

MANUAL
on
THESIS
PREPARATION



**Jawaharlal Nehru
Krishi Vishwa Vidyalaya
Jabalpur (MP) India**

2018

Manual on Thesis Preparation



**Jawaharlal Nehru Krishi Vishwa Vidyalaya
Jabalpur 482004 (Madhya Pradesh), India**

2018

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PREFACE

(to Fourth edition)

A thesis is a permanent documental evidence and a valid record of the curricular research performed by a scholar at Master or Doctorate level degree programme. It provides information on the scholar's research work to the future researchers. The objective of the document is to provide a set of guidelines for a research scholar to prepare the thesis to satisfy the criteria of being a permanent and life time record.

The University is offering Master degree programme in 19 and Doctorate in 16 subjects with intake capacity of 405 in Master and 108 in Doctorate degree programme. The students are admitted based on merit of entrance examination organized by third party.

During previous two years, new notifications have been made by the University to improve quality of curricular research and its presentation *viz.*, printing of text part on both side of the paper in the thesis, Best Thesis Award at the University level, audio and video recording of oral comprehensive and thesis *viva voce* examination at Doctorate degree level and testing of plagiarism at Doctorate level prior to submission of thesis.

To address the problems of agriculture directly associated with the farmers and to solve the riddles, mystery and enigma of agricultural sciences and convert science into farmers' friendly technologies in best possible way, the University has signed Memorandum of Understanding with 43 institutes and Universities.

The manual is meticulously supported by Dr. S.B. Nahatkar, Associate Director Research, JNKVV, Jabalpur; Shri V.K. Gour, Ex. Professor, JNKVV, Jabalpur; Dr. S.D. Upadhyaya, Professor and Head, Department of Forestry, College of Agriculture, Jabalpur; Dr. S.B. Das, Professor, Department of Entomology, College of Agriculture, Jabalpur; Dr. A.K. Shukla, Associate Director Instruction; and Dr. A.K. Mehta, Professor, Department of Agronomy, College of Agriculture, Jabalpur with utmost care.

The manual includes the common errors made by the students while writing the thesis. We hope the efforts will help students and advisors to make curricular research and its reporting valuable. Suggestions for improvement shall always be solicited.

Date: March 15, 2018

Place: Jabalpur

Dhirendra Khare
Director Instruction
JNKVV, Jabalpur

PREFACE

(to third edition)

A *Thesis* is a scientific document embodying bonafide research work carried by a student, on a given problem. It is a proposition advanced and publicly debated, defended or maintained by candidate for degree in a University.

Accordingly documentation of research conducted by postgraduate students of Jawaharlal Nehru Krishi Vishwa Vidyalaya (JNKVV) has been an essential part of the degree requirements. Through publication of a manual, a step was initiated during year 1978 for the uniformity in the style of thesis presentation across the faculties and disciplines. Later in 2004, the contents of the manual were modified in view of phenomenal changes in the process of thesis preparation.

The present revised edition entitled 'Guidelines for Thesis Preparation is an updated, modified attempt towards the continued precise uniformity and presentation style. With the awareness of Intellectual Property Rights (IPR) and Copyright Act, suitable additions have been included. The reference citation system has been made computer-friendly.

The present manual embodies guidelines for various chapters of a thesis with comprehensive set of instructions. It hopes that the manual will prove to be the great help in preparation and uniform presentation.

Place: Jabalpur

Date: August 30, 2013

P.K. Mishra)
Director Instruction
JNKVV, Jabalpur

PREFACE

(to Second edition)

Documentation of research conducted by post-graduate students of Jawaharlal Nehru Krishi Vishwa Vidyalaya is an essential part of the degree requirements. An attempt was made to bring about uniformity in the style of thesis across all faculties and disciplines through publication of manual in the year 1976. The manual, however, no longer served the purpose in view of phenomenal changes in the process of thesis preparation witnessed in the recent past. Necessity for a manual for thesis preparation using modern tools was urgently felt. The present manual embodies guidelines for various chapters of a thesis with comprehensive set of instructions for each chapter. It is earnestly hoped that the manual will be well received by students as well as thesis research supervisors. It is hoped that the manual will prove to be a great help in preparation of thesis and in bringing about uniformity in the style of the document.

Place: Jabalpur

Date: January 19, 2004

R.K. Gupta
Director Instruction
JNKVV, Jabalpur (MP)

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1. Preamble

Thesis is a dissertation involving research, written by a candidate for a university degree. This is an important document in every student's career. The manual on thesis preparation is designed for students preparing thesis, which is a partial fulfilment of the requirement for the award of Master and Doctorate degree by the University. It is a sole responsibility of the student to fulfil this requirement under the guidance of the advisory committee. The purpose of this document is to set a guidelines and criteria to maintain uniformity in theses submitted to the University. It is desirable that the students, advisors and members of advisory committee should carefully read this manual and follow the guidelines laid here.

Author's opinions should either be supported with data collected during the period of investigation or either the data of other investigations, that substantiate the opinion expressed therein. The investigation should be so reported that, if desired, it may be readily duplicated and verified. Therefore, the material and methods of the investigation, the sources of the data used and other aspects of the investigation should be carefully and systematically indicated. A thesis should be written in the specified format with readable, fluency and attractive style in British English with internationally accepted words of crops.

It is also desirable that the thesis shall confirm the global policy on plagiarism to protect the copyright ethics. For this all the submitted thesis of Doctorate degree are scanned through anti-plagiarism software. It is also expected that facts, figures, text, charts, statements etc. shall genuinely be supported by authenticated references.

The manual will help students in maintaining uniformity in the style of presentation. The thesis is unlikely to be accepted, if it does not conform to these standards.

The University has constituted Best Thesis Award to recognize quality research work and its presentation and improve the standard of curricular research.

2. Format of Thesis

The thesis shall consist of four main parts in the following order

2.1	Title page	Pagination
	Cover Spine title Inner cover	No
2.2	Preliminary pages	
	Certificate I Certificate II Declaration and Undertaking by the candidate Copyright Transfer Certificate Acknowledgements Contents List of chapters List of tables List of figures (if any) List of plates (if any) List of symbols (if any)	With small Roman numeral as footer at the bottom centre (i, ii, iii, iv.....)
2.3	The text	
	Introduction Review of Literature Material and Methods Results Discussion Summary, Conclusions and Suggestions for Further Work References	With Indo-Arabic numerical centered at the bottom of the page as footer
2.4	Appendices (if required)	
2.5	<i>Vitae</i>	No
2.6	Abstract of the Thesis	On separate sheet not bound with thesis

Detail of each part of the thesis is discussed in forthcoming chapters whereas Instruction for typing are provided in the Appendix 1.

3. Guideline for preparation of preliminary pages of the Thesis

3.1 Cover page

It is the first page of the thesis consisting of

- Title of the thesis
- Name of the Degree for which thesis is being submitted
- Name of the Scholar
- Enrollment number
- Name of the Department
- Name of the College
- Year of thesis submission

3.1.1 Title

- An appropriate title distinguishes the thesis from all others from the same area of study. It should be complete and brief, *i.e.*, not more than 15 words and comprehensive, to convey substance of the work reported covering the main theme of the work done.
- Start the title with key words. Avoid suffix "study on", 'Effect of', 'Influence of' etc. Abbreviations, scientific name (unless very necessary), chemical formulae, jargons and the like should be avoided in the title. A title briefly identifies the subject, indicates the purpose of study and introduces key terms, concept, contents and the scope of the study.
- It should be exactly the same as approved in the synopsis.

2013 M.Sc. (Ag) Genetics and Plant Breeding A. BISEN	R. Ravishanker
	Ph.D. Plant Pathology 2014

- The font of the title should be **Arial**; size: **20-26**; **standard bold**.
- Do not put full stop at the end of the title.
- Start each word of the title with a capital letter except punctuations.
- Words and phrases should not be split.
- Avoid abbreviations in the title.

3.1.2 Spine title

- The spine of thesis shall bear, name with short form of initials, name of degree, Subject and the year of submission.
- The printing on the spine shall be towards the width side when the volume is lying vertical for Ph.D. and length side for Master.

3.1.3 Degree for which thesis is being submitted

Nomenclature of the subject in which degree has to be awarded shall be as per Notification No.: Acad./II/Q-14(IV) No. 887 dated 12.6.2017 of the University as per recommendations made by the V Deans Committee of ICAR (Appendix 3).

3.1.4 Name of the scholar

Write full name of the Student and capitalized each word.

3.1.5 Enrollment number

Write enrollment number allotted by the University below your name within bracket.

3.1.6 Name of the Department

- Write full and correct name of the Department as given in Appendix 3.
- Start each word with a capital letter except punctuations.

3.1.7 Name of the College

Write complete name of the college with pin code number after name of the city.

It has to be followed by the complete name of the University, name of the city, pin code and name of the State in short form without full stop (MP).

3.1.8 Year of submission

Mention the year in which the thesis is submitted.

General instruction for cover page

- Follow provided sample (Proforma 1).
- The alignment for all the matter in the title page should be Center.
- Follow details of the cover page along with font, font size and placement as presented on Proforma 1 and Appendix 2.
- Use correct spelling of fulfilment.
- Colour scheme for cover page

Faculty	Colour of the cover page	
	Master	Doctorate
Agriculture	Green	Dark green
Agricultural Engineering	Yellow	Golden yellow

3.2 Certificates of approval

Following certificates are mandatory without any alteration in their formats:

Certificate I Certificate by the Chairman of the Advisory Committee to state that the work is original and conducted in his/her supervision. The format is given on Proforma 2.

Certificate II Certificate by the advisory committee to state that the work reported in the thesis is approved for Master degree after examination of the thesis by one external examiner and oral by advisory committee. The format is provided on Proforma 3.

Certificate given for Doctorate degree based on the satisfactory report of two external examiner and oral examination by one external examiner along with advisory committee. The format is provided on Proforma 4.

Typeface Arial 12; line spacing 1.5

Spellings Advisor and Adviser are correct to denote guide. Spelling Advisor is used frequently across the globe.

3.3 Acknowledgement

It recognizes the persons to whom the student is indebted for guidance and assistance and other organizations rendered facilities and resources without provoking IPR and copyright regulations. Financial/technical assistance received by the student from any institute/agency should be duly acknowledged. Care should be taken to avoid the social obligations in this section. Gratitude may be expressed to only those who really contributed to the work directly or indirectly.

- It should not be too lengthy and should not exceed one page.
- Cursive/italic scripts are not desirable.
- Place the heading acknowledgement at the top of the page with centre alignment. Leave one line in between text and heading.
- Text shall be single spaced with indent for first line of each paragraph.
- Full name with signature of the student should be given at the bottom of the acknowledgment with date and place as demonstrated below

Place: Jabalpur

Date: March 21, 2017

(Manoj Kumar Shrivastava)

3.4 Dedication

The thesis should not be dedicated to anybody.

