matK*. The objective of this study is to also determine which of these three regions is the most suitable candidate for a single locus barcoding in order to correctly identify the selected samples. Selected herbal species were collected throughout several regions in Peninsular Malaysia and conventional salt extraction method was used for genomic DNA isolation. *RbcL*, *trnH-psbA* and *matK* regions were amplified using Polymerase Chain Reaction (PCR) and was proceeded with DNA sequencing. Species verification capability of each region was then determined via comparison with Nucleotide Basic Local Alignment Search Tool (BLASTn). *RbcL* sequences recovered from the samples were able to be aligned with ease without any alignment gaps while *matK* sequences were successfully aligned but with the presence of small amount of indels. *TrnH-psbA* sequences were unable to be aligned due to high variation level, making phylogenetic analysis impossible to be carried out. All three barcoding genes applied in this study (*rbcL*, *trnH-psbA*, and *matK*) were successfully retrieved from 6 herbal species: *Oenanthe javanica* of the Apiaceae family, *Orthosiphon stamineus*, *Plectranthus barbatus* and *Solenostemon scutellarioides* of Lamiaceae family, *Cinnamomum verum* of Lauraceae family, and *Labisia pumila* of Myrsinaceae family. On the other hand, 16 species were successfully recovered using two different barcoding genes: *Andrographis paniculata* of Acanthaceae family, *Centella asiatica* of Apiaceae family, *Eurycles amboinensis* of Amaryllidaceae family, *Catharanthus roseus* of Apocynaceae family, *Aloe vera* of Asphodelaceae family, *Mentha arvensis*, and *Pogostemon cablin* of Lamiaceae family, *Melicope pteleifolia*, *Citrus aurantifolia* and *Citrus hystrix* of Rutaceae family, *Ficus deltoidea* of Moraceae family, *Curcuma longa*, *Zingiber officinale* and *Kaempferia galanga* of the Zingiberaceae family, *Brucea javanica* of Simaroubaceae family and *Phaleria*

macrocarpa of Thymelaeaceae family. For the efficiency as a DNA barcode, *trnH-psbA* plastid region produced the highest frequency of correct species identification value, FCI (31.31%) followed by *rbcL* (29.63%) whereas *matK* generated the lowest FCI (15.58%). In conclusion, *trnH-psbA* region was demonstrated to be the most suitable DNA barcode for the 44 selected species of Malaysian herbs. The barcode sequences obtained in this research will be applied for data management purpose such as identifying unknown plant specimens and detect the presence of certain herbal species in processed products.

Appendix E-2

Format of Abstract (Bahasa Malaysia Version)

ABSTRAK

Objektif utama penyelidikan ini adalah untuk membina barkod DNA bagi 44 spesies herba dari 21 keluarga tumbuhan di Malaysia menggunakan tiga jujukan DNA berbeza iaitu *rbcL*, *trnH-psbA* dan *matK*. Objektif penyelidikan ini juga adalah untuk mengenalpasti jujukan DNA yang paling sesuai untuk dijadikan barkod DNA apabila digunakan secara individu bagi mengenalpasti spesimen dengan tepat. Spesies herba terpilih telah diperolehi dari beberapa lokasi spesifik di Semenanjung Malaysia dan teknik konvensional presipitasi garam telah digunakan bagi pengekstrakan DNA genomik. Jujukan *rbcL*, *trnH-psbA* dan *matK* telah diampifikasi melalui teknik Tindak Balas Rantai Polimerase (PCR) dan kemudian dianalisis menggunakan teknik Penjujukan DNA. Keupayaan pengesahan spesies bagi setiap jujukan kemudiannya ditentukan secara perbandingan dengan menggunakan Nucleotide Basic Local Alignment Search Tool (BLASTn). Jujukan *rbcL* yang diperolehi melalui kajian ini berjaya dijajarkan tanpa menghasilkan sebarang jurang penjajaran manakala jujukan *matK* juga berjaya dijajarkan tetapi turut menghasilkan sejumlah kecil indel. Jujukan *trnH-psbA* gagal dijajarkan disebabkan oleh variasi jujukan ini yang tinggi seterusnya mengakibatkan analisis filogenetik tidak dapat dilaksanakan untuk gen ini. Ketiga-tiga gen barkod yang digunakan dalam kajian ini (*rbcL*, *trnH-psbA*, dan *matK*) berjaya diperolehi dari 6 spesies herba: *Oenanthe javanica* dari famili Apiaceae, *Orthosiphon stamineus*, *Plectranthus barbatus* dan *Solenostemon scutellarioides* dari famili Lamiaceae, *Cinnamomum verum* dari famili Lauraceae dan *Labisia pumila* dari famili Myrsinaceae. Manakala dua jenis gen barkod berbeza berjaya diperolehi dari 16 spesies herba: *Andrographis paniculata* dari famili Acanthaceae, *Centella asiatica* dari famili Apiaceae, *Eurycles amboinensis* dari famili Amaryllidaceae, *Catharanthus roseus* dari famili Apocynaceae, *Aloe vera* dari famili Asphodelaceae, *Mentha arvensis* dan *Pogostemon cablin* dari famili Lamiaceae, *Melicope pteleifolia*, *Citrus aurantifolia* dan *Citrus hystrix* dari famili Rutaceae, *Ficus deltoidea* dari famili