3.5 Table(s) of contents

The table of contents provides an analytical overview of the text included and its sequence in the thesis. It includes major division of the thesis *viz.*, chapters, tables, figures etc. Titles and their location in the thesis in terms of page number are presented.

Titles of the division and subdivision included in the list of content should correspond exactly with those mentioned in the text.

The pages of title, certificates, acknowledgement, list of content(s) and vitae are not included in the table of contents.

Each and every list should be presented in separate sheet with the title at the top of the paper with Arial 12 size; Bold; Case title; Alignment center; after heading two point space should be given to start the table.

The table of contents should have the chapter headings and also the sub-titles, if any, with appropriate page references.

List of Contents

Number	Title	Page
1.	Introduction	
2.	Review of Literature	
3.	Material and Methods	
4.	Results	
5.	Discussion	
6.	Summary, Conclusions and Suggestions for Further Work	
6.1	Summary	
6.2	Conclusions	
6.3	Suggestions for further work	
7.	References	
8.	Appendices	

List of Tables

Number	Title	Page
--------	-------	------

List of Figures

Number	Title	Page
--------	-------	------

List of Plates

Number	Title	Page
--------	-------	------

List of Symbols

Symbol	Stand for
--------	-----------

List of Abbreviation

Symbol	Stand for
--------	-----------

List of Appendices

Symbol	Stand for
--------	-----------

- The list of content/table/figure/plate/etc., should be numbered in Indo-Arabic numerals.
- Content of the list should be arranged in the order in which it appears in the text.
- The title/caption of the content/ table/ figure/ plate/ etc., in the text and in the list should be the same.
- The font Arial with size 12; line spacing single and spacing after- 6 and before - 0 point should be adapted in the list.
- Titles should be written in sentence case.
- No terminal punctuation (full stop) should be used in the title.
- In the event of any other list, specify and follow the same rule of typing.
- The subheadings may be indented with one tab of 2 cm in from the main heading in subsequent lines.
- If the thesis is involving lot of symbols (Appendix 4 and 5) and abbreviations (Appendix 6) attach a list of symbols and abbreviations. Arrange the abbreviations alphabetically and arrange symbols in the similar fashion.
- The space before title of next chapter should be 6 point.

4. Preparation of main text

4.1 Printing

- Preliminary pages shall be printed on one side of the paper.
- **Printing from text i.e., Chapter Introduction to Appendices shall be on both side of paper.**

4.2 Pagination

Preliminary pages: Page numbers for the preliminary pages of the thesis shall be in small Roman numerals (i, ii, iii, iv, v, vi, etc.) and should be centered at the bottom of the pages.

Text: The text pages be numbered with Indo Arabic numerals consecutively throughout the thesis including the appendices, Photographs, diagrams, etc. should be placed as footer on the centre bottom of each page with the same font and size as of the text. The pagination should start with the first page of Chapter 1 and should continue throughout the text (including tables, figures, and appendices). Page of photograph, plate, figure etc. should be counted in pagination.

Numbering of chapter: The chapters should be numbered in Indo Arabic numerals, as

1. Introduction
2. Review of Literature
3. Material and Methods
4. Results and Discussion
5. Summary, Conclusions and Suggestions for Further Work

The subheadings under each chapter should be numbered in decimal point style as:

Chapter	Sub-heading	Sub-sub-heading	Sub-sub-sub-heading	
1	1.1	1.1.1	1.1.1.1
	1.2	1.2.1	1.2.1.1
2	2.1	2.1.1	2.1.1.1
	2.2	2.2.1	2.2.1.1

4.3 General

- The thesis must be written in British English.
- There should be scientific impersonality, *i.e.*, avoid using the words: I, we you, me, my, our and us.
- Avoid sweeping statements and making exaggerated claims.
- Tables and figures should always follow their first mention in the text.
- Avoid using abbreviations or symbols in the text of the thesis. This may be shown in tables/figures and defined in footnotes.
- Use per cent in running matter and % symbol in bracket.
- Abbreviations should be used sparingly if advantageous to the reader.
- All new or unusual abbreviations should be defined when they are used for the first time in the text.
- Sentences should not begin with abbreviations or numbers.
- The final copy of the thesis has to contain all the modifications/corrections suggested by the examiners and the members of the *Viva-Voce* Board and is to be submitted after the scholar successfully defends the thesis in the *viva-voce* examination.
- Format of quoting references, Caption of figures, Equation numbers, Heading of the tables should be followed consistently throughout the thesis.
- Academic in-charge is advised to preserve the corrected copy received from evaluator to avoid any discrepancy in final thesis.
- Follow typing instructions given in Appendix 1.

5 The text

5.1 Introduction

Introduction is the first chapter and it reveals

Background information

Justify selection of the problem in terms of its rational, scientific and practical significance. It requires critical analysis of relevant background information of the study to justify the problem.

First mention of the organism (crop, pathogen, insect etc.) in the main text should be complete and described by their Latin name (binomials) accompanied by the authority. In subsequent description, only English name be used and or binomials name of the required genus is abbreviated to initial letter with name of species without mentioning the name of the authority.

Botanical nomenclature should follow 'The Nomenclature of Cultivated Plants' (1980 Publ., International Bureau of Plant Taxonomy and Nomenclature, Tweede, Transitorium, Uithof, Utrecht, Netherlands). Tables shall be avoided in this chapter.

Importance

Discuss importance of the selected problem by answering what is the problem and why the proposed problem is selected by explaining its economic importance and a statement pertaining to the issue. Always include recent statistics depicting state, national and international pictures related to problem with references from authorized sources. Discuss limitations and assumptions of the study.

Hypothesis

Justify the basis of the proposed research to solve the proposed problem. Discuss hypothesis to be tested *i.e.*, H_0 and H_A . It must be specific and related to available technique.

Objectives

- The chapter shall culminate with 2-3 well-defined objectives.
- Objectives of the thesis must be lucid, complete, concise and self explanatory.

Other

- It should not exceed two pages for Master and three pages for Ph.D. thesis.

- Write introduction preferably in present tense.
- The complete text of Introduction be devoid of subheadings.
- Any statement on importance, crop, problem, statistics etc. shall be supported by the reference. These references shall be included in the list of reference.
- The chapter introduction should be written at the end *i.e.*, after writing all the chapters of the thesis. Writing of introduction with conclusion helps in linking the various parts of the thesis.
- The last paragraph must conclude the research gaps that the proposed research would like to address.

5.2 Review of Literature

Review the most relevant literature aspect wise in a condensed form with importance to the findings rather than the author. The review should have link from one aspect to another avoiding irrelevant references.

The main objectives of this chapter are to know what has already been done on the proposed research programme; critically analyze and justify the proposed research gap or unexplored areas; demonstrate the gap where the findings of the thesis will be applicable; other methods have been tried to solve it; show that the proposed work is original or some work has already been done with proposed gap or reporting of contrast results by the workers.

Details of methods, place of work and other irrelevant information should be avoided and may be cited if proposing changes in the methodologies. Use recent literature relevant to the aspects to be dealt in the research study.

For condensation of review, some words not of English origin may also be utilized (Appendix 8).

Findings should be grouped subject wise and reference should preferably be cited in the chronological order.

If one conclusion is drawn by several authors, then avoid repetition of quotation *i.e.*, in the event of more references involving the same aspect restructure a common statement.

All the references cited in the text should be incorporated in the chapter References with the same spelling of author(s) and year of publication.

Citation of reference in the text In the event of single authored publication, mention last name (surname) of the author followed by the year of publication *e.g.*, (Bhale, 2003) or reported by Bhale (2003).

In the event of two-authored reference, mention last name (surname) of the first author followed by last name of second author and then year of publication. *e.g.*, (Cardy and Beversdorf, 1984).

When more than two authors are involved then with the last name of the first author use *et al.* followed by the year of publication *e.g.*, (Bhale *et al.*, 1999) or Bhale *et al.*(1999) reported.

The word not of English origin but written in the text in Roman shall be italicized *e.g.*, *viz.*, *i.e.*, *et al.*, *Kharif*, *Rabi* etc.

When the same author or two authors or senior author with his coworkers is referred more than ones in different references published in the same year, number it as 'a', 'b' etc. after the year based on sequence in which they appear in the text. *e.g.*,

The use of protein markers for variety fingerprinting has greater discriminatory power than the use of morphological markers (Cardy and Beversdorf, 1984a). Basic zymogram patterns observed for each isozyme in cultivated soybean have been diagrammed by Cardy and Beversdorf (1984b). These are cited in chapter Reference as

Cardy BJ and Beversdorf WD 1984a. Identification of soybean cultivars using isoenzyme electrophoresis. *Seed Science & Technology* 12:943-954.

Cardy BJ and Beversdorf WD 1984b. A Procedure for the starch gel electrophoresis detection of isoenzymes in soybean. Department of Crop Science, Technical Bulletin, 119/8401. University of Guelph, Ontario, Canada.

Quotation from the report of any institute should be cited as JNKVV (2012); (ICRISAT, 2003).

In the event institute or organization is not clear one may cite it as Anon. (2017) or (Anon., 2017). It is cited in chapter Reference as Anonymous. 2017.

In this chapter finding of others are presented therefore the verb tense becomes most important in conveying subtle meanings. Review may be presented in past tense and should not exceed 10 printed pages for M.Sc. thesis.

Work of scientist(s) can be reported as accentuated, addressed, advocated, articulated, concerned, communicated, called attention to, clarified, conveyed, described, depicted, discussed, discovered, emphasized (gave emphasize to, put emphasis on, lay emphasis on), elucidated, enquired, enumerated, expressed, explained, explicate, focused, highlighted, substantiated, hoped, identified, mentioned, of the view, observed, portrayed presented, remarked, reported, revealed, showed, spelt out, stated, stressed, suggested, thrown light on, underlined etc.

While reporting, importance has to be given to the work, not to scientist.

Transliteration: In the event quotations, author's names, and titles of works have originally appeared in a non-Roman alphabet, the information should be transliterated into Roman alphabet for incorporation in the text.

5.3 Material and Methods

This section explains how the experiment was performed with the incorporation of following information without any interpretation. Impart enough detail to judge the validity and accuracy of results, soundness and pertinence of interpretation of the findings and their application. Material and methods should be written in **third person**, normally in **past tense**.

Details of the location where experiment/study performed:

Period/season/year and place of study, climate or weather conditions, soil type including physicochemical properties and others as relevant to the study. The meteorological data included has very high relevance and should not be included as ritual rather be correlated with the results and findings therein. The geographical position of the experimental site *i.e.*, Altlong information shall be given *i.e.*, latitude, longitude and altitude.

Material used in the experiment/study: Material *viz.*, crop, organism, variety, genotype, pathogen, media, pesticide, herbicide, fungicide, fertilizer, irrigation, chemical, medicine, equipment, machinery, etc., on which experiment was conducted along with source and nature of material, active ingredients and equipment used be detailed. If the research is oriented towards survey/social sciences descriptions of the processes for selection of site, participants, sampling, data gathering and analysis are the critical points. In survey type experiment, map of study area

is essential to have a prominent effect on the outcome of the experiment. The maps shall be clear, with longitudes and latitudes, a scale and a site locator. Use internationally recognized name/nomenclature for describing material. Local name of the organism shall be written with Scientific and English common name.

Duration and time of experiment/study: Timing for conducting research and duration of the experiment are important as weather, soil and other environmental parameters vary with the season. In case of sample survey, year of data collection be given as reference year of the study and be interpreted and discussed in relevant chapters.

Details of the methods used: Experimental design, number of replications, lay out of the experiments, observations recorded, methods adopted for experimentation and recording observation, statistical tools applied and analytical methods employed should find place in this chapter. Presentation of a rationale for the methodological approach is essential. Give complete description of all experimental procedures employed. Give only the reference(s) in case of standard method(s) used. Describe new methods or any improvement in detail to make it possible for the reader to repeat the work without clarification.

This section should also specify the crop variety, methodology for application of treatments, common cultivation practices including sowing, fertilization, weed management, irrigation, plant protection measures, harvest etc. For cropping system experiments, it should be clearly stated that whether the study was carried out on fixed location for the experimental period or site is changed every year. In rainfed and dryland experiments, initial moisture status at sowing (or at different stages), rainfall distribution and evaporation (as a graph) should be given. If the treatments are based on moisture conservation practices (summer ploughing, manures, mulching, land configuration etc.), moisture conserved, extraction and utilization (efficiency) data must be given. In irrigation studies (based IW/CPE ratio), daily evaporation and rainfall data in the form of a graph along with the dates of irrigation mentioned year wise in the text are necessary. The nutrient composition of manures (N, P, K, Fe, Zn, organic carbon content etc.) should be given. For new herbicides, mode of action should be clearly stated.

Treatments: Explain treatments in detail *i.e.*, specification of concentration, fertilizers doses etc.

Statistical analysis: Statistics helps in presenting complex data in a suitable tabular, diagrammatic and graphic form for an easy and clear comprehension and facilitates comparison, forecasting, formulating and test hypothesis as appropriate be included. Statistics also helps to improve the quality of data with the design of experiments and survey sampling. It provides tools for prediction and forecasting using data and statistical models. In survey, PRA, sampling techniques, collection of data, and in field experiments design of experiment and statistical techniques that are used for data analysis and other purposes should be clearly mentioned. Common tools may be described in short with reference however new tool shall be explained in detail. Table of ANOVA/ ANACOVA etc. has to be prepared with utmost care.

Symbols and abbreviations of internationally accepted units (Appendix 9) and statistical and mathematical abbreviations and symbols (Appendix 10) may be used to condense the section.

The references quoted in the chapter shall also be included the Chapter reference.

Follow a logical order in describing the methods *i.e.*, observation, experiment etc. Explain method adopted to record each observation. Mention unit of each observation and always use internationally accepted standard unit preferably metric units. Use only standard abbreviations. The full term for which an abbreviation stands should precede its first use in the text except in case of measurement units. The measurement units if any shall be followed consistently. Use only standard abbreviations.

5.4 Results

In this section statistically analyzed and processed experimental data are presented with the help of tables, graphs, figures, line diagrams, photographs etc. in a systematic manner.

Tables, diagrams, graphs, line diagrams etc. should have self-contained legend in bold and sentence case without full stop. Legend of the table should be placed at the top whereas for graphs, figures, line diagrams, photographs etc. at the bottom.

5.4.1 Tables

- Table should be numbered in Arabic numeral. The number of columns and rows in a table should be as minimum as possible.

- All the measurements should be in standard/ metric unit. Use prefixes to avoid citation of unit as decimal or as large numbers e.g., 0.010g or 10000µg should be written as 10mg.
- Use correct symbol or abbreviated forms of units (Appendix 9). Data should be restricted to one or two decimal figures only. Transformation of the data should be mentioned.
- The column comprising of serial number may be avoided. The letter size may be reduced with single space without compromising the readability.
- Separate portrait or landscape sheet may be used for large tables and other illustrations.
- Too many variables in one table have to be avoided.
- However small tables, figures and other illustrations may be incorporated with running text at the bottom of the page with text above.
- The units of the data should be defined. Appropriate statistical tests should be applied to the presented data. Footnote should be seldom used.

5.4.2 Graphs

- Message may be conveyed easily by presentation of the facts in graphical form.
- A graph should present only one or a series of related facts with ease of interpretation.
- Clumsy graphs should be avoided. Each graph should have short and concised title and numbering with Arabic numeral.
- Explanation of the gradient, pattern or colour used for differentiation should be given with the graph.
- The illustration should not repeat the data presented in tables and vice versa.
- Lettering of the graphs should be kept to a minimum.
- In a graph, inclusion of the numerical data or formulae is desirable.
- Use bar diagram for simple comparisons, linear graph for trend analysis and/or progressive growth while pie chart for contribution/share representation.

5.4.3 Line diagrams

- Original line diagram may be produced using computer graphics with laser printing or drawn with black ink supplemented with scale, if required. Explanation of symbols used should be cited in the caption of the figure.

- Explanation of symbols used should be cited in the caption of the figure. The line diagram should be supplemented with scale, if required.

5.4.4 Photographs

- These should be effective with high contrast and trimmed to essential details.
- Print photographs on a relatively hard glazed paper and cover it with a wax paper or plain butter paper sheet but not with transparent polythene sheet.
- Coloured Xerox may be used for coloured photographs in the prescribed page size to avoid the use of hard sheet. However, it must be considered that in due course of time ink of photocopy is vanished early as compared to printed photographs.
- Complete detail and number (Separate series of photographs as Plate no. by Arabic numeral as per appearance in the manuscript) of the photograph should be given just below it.
- The text must not be printed on the back side of the page containing only photograph.
- The text may not be printed on the back side of the page on which photograph appears as per requirement.
- Provide magnification with photographs as per requirement.
- Size of the photographs shall be half or one fourth size of the paper as per requirement.

5.4.5 General

- The arrangement of the tables, graphs, figures, line diagrams, photographs etc. should proceed from left to right.
- Contents of similar nature should be arranged together at one place. Repetition of data in 2-3 forms should be avoided.
- The tables, diagrams, graphs, line diagrams etc. are arranged in logical order and numbered in separate series *i.e.*, series of tables, series of figures etc. by Arabic numeral. Avoid short form of table, figure etc.
- Describe important features of each and every table, related figures, graphs etc. in a logical and systematic manner.
- The number of the table, figure etc. referred should be cited at the place of presentation in the text with title case *i.e.*, Table or Figure etc.
- Tables, graphs, figures, line diagrams, photographs etc. are incorporated as near as possible to the presentation of the

same. Present the results break up into logical segments by using subheadings and key.

- Presentation of the results should be in **past tense** but the remarks should always be written in **present tense**.
- Emphasize results and findings according to the level of their importance.
- Avoid presentation of non-significant or unimportant results.
- Number from one to nine should be spelt out (nine varieties, six treatments etc.) except when occurring in a series of numbers or in conjunction with a specific recognized unit of measurement (8mm, 5g m⁻²).
- Avoid start of a sentence with a number.
- Never designate treatment as T1, T2 etc, during description of the result in the text.
- Ensure that all figures, tables have suitable numbers consistently followed throughout the thesis document.
- Appropriate title shall be provided to each table and typed on the top of the table.
- Appropriate Caption has to be given to each figure and typed below the figure.
- Table, figure and plates shall be cited in the text in proper and suitable manner *i.e.*, on the page, before or after the page. It should be reported by number, not as figure above or below.
- Mention source of data below the Tables/Figures, if any.
- Figures should be made as self-explanatory as possible.

5.5 Discussion

This chapter depicts findings of experiment(s) comparing, collating and correlating findings cited in the review. It draws out main achievements and explains results, makes links between objectives and findings, formulates suggestions and recommendations.

The result shall be explained and interpreted to justify the statement made in the lead sentences. It shall be in terms of background laid out in the introduction to show the relationship of the present results to the original question and probable reason(s) of variations. The necessary comparisons of results with results reported by other workers as presented in the chapter review of literature with the statement of agreement or disagreement has to be presented. A proper explanation for disagreement should be written with sound scientific base and

care. Controversial issues should be discussed fairly and carefully. It is the most critical part of the thesis, therefore shall be written carefully.

The findings should never be hypothetical or irrelevant. It should be discussed in the theoretical background, literature reviewed, potential significance of application and result of the study in the light of the objectives set out or assumptions made at the start of the experiment and rejection or non rejection of the hypothesis given in the introduction.

In the chapter the datum (a) is referred but tables are not repeated. The data are explained on scientific ground and interpreted for drawing appropriate conclusions.

Discussion can be made both in **past and present tense** as per requirement.

5.6 Summary, conclusions and suggestions for further work

Summarize each chapter *i.e.*, Introduction, Materials and Methods, Results and Discussion. Make strong and imperative statement from observations. All the three parts should be presented as sub heads.

5.6.1 Summary

It is a presentation of the whole manuscript in a condensed form involving following points

- A short statement of the problem.
- The significant aspects of the investigation *i.e.*, importance and objectives.
- A brief account of the method and procedure used in collecting data or making observations with the description of the important material used.
- Important findings in relation to each objective.
- It should be informative and complete in itself.
- References, tables, figures are not referred in the summary.
- It should be written in the past tense and never in third person.

5.6.2 Conclusions

After summary, the conclusions of the investigation are enumerated precisely with short, simple, complete and self-explanatory statement.

The conclusions may be drawn out of the Discussion section. It should be based on the experimental data and should correspond to objectives set forth. No objective should go without conclusion.

Two to three recommendations shall be made on the basis of findings for practical use.

It should be written in the **past tense**.

It should leave the evaluator/reader with the impression of completeness and of positive gain.

5.6.3 Suggestions for further work

Concrete suggestions for further research are enumerated based on the importance of the problem, method and material to be used and objectives to be achieved.

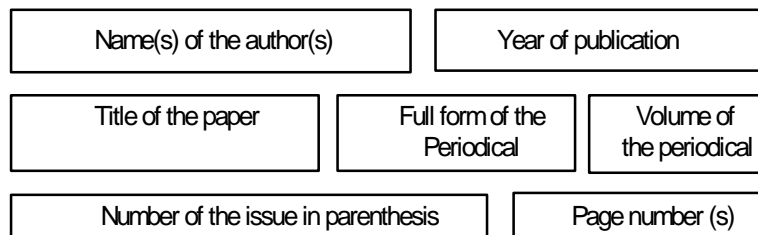
The author must list the unanswered questions that have occurred in the course of the study and which require further research beyond the limits of the present thesis.