Moraceae, *Curcuma longa*, *Zingiber officinale* dan *Kaempferia galanga* dari famili Zingiberaceae, *Brucea javanica* dari famili Simaroubaceae dan *Phaleria macrocarpa* dari famili Thymelaeaceae. Bagi aspek keefisienan barkod DNA, jujukan *trnH-psbA* merekodkan peratusan frekuensi pengidentifikasian spesies (FCI) yang tertinggi (31.31%) diikuti oleh *rbcL* (29.63%). *MatK* sebaliknya mencatatkan nilai FCI yang terendah (15.58%). Secara kesimpulannya, jujukan *trnH-psbA* merupakan barkod paling sesuai untuk 44 spesies tumbuhan herba Malaysia yang telah dikaji. Jujukan barkod yang berjaya diperoleh dari penyelidikan ini akan digunakan bagi tujuan pengurusan data seperti dalam pengenalpastian spesimen tumbuhan dan bagi mengesan spesies tumbuhan tertentu yang terkandung dalam produk yang telah diproses.

Appendix F

Sample of Table

Table 3.3: Primers and reaction settings applied for each DNA barcode (Kress *et al.*, 2005; Song *et al.*, 2009; Vijayan and Tsou, 2010).

Gene	Name of primers	Primer sequence	Reaction conditions
<i>rbcL</i>	1f	ATGTCACCACAAACAGAAAC	1) [95°C 2 min] 1 cycle
	724r	TCGCATGTACCTGCAGTAGC	2) [94°C 1 min, 55°C 30s, 72°C 1 min] 30 cycles 3) [72°C 7 min] 1 cycle
<i>trnH-psbA</i>	Fwd PA	GTTATGCATGAACGTAATGCTC	1) [94°C 5 min] 1 cycle
	revTH	CGCGCATGGTGGATTCACAATCC	2) [94°C 1 min, 55°C 1 min, 72°C 1.5 min] 30 cycles 3) [72°C 7 min] 1 cycle
<i>matK</i>	390F	CGATCTATTCATTCAATATTTTC	1) [94°C 1 min] 1 cycle
	1326R	TCTAGCACACGAAAGTCGAAGT	2) [95°C 30s , 55°C 30s, 72°C 1 min] 30 cycles 3) [72°C 7 min] 1 cycle

Appendix G

Sample of Plate/Figure



Plate 9: A coated container with thermometer

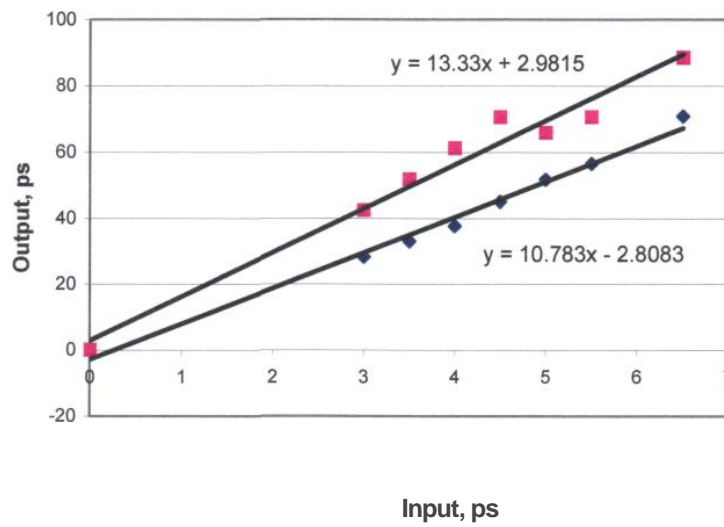


Figure 5.14: Input/output response of the Time Amplifier circuits

Appendix H

Samples of Commonly Used Bibliographic Styles

1. The Institute of Electrical and Electronics Engineers (IEEE)

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