5.7 References

This section constitutes the last section of a thesis and includes references cited in the text. It gives an alphabetical listing of the references actually cited in the body of the thesis.

5.7.1 Format and style of reference citation

The prescribed sequence for reference in the thesis is



Font size 11; Font Arial; line space single; gap after each reference 6, first line hanging 1 inch.

For an ideal reference, write the surname of the author, leave one space, write the initials without full stop, and again space, put a comma again, surname of the other author, space, the

initials (without stop), put year of publication with full stop and no parenthesis. Title of the paper (with stop), Full name of the journal (no stop) no italicize volume of the journal (no bold) and number of issue in parenthesis and page number (with stop).

5.7.2 Important considerations

- All references cited in the text must be included in the chapter References.
- Make sure that spelling of the author's name and dates (year of publication) are correct and tally both in text and Bibliography (References).
- Arrange all the references in alphabetical order.
- Several references cited together in the text should be arranged chronologically.
- Publication by the same author(s) in the same year should be listed as 2013a, 2013b etc.

5.7.3 System to arrange references

5.7.3.1 Citation of references from journals

Harman GE. 2006. Overview of mechanisms and uses of *Trichoderma* spp. *Phytopathology* 96(2): 190-194.

Dewey DK and Lu KH. 1959. A correlation and path coefficient analysis of components of crested wheat grass and seed production. *Agronomy Journal* 47(3): 314-318.

Ahire RK, Kale AA, Munjal SV and Jandagni BM. 2005. Induced water stress influencing proline accumulation, proteins profiles and DNA polymorphism in chickpea. *Indian Journal of Plant Physiology* 10:218-224.

5.7.3.2 Citation of book

Allard RW. 1960. *Principles of Plant Breeding*. Publ. John Willey and Sons. Inc. NY. 485 p.

(485 p indicates the total number of pages in the book and whole book is referred).

Allard RW. 1960. *Principles of Plant Breeding*. Publ. John Willey and Sons. Inc. NY. p 276.

(p276 indicates that the citation is from the page number 276).

Allard RW. 1960. Principles of Plant Breeding Publ. John Willey and Sons. Inc. NY. pp 263-281.

(pp 263-281 indicates the citation is from the pages between 263-281).

Khare D and Bhale MS. 2014. Seed Technology. Scientific Publishers, Jodhpur Rajasthan. 994p.

5.7.3.2 Citation for edited Book

Bhale MS and Gour A (Eds). 2012. Seedborne Disease of Field Crops and their Management (India). (Prof. MN Khare festschrift volume) Agrobios (India), Jodhpur, Rajasthan. 445 p.

5.7.3.3 Citation for a chapter from edited book, proceedings etc.

Tomar VS and Rajput GS. 2009. Management options for improving water productivity in agriculture pp. 433-442. *In: Sustainable Agriculture for Food, Bio-energy and Livelihood Security*, (Eds Behl RK, Singh DP, Tomar VS, Bhale MS, Khare D and Upadhyaya SD). Agrobios (International), Jodhpur, Rajasthan. 433-442.

5.7.3.4 Online citation including URL or DOI

FAO. 2004. FAO Statistical data, <http://faostat.fao.org/>

FAO. 2014. FAOSTAT database. <http://apps.fao.org>

Lawson W and Goutter K. 2005. CRC for Tropical Plant Pathology, Australia URL: <http://www.lpp.up.edu.au/>

5.7.3.5 Citation for Abstracts, Thesis or Dissertations

Kumar S. 1999. Stability analysis in Linseed. Ph.D. Thesis, JNKVV, Jabalpur. 196p.

5.7.3.6 Citation for Website

EPPO. Datasheets on Quarantine Pests: *Stenocarpella macrospora* and *Stenocarpella maydis*. http://www.eppo.org/Quarantine/fungi/Stenocarpellama_crospora/DIPDSP.ds.pdf.

People and plants on line <http://rbgkew.org.uk/peopleplants>.

5.7.3.7 Report

JNKVV. 2015. Research Highlights 2015. Publ., JNKVV, Jabalpur. 42p.

5.7.3.8 Annual Report

JNKVV. 2017. Annual Report (2016-2017). JN Krishi Vishwa Vidyalaya, Jabalpur . 137p.

5.7.3.9 Newsletter

Khare D and CB Singh. 1991. Genetic behavior of yield and quality traits of *Vicia faba* L. FABIS 28&29:3-8.

5.7.3.10 Government publications

Anonymous. 1985. Seventh Five Year Plan 1985-90. Planning Commission GOI, New Delhi.

5.7.3.11 Reference of other language

The reference in other language may be changed into English version with the help of converter

Cramer PJS. (1907). *Kritische Übersicht der bekannten Fälle von Knospvariation. Naturkundige Verhandelingen der Hollandische Maatschappij van Wetenschappen, Haarlem* 6(3): 474.

Cramer PJS. (1907). Critical overview of the known cases of bud variation. *Nature Verh. Holl. Mij Wet., Haarlem* 6(3): 474.

5.8 Appendices

It is not an essential part of the thesis but it is a useful device to make available information/material related to text but not suitable for discussion or inclusion in the text.

Example- Meteorological data

Details of the material used

Questionnaires

Interview schedule

Details of the place where experiment was conducted

In case of more than one appendix it should be properly mentioned.

Each and every appendix should have self-explanatory complete title.

5.9 Research Paper

Photocopy of two research papers published (at least one published and one with proof of acceptance) for the research work of Ph.D. degree programme are attached as Appendix. The certificate on publication of research papers from Ph.D. thesis work should be attached (Proforma 14).

5.10 Curriculum Vitae

Curriculum Vitae should be the last item in the list of appendices (thus it is the last section of the manuscript).

Curriculum Vitae (not VITA) is a brief summary of the student's academic background. It is not an autobiography or a resume. It does not include contact information and is not intended as a tool for seeking employment. It should list relevant activities up to the time of their degree completion. It includes the following information(s):

Name of the author
Place and date of birth
Permanent address
Cell number
E-mail

Photo



List all institutions attended (not departments) in reverse chronological order (most recent first).

List degrees (graduate and postgraduate) in reverse chronological order (most recent first), including the degree (major can be indicated) sought with this thesis.

Include year and name of the granting institution. List special interests and studies.

List relevant professional experience, company or institution, location and dates.

If applicable, list grants, awards and honours, indicating the grantor (agency or institution funding the grant, award or honour), the title of the project (in italics) and the date s typed separately by adopting the typing Instruction of thesis.

6 Abstract

Abstract is not a part of bound thesis. Four copies of the Abstract should be submitted with the thesis. An abstract consists of two parts.

6.1 Part 1

Contains information of student and thesis with signature of student, Chairman of Advisory Committee and Professor and Head of the Department (Proforma 7).

6.2 Part 2

It is a condensed form of the thesis in one page (700-1000 words) that summarizes the contents and conclusion including recommendations of the thesis and indicates the relevance of the work.

The content highlights the objectives and topic covered, methodology adopted and significant findings that draw the conclusion. It should be complete in itself without referring any reference, table, figure or other findings.

Abstract is written in **past tense**.

7 Proof reading

The author (student) and advisor(s) for technical and factual errors are advised to scan hand written manuscript pre-print proof. They must make corrections and suggestions on the body of the text. Suggestions and corrections should be conveyed with the help of normally accepted marks made on the body of the text (Appendix 11).

It will help the typist to incorporate the suggestions/corrections at correct place and manner.

8 Submission of loose bound thesis

Preliminary requirements: The thesis is submitted only after the completion of course credit as per the University Rules. The course completion certificate along with other details is to be submitted by the Head of the Department/ section 15 days before submission of the thesis to the Director of Instruction.

The student has to submit two copies of thesis for Masters and three copies for Doctorate degree (it may be increased as per requirement) with **loose binding** in the Department along with four (Masters)/five (Doctorate) copies of the abstract before the last date of thesis submission as notified in the academic calendar.

The advisor and advisory committee sign the **Certificate I** of each copy of the thesis before submission and satisfy for correctness and proper presentation. Final bound copies of the thesis are **not accepted** before evaluation and oral examination.

9 Certificate on anti-plagiarism

All the Ph.D. degree has to check for plagiarism before submission of thesis for evaluation. The soft copy of the thesis has to be submitted with application (Proforma 21) to the librarian, JNKVV, Jabalpur. The thesis will be tested by the prescribed software. The certificate generated by the software has to be attached as Proforma 15 with the loose bound thesis. In the event the percentage of plagiarism is more than the prescribed limit then the thesis has to resubmit for testing of plagiarism after improvement. (*Applicable after notification*).

10. Checklist of documents required at the time of thesis submission before *viva-voce*

SNo	Document	Copies/Proforma
1	Thesis	2 copies for Master 3 copies of Ph.D. <i>(remaining copies should be prepared after incorporation of the suggestions suggested by the evaluator)</i>
2	Declaration and undertaking by the student	- Proforma 5
3	Copyright transfer certificate	- Proforma 6
4	Abstract of the thesis	4 - Proforma 7
5	Information of student	2 - Proforma 8
6	No dues certificate	1 - Proforma 9
7	Certificate on conductance of result seminar	1 - Proforma 10
8	Certificate on thesis preparation as per the prescribed manual	1 - Proforma 11
9	Certificate on successfully completion of comprehensive examination (written for Master and written and oral both for Doctorate)	2 - Proforma 12

SNo	Document	Copies/Proforma
10	Undertaking for non joining of job during the residential requirement	1 - Proforma 13
11	Certificate on Publication of Research Paper from Ph.D. Thesis work	1 - Proforma 14
12	Anti-Plagiarism Test Certificate (Ph.D. Thesis only)	1 - Proforma 15

11. Evaluation of thesis

An external examiner evaluates the thesis of Masters and two of Doctorate degree. An ideal proforma for Thesis evaluation report for M.Sc. and Ph.D. is presented in Appendix 12. The candidates and advisors must pay attention on the targeted and focused points, while preparation of the Manuscript.

Student should incorporate all the suggestions and corrections suggested by the examiner in the thesis with utmost care. Advisor has to verify the modifications.

Correction in the thesis must be made by computer. In case there are more than two typographical corrections in one page then the page should be replaced.

12 Oral Examination

In the final thesis *viva voce* the student shall defend research work with the help of power point presentation followed by queries and discussion. Master degree oral examination will be conducted by the Advisory committee.

Audio video visual recording: As per Letter No. 203/ RS/UA/-3/2018 dated February 19, 2018 of the Office of the Hon'ble Governor, Madhya Pradesh, audio-video visual recording of oral comprehensive and final thesis *viva voce* examination conducted by the external examiner in Ph.D. degree will start from the session 2018-2019 to bring transparency, discipline and confidence in the society. Apart from external examiner and member of the advisory committee, all the staff members and Ph.D. scholars of the Department have to be participate. Professor of other Departments may also participate. After completion of examination by the external examiner the discussion will be open for all.

Complete quality video and audio recording are essential of both the oral examinations at Doctorate level. The recording of both the oral examination shall be submitted to the Office of the Director Instruction for preservation.

After successful conduction of the oral examination all the corrections and suggestions, all the members of the Advisory committee should sign on the **Certificate II** of the thesis for Master degree and signature of the external examiner too, for Doctorate degree.

13 Submission of hard bound thesis

These copies are bounded finally as hardbound with prescribed colour of the cover page.

14 Checklist of documents required at the time of thesis submission after *viva-voce*

Four copies of Masters Degree and five copies of Doctorate degree thesis are to be submitted to the Director Instruction, JNKVV, Jabalpur through proper channel for official notification with following information

Sr.	Document	Copies
1	Thesis	4 copies for Master 5 copies for Doctorate (for signature of Director Instruction)
	Thesis corrections certificate as suggested by the examiner	Proforma 16
3	Soft copy of the thesis after correction in CD as PDF	Proforma 17
4	Certificate of oral examination	Proforma 18
5	Semester wise student record	
6	CCVC	
7	Postgraduate course completion verification certificate	Proforma 19
8	Application for issue of Degree certificate	Proforma 20

15 Soft copy of the thesis

With reference to letter F. No. 30(6-C)/2006 NAIP/ O&M dated 12 May 2011 of Deputy Director General (Education), ICAR, New Delhi, all the postgraduate students must submit the true replica of printed thesis, *i.e.*, the same sequence of pages, images, tables and paginations, after incorporation of suggestions and corrections made by the external examiner as soft copy (in CD or DVD) (Proforma 16A) as single file in Portable Document Format (PDF) along with Certificate from In-charge Academic of the Department (Proforma 16B). The PDF file should not be password protected.

16. Publication of work and authorship

The publication of material extracted (partially or fully) from the thesis work should essentially indicate the credit to the University (under Acknowledgement section).

The authorship on research paper submitted for publication from the thesis should be in order of

- (i) First name - Student
- (ii) Second name - Major Advisor
- (iii) Third name (optional) - Member(s) of the advisory committee significantly contributed in the thesis work.

Proforma 1

Molecular Characterization of Soybean Varieties

THESIS

Submitted to

**Jawaharlal Nehru Krishi Vishwa Vidyalaya
Jabalpur**

**In partial fulfilment of the requirements for
the Degree of**

MASTER OF SCIENCE

In

**AGRICULTURE
(Genetics and Plant Breeding)**

**Anchal Bisen
170216001**

**Department of Plant Breeding and Genetics
College of Agriculture, Rewa**

**Jawaharlal Nehru Krishi Vishwa Vidyalaya
Jabalpur 482 004 (MP)**

2017

CERTIFICATE - I

This is to certify that the thesis entitled “.....”
”
 submitted in partial fulfilment of the requirement for the degree
 of **MASTER OF SCIENCE (Ag)/(Forestry)/ Agri. Business
 Management / MASTER OF TECHNOLOGY / DOCTOR OF
 PHILOSOPHY*** In (subject* *) of Jawaharlal
 Nehru Krishi Vishwa Vidyalaya, Jabalpur is a record of the bonafide
 research work carried out by Mr./Mrs./Ms..***
 under my guidance and supervision. The subject of the thesis has
 been approved by the Student’s Advisory Committee and the
 Director of Instruction.

All the assistance and help received during the course of the
 investigation has been acknowledged by him /her.

Place: Signature
 Date:

**(Complete Name)
 Chairman of the Advisory Committee**

Thesis Approved by the Student’s Advisory Committee

Committee	Name	Signature
Chairman/ Chairperson
Member
Member
Member

* Master of Science/ Master of Technology/ Doctor of Philosophy
 (whichever is applicable) Master of Science in Agriculture/ Forestry/
 Agri. Business Management
 * Doctor of Philosophy in Agriculture/Agricultural Engineering with
 name of specific subject
 *** Name of the Student

CERTIFICATE - II#

This is to certify that the thesis entitled “.....”
”
 submitted by Mr. / Mrs. / Ms . *
 to Jawaharlal Nehru Krishi Vishwa Vidyalaya , Jabalpur in partial
 fulfilment of the requirements for the degree of **Master of
 Science/Technology /Agri. Business Management** in.....**
 in the Department***
 has been, after evaluation, approved by the External Examiner
 and by the Student’ s Advisory Committee after an oral
 examination on the same.

Place : Signature
 Date: (Complete Name)
Chairman of the Advisory Committee

Members of the Advisory Committee

Committee	Name	Signature
Chairman/Chairperson
Member
Member
Member
Head of the Department/ Section (Name)		
Director Instruction (Name).....		

- # Certificate for Masters Degree
- * Name of the Student
- ** Master of Science in Agriculture/Forestry/Master of Technology/
 Agri. Business Management with name of specific subject
- *** Name of the Department

Proforma 4

CERTIFICATE - II#

This is to certify that the thesis entitled “.....
.....”
submitted by Mr./Mrs./Ms.
to Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur in partial
fulfilment of the requirements for the degree of Ph.D. in the
subject** of the Department
.....*** has been,
after evaluation, approved by the External Examiners and by
the Student’s Advisory Committee after an oral examination on the
same.

Name:..... Designation:.....
Address:.....

Place :
Date:

Signature
External Examiner

Committee	Name	Signature
Chairman/Chairperson
Member
Member
Member
Head of the Department/ Section (Name)		
Director of Instruction (Name).....		

- # Certificate for Doctorate Degree
- * Name of the Student
- ** Subject (as per notified list document)
- *** Department (as per notified list document)

Proforma 5

Declaration and Undertaking by the Candidate

I(name) S/o (D/o)(W/o)
Shri (Name) Certify that the work
embodied in thesis entitled ".....
.....
..... is my own first hand bonafide work carried out
by me under the guidance of (name of
advisor) at..... (name of Department),
.....(name of College and
place) during..... (period year).

The matter embodied in the thesis has not been submitted for the award
of any other degree / diploma. Due credit has been made to all the
assistance and help.

I, undertake the complete responsibility that any act of
misinterpretation, mistakes, errors of fact are entirely of my own.

I, also abide myself with the decision taken by my advisor for the
publication of material extracted from the thesis work and subsequent
improvement, on mutually beneficial basis, provided the due credit is
given, thereof and will not include any unauthorized name in research
publications.

Place:
Date:

**Complete Name and Signature
of the candidate**

Proforma 6

**Copyright © and IPR Rights
Jawaharlal Nehru Krishi Vishwa Vidyalaya
Jabalpur Madhya Pradesh
.....(Year)**

Copyright and IPR Rights Transfer Certificate

Title of the Thesis.....
.....
.....
Name of the candidate.....
Subject.....
Department.....
College
Year of Thesis submission.....

Copyright and IPR Rights Transfer

The undersigned..... (name of the candidate) assigns to the Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh, all rights under Copyright and IPR right Act that may exist in and for the thesis entitled "
.....
....."

submitted for the award of M.Sc. (Ag.)/M.Tech./Ph.D. degree.

Date :

Place:

**Major Advisor
Signature & Name**

**Signature of the candidate
(Full Name)**

Notice: *The author (candidate) may reproduce or authorize others to reproduce material extracted verbatim from the thesis or derivative of the thesis for author's personal and noncommercial use, provided that the source and University copyright notices are indicated.*

Abstract

Part 1 Front page of the abstract

It contains following information

- 1 Title of the thesis
(*Bold; sentence case; 14 Arial, single space*)
- 2 Student
Name (Full)
Postal Address (Permanent) E-mail and contact number
- 3 Advisor
Name
Address (Office)
E-mail and contact number
- 4 Degree awarded
- 5 Year of award of degree
- 6 Major subject
- 7 Total number of pages in the thesis
- 8 Number of words in the abstract

Signature
(Name of the Chairman
Advisory Committee)

Signature
Professor and Head/
Section

Signature
(Name of the student)
(Seal)

Part II Abstract

The abstract of the thesis should be structured precisely containing the title, objective of research, results and future line of work limited to single page, failing which the thesis will not be forwarded to the University for issuing PDC.

Proforma 8

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur

To be filled in by the Student (Final Year only)

Note: The following particulars must be filled in very carefully. The entries in the final transcript and degree would be made based on these entries.

1. Name in full (in English) with correct: Mr./Mrs./Miss.....
Spelling as entered in the certificate
Issued by the Board/University last
attended
2. Name in full (in Hindi) :
3. (a) Father' name in full :
(b) Guardians name in full :
4. Place of Birth :
5. Date of Birth : / /
6. Date of joining the college (JNKVV) : / / Agriculture/Agri. Engg.
7. Name of the last school and :
College attended
8. Permanent address : Mr./Miss
Village Post
Tehsil Dist
9. ID No. :
10. Other information e-mail & mobile no.:.....

(Signature of the candidate)

**Professor & Head
Department / Section**

**To be filled in by the Office of the Dean, College of
Agriculture, JNKVV, Jabalpur (MP)**

Certified that the entries made above by the candidate Mr./Mrs. Miss
.....have been verified from the
record and found correct.

Dean, College of Agriculture,(MP)

Proforma 9

No dues certificate

Name of the student..... Category.....
I.D. No..... Course of study M.Sc.(Ag)/ M.Tech./ M.Sc.
(Forestry)/MBA/Ph.D.
Department of.....
College.....
Admission as..... Payment seat/ free seat
Date of discontinuance of study.....
Whether residing in the hostel: Yes/ No
Certified that the student has completed the residential requirement upto
.....(date)

Chairman of Advisory Committee

I/C Academic (Department)

Signature and seal for no dues by the authorized person

Librarian.....
Physical education.....
Hostel warden.....
NCC.....
NSS.....
In-charge scholarship.....
Sectional library.....

No dues of the registered courses duly signed by the concerned teacher

Major courses	Minor courses
1.	1.
2.	2.
3.	3.
4.	Supporting courses
5.	1
6.	2
7.	3

Chairman of Advisory Committee.....
Departmental store.....
Accountant (College).....
I/c Academic.....

**Head of the Department/Section
Signature and seal**

Signature of the student

Proforma 10

Certificate on conductance of result seminar

This is to certify that the result seminar of Mr./ Miss.....has been conducted on(date) and found satisfactory.

Date:

Signature and seal
Professor and Head/Section
Department
College

**Certificate on successfully completion of
comprehensive examination**

Written Comprehensive Examination

This is to certify that Mr./Miss.....
a M.Sc. / M.Tech. / Ph.D. student of the Department of.....
..... has appeared in the **comprehensive written
examination** on (date) and passed it with satisfactory
performance.

Oral Comprehensive Examination

This is to certify that Mr./Miss..... a
Ph.D. student of the Department of has
appeared in the **comprehensive oral examination** on
..... (date) and defended it with successful performance.

Date:

Signature and seal
Professor and Head/Section
Department
College

Proforma 12

Certificate on thesis preparation as per the prescribed manual

This is to certify that Mr./Miss..... has prepared the thesis entitled.....

.....
as per the specification given in the 'Guidelines on Preparation of Thesis' prescribed by the University.

Signature and seal of Chairman of Advisory Committee

Name
Designation
Department
College

**Undertaking for not joining of job during
minimum residential requirement**

Department.....

College.....

JN Krishi Vishwa Vidyalaya, Jabalpur

Undertaking

I, the student of M.Sc. (Ag)/
M.Tech./M.Sc.(Forestry)/MBA/Ph.D. Department of
College of declare in compliance of the
University Academic Rules, I have not joined any job during the minimum
prescribed residential requirement to complete the degree programme.

In the event of the false declaration, the University may withdraw the
degree.

Date

Signature of the student
(Full Name)

Verified

Signature and name of the Chairman of Advisory Committee

Signature and name of the Professor and Head/Section

Dean of the College

Certificate

Publication of Research Paper from Ph.D. Thesis

This is to certify that Mr./ Miss
Ph.D. scholar of the Department of.....
..... (submitted the thesis
entitled
.....
on.....(date) has published following two research
papers (at least one published and one accepted with proof of
acceptance) from the research work conducted for Ph.D. thesis.

1.
.....
.....

2.
.....
.....

Both the papers (it may be one paper and one typed manuscript with
proof of acceptance) are attached with the thesis as appendix at the end.

Date
Chairman of the Advisory Committee
Name
Designation
Department
College

Signature and Seal
Professor & Head/
Head of the Section

*Application form for submission of thesis for
Anti-Plagiarism Test Certificate*
(Applicable after notification)

Department of
College of

No. _____ Date:

To
The Librarian
Central Library
JNKVV, Jabalpur

Subject: Submission of thesis for Anti-Plagiarism Test Certificate

Name of the Scholar:
Enrollment Number:
Department:
Thesis Title:
.....
.....

Name & Signature of Supervisor:

Signature and Seal of Head of Department:

Signature and seal of the Dean:

Proforma 16

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur
Central Library
Anti-Plagiarism Test Certificate
(Tentative)

Thesis:

Name of the author:

Enrollment number :

Department:

College:

Name of the Advisor:

Date of received for check:

Chapter wise plagiarism report

Chapter	Percent of plagiarism		Remark
	Maximum permitted	Reported	
Introduction			
Review of Literature			
Material and Methods			
Result			
Discussion			
Summary, Conclusion and Suggestions for further work			
Average			

I hereby certify that the thesis has been evaluated using Plagiarism Check Software _____ on _____ (date). The system reported that the thesis has average _____ percent of plagiarism which is within the approved / more than limit and it is passed /failed with

A <15%

B 16-25%

C 26-40%

D >40% *Thesis has percent of plagiarism more than prescribed limit, therefore resubmit for test.*

Date

Signature and seal of the In-charge

Certificate of Oral Examination

Department of
College of
JNKVV, Jabalpur

This is to certify that the thesis entitled.....
.....
..... submitted by Mr./ Missto
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur in partial fulfillment
of requirements for the degree of M.Sc.(Ag.)/ M.Tech./MBA/Ph.D.
.....subject) in the Department of
College of..... has been approved by the
external examiner after evaluation and by the Student's Advisory
Committee after an oral examination.

Place:.....
Date:.....

Chairman Advisory Committee

Members of the Advisory Committee	Signature
1. Chairman/ Chairperson	
2. Member.....	
3. Member.....	
4. Member.....	

Head of the Department /Section

Director Instruction.....

**Certificate of Incorporation of Suggestions/Corrections
Proposed by the Examiner**

This is to certify that all the suggestions and corrections proposed by the external examiner have been incorporated in the final thesis entitled

.....
.....
.....

Subject.....
Department.....
College.....
Submitted by
during the year.....

**Signature and seal of
Chairman of Advisory Committee**

Name.....
Department.....
College.....

Proforma 19A

Certificate

This is to certify that soft copy (CD or DVD format) of the thesis entitled
.....
.....
Submitted by Mr./Miss/Mrs.....
Subject.....
Department of.....
College of.....
in the academic year..... consists of pages.

It is the exact replica of the final hard copy as single Portable Document Format (PDF) after incorporation of suggestions and corrections made by the external examiner and is not password protected.

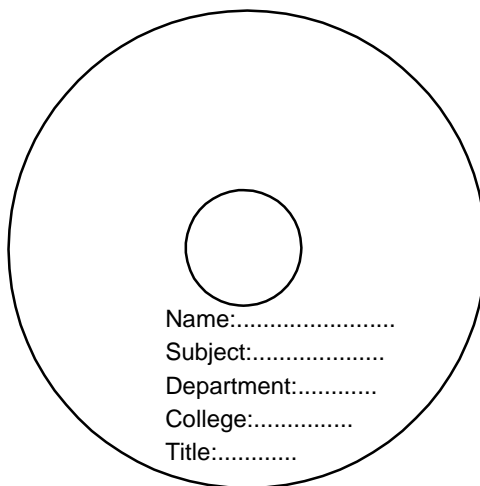
Signature and seal of

Academic In-charge

Name.....
Department.....
College.....

Proforma 19B

Corrected soft copy of the thesis in CD as PDF file



Proforma 20

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (MP)

Department of

College of

Semester wise Report Card for Postgraduate Course

(To be prepared by In-charge Academic of the respective Department)

Semester Session.....

Full Name..... I.D. No.....

Programme..... College.....

Title of course	Course No.	Credit Hrs.	Marks obtained			Remarks
			Theory out of 100	Practical out of 50	Total	
Repeat Course						

Total marks obtained.....(in words).....

Out of.....Result.....

CCGA at the end of..... degree programme is..... out of 10.00.

Name of Advisor.....

Prepared by..... Checked by.....

Date.....

Signature of Dean of the College

- Note:**
- (a) The circle around the marks denotes failure
 - (b) If a student fails to obtain 60% marks in any course either theory or practical he/she be deemed to have failed in the theory paper or practical and will be required to repeat theory or practical, as the case may be to clear/pass the same.
 - (c) Postgraduate degree is not awarded to the student with less than 65% marks

**Postgraduate Course Completion Verification Certificate
under 10 Point Scale**

1. Name of the student (in English) : Mr./Miss
2. ID No. of the student :
3. Subject of major study :

4. OGPA at the end of course Completion:Out of 10.00 scale
with credits completed
 - a) Credits of major courses :
 - (b) Credits of minor courses :
 - (c) Credits of thesis :
 - (d) Total credits of (a), (b) & (c) :

5. Ratio of credits load of major and Minor:
subjects
6. Semester of the session in which :
thesis accepted
7. Number of semester in which :
candidate completed the study
programme
8. Title of the thesis:
.....
.....

9. Whether paid all dues of the Colleges: Yes

The candidate has completed all the requirements viz. courses and written and oral comprehensive examinations of postgraduate programme for which he/she has registered and is eligible for the degree of M.Sc. (Ag.) M.Sc.(Forestry), M.Tech. / MBA / Ph.D. (subject). No dues are outstanding against him/her.

Professor & Head/Section

Dean of the College

Forwarded to the Registrar, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur for further action.

Director Instruction

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur

Application Form for Issue of Degree Certificate

(To be submitted in the College after completion of degree programme)

To,

The Registrar,
J.N, Krishi Vishwa Vidyalaya, Jabalpur (M.P.)

I,.....(Full name) son/daughter/wife of Shri
(full name) I.D.No.was a student of this Vishwa Vidyalaya from the
year..... to and passed the M.Sc.(Ag), M.Sc.(Forestry),
M.Tech./MBA/Ph.D. degree programme in the yearwith
OGPA out of 10.00 scale from the College of Agriculture,
...../Agricultural Engineering, Jabalpur.

Degree of M.Sc.(Ag.), M.Sc.(Forestry), M.Tech./ MBA/ Ph.D. (subject) has
been conferred upon me in the year and I wish to get the above degree
in absentia/in person. Hence my above degree may please be given to me in
person or by post on the address given below.

Prescribed fees of Rupees Three Hundred and Fifty only (Rs. 350/-) for obtaining
the degree has been deposited along with admission fees at the time of
admission to aforesaid degree programme.

I request that the degree of M.Sc.(Ag.)/ Ph.D. may please be made available to
me.

Dated:

Yours faithfully,

Name & Signature of Applicant

Postal address for the purpose of correspondence.....
.....

(To be Filled in by the Office of the Dean)

Certified that Shri/Ku./Smt.....son/ daughter/wife of
ShriI.D. No. has deposited Rs. 350/-
(Rupees Three hundred and Fifty only) at the time of admission in
..... year for obtaining the degree.

Date:

Signature & Seal of the Dean of the College

APPENDICES

Appendix 1

Typing instructions for preparation of manuscript

Page Size	A4 (8.268" X 11.693")
Thickness of paper	At least 85 GSM
Print on the page	Both side Certificate, Photographs and other as per requirement may be printed on one side
Margin	Top and Bottom 1" Right and Left 1.5"
Font	Arial
Font Size	12
Line spacing	1.5
Left indent	1"
Alignment	Justified
Spacing between paragraphs	Before 6 Point; After 0 point
Main Title	14 Bold Case Capital; Alignment centre
Sub Title	12 Bold Case sentence; Alignment left
Page Number	Bottom; Placement Centre
Number of Copies	Four for Masters and Five for Ph.D. (It may increase in case a copy has to be submitted to the agency providing financial assistance)
Spell check	British English grammar
Division sheet	Every chapter of the text and reference matter should be preceded by a division sheet marked with the title of the chapter in Arial, capital, bold font of 18 size with right alignment at the top of the paper without pagination.
Start of the chapter	Each chapter shall start from a new page with title in capital, bold Arial, Font 14 with center alignment. Leave 12 point spacing after title before start of the next.

Appendix 2

Molecular Characterization of Soybean Varieties

20-26 title case bold

THESIS

16 capital case bold

Submitted to

14 italic case normal

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur

16 title case bold

In partial fulfilment of the requirements for the Degree of

14 sentence case bold

MASTER OF SCIENCE

16 capital case bold

In

14 italic case normal

AGRICULTURE

16 capital case bold

(GENETICS AND PLANT BREEDING)

14 capital case bold

14 italic case normal

ANCHAL BISEN

16 capital case bold

(Enrollment Number)

14 sentence case normal

Department of Plant Breeding and Genetics

College of Agriculture, Rewa

Jawaharlal Nehru Krishi Vishwa Vidyalaya

Jabalpur, 482 004 (MP)

14 sentence case bold

2017

14 Bold Grey Colour

Appendix 3

Notified names of Departments and subject of the degree thereof

As per notification No. Acd/II Q-14(IV)/887 dated 12.6.2017 the nomenclature of the subjects for award of Master and Ph.D. degree by different Departments has been changed and adopted by the University w.e.f. the academic session 2016-2017. It is in accordance to the recommendation made by V Deans Committee of ICAR. Details of degrees are as under:

S.No. Name of Department	Revised nomenclature of degrees Master/Ph.D.
Faculty of Agriculture	
1 Agricultural Economics and Farm Management	M.Sc. Ag. / Ph.D. (Agricultural Economics)
2 Extension Education	M.B.A. (Agri. Business Management)
	M.Sc. Ag. /Ph.D. (Agricultural Extension and Communication)
3. Agronomy	M.Sc. Ag. /Ph.D. (Agronomy)
4 Entomology	M.Sc. Ag. /Ph.D. (Entomology)
5 Plant Breeding and Genetics	M.Sc. Ag. / Ph.D. (Genetics and Plant Breeding)
6 Plant Pathology	M.Sc. Ag. /Ph.D. (Plant Pathology)
7 Plant Physiology	M.Sc. Ag. /Ph.D. (Plant Physiology)
8 Soil Science & Agricultural Chemistry	M.Sc. Ag. /Ph.D.(Soil Science and Agricultural Chemistry)
9 Horticulture	M.Sc. Ag. / Ph.D. Horticulture (Vegetable Science)
	M.Sc. Ag. / Ph.D. Horticulture (Fruit Sci.)
10. Agricultural Statistics	M.Sc. Ag. (Agricultural Statistics)
11 Agricultural Biotechnology	M.Sc. Ag. (Plant Biotechnology)
12. Food Science & Technology	M.Sc. (Food Science and Technology)
13. Forestry	M.Sc.(Forestry) / Ph.D.(Agroforestry)
Faculty of Agricultural Engineering	
1. Farm Machinery & Power	M.Tech./Ph.D.(Agril. Engg.) Farm Machinery & Power Engineering
2. Soil & Water Engineering	M.Tech./Ph.D. (Agril. Engg.) Soil & Water Engineering
3. Post Harvest Process & Food Engineering	M.Tech./Ph.D. (Agril. Engg.) Processing & Food Engineering

Appendix 4

Symbols of botany

Term	Symbol	Term	Symbol
Actinomorphic	⊗	Epicalyx	Epik
Androecium	A	Female	
At the rate of	@	Gynoecium	G
Bisexual		Male	
Bracteate	Br	Parianth	P
Calyx	K	Zygomorphic in lateral plane	÷
Corolla	C	Zygomorphic in median plane	.l.

Appendix 5

Important connotations

Acid equivalent	a.e.	Fertilizer Use Efficiency	FUE
Analytical reagent	AR	Land Equivalent Ratio	LER
Artificial insemination	AI	Lethal concentration	LC
Capsulated granules	CG	Lethal dose	LD
Chemically pure	Cp	Lethal dose for 50% control	LD ₅₀
Colony forming units	c.f.u.	Linear energy transfer	LET
Dispersible powder	DP	Maximum permissible dose	MPD
Dose response curve	DR	Medial lethal dose	MLD
Effective dose	ED	Relative humidity	RH
Effective dose for 50% control	ED ₅₀	Seed dresser	SD
Electron microscope	EM	Seed treatment	ST
Emulsifiable concentration	EC	Soluble liquid	SL
Granular	G	Wetable dispersible power	WDP
Ineffective dose	ID	Wetable powder	WP

Symbols and Abbreviations

The following abbreviations shall be used both for singular and plural units

<p>A</p> <p>abbr : Abbreviation ac : Acre a.e. : Active equivalent a.i. : Active ingredient AICRP : All India Coordinated Research Project A.M. : Before noon / Anti Meridian Anon: Anonymous ANOVA : Analysis of Variance Atm : Atmosphere AWHC : Available Water Holding Capacity</p> <p>B</p> <p>B : Billion BCR : Benefit Cost Ratio (BCR) BD : Bulk Density BP : Black Plastic Mulch Bt : <i>Bacillus thuringiensis</i></p> <p>C</p> <p>C.S : Capsulated suspension C:N ratio : Carbon to Nitrogen ratio CD (P=0.05%) : Critical Difference at 5 per cent level Century (ies): cent (s) CFB : Corrugated Fibre Board Box Cft : Cubic feet cg : Centigram CGR : Crop Growth Rate Chapter: ch cl : Centilitre cm : Centimetre cm² : Square centimetre conc : Concentrated cong : Congress cont : Contents contd: Continued</p>	<p>CPM : Critical Path Model CRD : Complete Randomized Design Cry : crystal CU : Consumptive Use Cusec : Cubic feet per second cv(s) :Cultivar (s)</p> <p>D</p> <p>DAE : Days After Emergence DAF : Days After Flowering DAP : Days After Planting DAS : Days After Sowing DAT : Days After Treatment dag : Decagram dg : Decigram Diam : Diameter dkl : Dekalitre dl : Decilitre dm : Decimetre DMRT : Duncan's Multiple Range Test Dry weight g⁻¹ dSm⁻¹ : Decisiemen per metre dsm⁻² : Decisiemen per square meter</p> <p>E</p> <p>ECD : Efficiency of Conversion of Digested food ECI : Efficiency of Conversion of Ingested food ed (s): Editor(s) e.g. : for example, for instance edn : Edition ER : Effective Rainfall ET : Evapo-Transpiration et al. : and others ETC : Crop Evapo-Transpiration</p>
---	--

	etc. : and so on; and other people / things		IAA : Indole, 3 Acetic Acid
	ETL : Economic Threshold level		IBA : Indole Butyric Acid
F	F. test : Fishers Test		IPE : Irrigation Production Efficiency
	FC : Field Capacity		IPM : integrated pest management
	fig./ Fig. : Figure		IR : Irrigation Requirement
	Fr.wt : Per Gram Fresh weight	J	IU : International Unit
	FUE : Fertilizer Use Efficiency		J : Joule
G	Govt : Government		JA : Jasmonic Acid
	Gh: Growth hormones		Jr: Junior
	g : Gram	K	Kc : Crop Co-efficient
	GA : Genetic Advance		kcal : Kilo Calories
	GAM: Genetic Advance as per cent of Mean		kg : Kilogram
	gcc ¹ : glam per cubic centimetre		kg ha ⁻¹ : Kilogram per hectare
	GCV : Genotypic Co-efficient of Variation		Kgha ⁻¹ mm ¹ : Kilogram per hectare millimeter
	GI : Growth Index		kl : Kilditre
	GIR : Gross Irrigation Requirement		km : Kilometre
	GIS : Geographic Information System		km ² : Square kilometre
H	Hb: Hemoglobin		Kp : Pan Co-efficient
	H : Heritability in Broad sense		Ky : Yield Response Co-efficient
	h : Hour	L	l : Litre
	H.I. : Harvest Index		L ⁻¹ : per liter
	H1 : Alternate Hypothesis		LAD : Leaf Area Duration
	ha : Hectare		LAI : Leaf Area Index
	ha-cm : Hectare-centimetre		LLDPE : Low Linear Density Polyethylene
	ha-m : Hectare-metre		Ltd: Limited
	HDPE : High Density Poly Ethylene	M	LSD : Latin Square Design
	hl : Hectolitre		m : Metre
	Ho : Null Hypothesis		M : Million
	HP : Horse Power		m : molality
	ht : Height		M : Molarity
I	Inst: Institute		m ¹ : per meter
	iq : Intelligence quotient		m ² : Metre square
	Intl: International		m ² : per meter square
	Infin: infinitive		m ³ : Cubic metre
			m ³ h ⁻¹ : Cubic metre per hour
			Max: Maximum

mg : Milligram	PPFD : Photosynthetic Photon Flux Density
Min : Minimum	ppm : Parts per million
min : Minute	Pr : Phytochrome red
ml : Millilitre	PUFA : Poly Unsaturated Fatty Acids
MLR : Multiple Linear Regression	PWP : Permanent Wilting Point
mm : Millimetre	pv : Pathovar
mm ² : Square millimetre	Pl : Plate
Moles g ⁻¹ F wt.h ⁻¹ : Number of moles per gram fresh weight per hour	ppt : Precipitate
mPa : Mega Pascal	Publ : Publication/Publisher
ms: manuscript	Q
ms ⁻¹ : Metre per second	q : quintal
N	R
N : Newton	r : Correlation Co-efficient
Natl: National	R : Multiple Correlation Co-efficient
NAR : Net Assimilation Rate	R ² : Co-efficient of Multiple Determination
NBT : Need Based Treatment	RBD : Randomized Block Design
ng : Nanogram	rg : Genotypic correlation co-efficient
NIR : Net Irrigation Requirement	rh : relative humidity
nm : Nanometre	RGR : Relative Growth Rate
No. : Number	rp : Phenotypic correlation co-efficient
NRA : Nitrate Reductase Activity	RPM : Revolutions Per Minute
NRS : Non-Reducing Sugars	RQ : Respiratory Quotient
NS : Non-Significant	RSS : Reducing sugars
NUE : Nitrogen Use Efficiency	S
O	s : Second
od : Optical Density	Sm ⁻¹ : Siemen per metre
P	S ₂ g : Genotypic Variance
P.M. : After noon / Post Meridian	S ₂ p : Phenotypic Variance
pa : Pascal g ⁻¹ .D.	SD : Standard Deviation
PCA : Principal Components Analysis	SEm \pm : Standard Error of mean \pm
PCV : Phenotypic Co-efficient Variation	SEm : Standard Error of mean
per se : As such with mean	SG : Soluble granules
PET : Potential Evapo-Transpiration	SL : Soluble liquids
Pfr : Phytochrome far red	Spn. : New species
PLW : Physiological Loss in Weight	spp: species (plural)
PM : Physiological Maturity	sp: species (singular)
ppb : Parts per billion	str: strain
	subsp. : Sub species

	soc: society		<i>viz.</i> , : Namely
	supp: supplementary		vs. : Against
	syn: synonym		vol : Volume
T		W	
	T : Absolute temperature		WHC : Water Holding Capacity
	t : Tonne		WI : Weed Index
	T : Trillion		Wm ² : Watt per square metre
	t ha ⁻¹ : Tonne per hectare		WR : Water Requirement
	TSS : Total soluble sugars		wt : per gram
U			wt : Weight
	USWB : United States Weather Bureau	X	WUE : Water use Efficiency
	UV : Ultra Violet		
V			X : Grand Mean
	Var. : Variety		

Appendix 7

Abbreviations of the recognized organizations

At National level

CARI	ICAR- Central Agroforestry Research Institute , Jhansi
CAZRI	ICAR-Central Arid Zone Research Institute, Jodhpur
CCRI	ICAR-Central Citrus Research Institute, Nagpur
CFTRI	Central Food Technological Research Institute, Mysore
CIAE	ICAR-Central Institute of Agricultural Engineering, Bhopal
CIAH	ICAR-Central Institute of Arid Horticulture, Bikaner
CIARI	ICAR-Central Island Agricultural Research Institute , Port Blair
CICR	ICAR-Central Institute of Cotton Research, Nagpur
CIMAP	Central Institute of Medicinal and Aromatic Plants, Lucknow
CIPET	ICAR-Central Institute on Post harvest Engineering and Technology, Ludhiana
CIRCT	ICAR-Central Institute of Research on Cotton Technology, Mumbai
CISTH	ICAR-Central Institute of Sub Tropical Horticulture, Lucknow
CITH	ICAR-Central Institute of Temperate Horticulture, Srinagar
CIWA	ICAR- Central Institute for Women in Agriculture, Bhubaneswar
CPCRI	ICAR-Central Plantation Crops Research Institute, Kasargod
CPRI	ICAR-Central Potato Research Institute, Shimla
CRIDA	ICAR-Central Research Institute of Dryland Agriculture, Hyderabad
CRIJAF	ICAR-Central Research Institute for Jute and Allied Fibres, Barrackpore
CSSRI	ICAR-Central Soil Salinity Research Institute, Karnal
CTCRI	ICAR-Central Tuber Crops Research Institute, Trivandrum
CTRI	ICAR-Central Tobacco Research Institute, Rajahmundry
DCR	ICAR-Directorate of Cashew Research, Puttur
DFR	ICAR-Directorate of Floricultural Research, Pune, Maharashtra
DGR	ICAR-Directorate of Groundnut Research, Junagarh
DKMA	ICAR-Directorate of Knowledge Management in Agriculture, New Delhi
DMAPR	ICAR-Directorate of Medicinal and Aromatic Plants Research, Anand
DMFR	ICAR-Directorate of Floricultural Research, Pune, Maharashtra
DMR	ICAR-Directorate of Mushroom Research, Solan
DOGR	ICAR-Directorate on Onion and Garlic Research, Pune
DRMR	ICAR-Directorate of Rapeseed & Mustard Research, Bharatpur
DSR	ICAR-Directorate of Soybean Research, Indore
DWSR	ICAR-Directorate of Weed Science Research, Jabalpur
IARI	Indian Agricultural Research Institute, New Delhi
IASRI	ICAR-Indian Agricultural Statistics Research Institute, New Delhi
ICAR	Indian Council of Agricultural Research, New Delhi
ICFRE	Indian Council of Forestry Research and Education
IGFRI	ICAR-Indian Grassland and Fodder Research Institute, Jhansi

IIAB	ICAR-Indian Institute of Agricultural Biotechnology, Ranchi
IIFSR	ICAR- Indian Institute of Farming Systems Research, Modipuram
IIHR	ICAR-Indian Institute of Horticultural Research, Bengaluru
IIMR	ICAR- Indian Institute of Millets Research, Hyderabad
IIMR	ICAR-Indian Institute of Maize Research, New Delhi
IINRG	ICAR-Indian Institute of Natural Resins and Gums, Ranchi
IIOPR	ICAR- Indian Institute of Oil Palm Research, Pedavegi, West Godavari
IIOR	ICAR- Indian Institute of Oilseeds Research, Hyderabad
IIPR	ICAR-Indian Institute of Pulses Research, Kanpur
IIRR	ICAR-Indian Institute of Rice Research, Hyderabad
IISR	ICAR-Indian Institute of Seed Research, Mau
IISR	ICAR-Indian Institute of Spices Research, Calicut
IISR	ICAR-Indian Institute of Sugarcane Research, Lucknow
IISS	ICAR-Indian Institute of Soil Sciences, Bhopal
IISWC	ICAR- Indian Institute of Soil and Water Conservation, Dehradun
IIVR	ICAR-Indian Institute of Vegetable Research, Varanasi
IIVBR	ICAR- Indian Institute of Wheat and Barley Research, Karnal
IIVM	ICAR- Indian Institute of Water Management, Bhubaneswar
NAARM	ICAR-National Academy of Agricultural Research & Management, Hyderabad
NAAS	National Academy of Agricultural Sciences
NBAIMO	ICAR-National Bureau of Agriculturally Important Micro-organisms, Mau, Uttar Pradesh
NBAIR	ICAR-National Bureau of Agricultural Insect Resources, Bengaluru
NBPGR	ICAR-National Bureau of Plant Genetics Resources, New Delhi
NBSMI	ICAR-National Biotic Stress Management Institute, Raipur
NBSS&LUP	ICAR-National Bureau of Soil Survey and Land Use Planning, Nagpur
NCIPM	ICAR-National Centre for Integrated Pest Management, New Delhi
NIAEPR	ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi
NIASM	ICAR-National Institute of Abiotic Stress Management, Malegaon, MS
NRCB	ICAR-National Research Centre for Banana, Trichi
NRCG	ICAR-National Research Centre for Grapes, Pune
NRCIF	National Research Centre on Integrated Farming (ICAR-NRCIF), Motihari
NRCL	ICAR-National Research Centre for Litchi, Muzaffarpur
NRCO	ICAR-National Research Centre on Orchids, Pakyong, Sikkim
NRCP	ICAR-National Research Centre for Pomegranate, Solapur
NRCPB	ICAR-National Research Centre on Plant Biotechnology, New Delhi
NRCSS	ICAR-National Research Centre on Seed Spices, Ajmer
NRRI	ICAR-National Rice Research Institute, Cuttack
SBI	ICAR-Sugarcane Breeding Institute, Coimbatore
TFRI	Tropical Forest Research Institute, Jabalpur
VPKAS	ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora

At International level

ACIAR	Australian Centre for International Agricultural Research, Canberra, Australia
ADB	Asian Development Bank, Mandaluyong, Metro Manila, Philippines
AVRDC	Asian Vegetable Research and Development Center, Taiwan
BI	Bioversity International, Maccarese, Roma, Italy
CABI	Centre for Agriculture and Biosciences International, Wallingford, Oxfordshire, UK
CGIAR	Consultative Group on International Agricultural Research, Montpellier France
CIAT	<i>Centro Internacional de Agricultura Tropical</i> Cali , Columbia
CIFOR	Centre for International Forestry Research, Bogor, Indonesia
CIMMYT	<i>Centro Internacional de Mejoramiento de Maiz y Trigo</i> , Mexico , Mexico
CIP	<i>Centro Internacional de Papa</i> , Lima , Peru
FAO	Food and Agriculture Organization, Rome , Italy
IARCs	International Agricultural Research Centres
IBPGR	International Board for Plant Genetic Resources, CTA, Wageningen, The Netherlands.
ICARDA	International Centre for Agricultural Research in Dry Areas, Aleppo, Syria
ICGEB	International Centre for Genetic Engineering and Biotechnology, New Delhi
ICRAF	International Centre for Research in Agroforestry, Nairobi, Kenya
ICRISAT	International Crops Research Institute for the Semi-arid Tropics Patancheru, India
IFAD	International Fund for Agriculture Development
IFDC	International Fertilizer Development Centre, Alabama, USA.
IFPRI	International Food Policy Research Institute (USA) Washington D.C., USA
IIMI	International Irrigation Management Institute, Colombo, Sri Lanka
IITA	International Institute for Tropical Agriculture, Ibadan, Nigéria
ILRI	International Livestock Research Institute Nairobi , Kenya, Addis Ababa, Ethiopia
INIBAP	International Network for the Improvement of Banana and Plantation, Montpellier, France.
IPGRI	International Plant Genetic Resources Institute delle Terme de Caracalla, Rome, Italy
IRRI	International Rice Research Institute, Los Baños, Philippines
ISNAR	International Service for National Agricultural Research, The Hague, The Netherlands
ISTA	International Seed Testing Association, Zürichstrasse 50 8303 Bassersdorf, Switzerland
IUCN	International Union for Conservation of Nature and Natural Resources
IWMI	International Water Management Institute, Battaramulla , Sri Lanka
WARDA	West African Rice Development Association, Monrovia, Liberia
WFC	World Agroforestry Centre, Nairobi, Kenya
WTO	World Trade Organization, Geneva, Switzerland

Foreign* words and their abbreviations

Abbreviation	Word	Meaning
	<i>ab aeterno</i>	From eternity
<i>ab init.</i>	<i>ab initio</i>	From the beginning
	<i>ab</i>	From the cradle
	<i>incunabulum</i>	
	<i>ab antiquo</i>	From olden time
	<i>ad hoc</i>	For the special aim
<i>A.M./am</i>	<i>ante meridiem</i>	Before noon
<i>A.D.</i>	<i>anno domini</i>	In the year of the lord
<i>B.C.</i>		Before Christ
<i>c. or Ca</i>	<i>citra</i>	Approximate
<i>cf.,</i>	<i>confer</i>	Compare
	<i>de novo</i>	From the beginning; arising from an unknown source
<i>e.g.,</i>	<i>exempli gratia</i>	For example
<i>et al.,</i>	<i>et alii</i>	And others (in case of more than two author <i>et al.</i> , replace the list of coworkers in the text)
	<i>et alibi</i>	And else where
<i>etc.</i>	<i>et cetera</i>	And the rest (never use it as and etc.)
	<i>ex situ</i>	Away from place
<i>ib./ibid.</i>	<i>ibidem</i>	In the same work or place or reference
<i>id.</i>	<i>idem</i>	The same person
<i>i.e.,</i>	<i>id est</i>	In reference to; that is
	<i>in apt</i>	Until; In appropriate
	<i>infra</i>	Below
	<i>in situ</i>	In the original or appropriate place
	<i>in toto</i>	In full, wholly
	<i>in vacuo</i>	In a vacuum
	<i>in vitro</i>	In glass; Biology taking place outside a living organism, away from the host

Abbreviation	Word	Meaning
	<i>in vivo</i>	Biology taking place in a living organism; within a living thing, within host
	<i>kharif</i>	Rainy season of cultivation
<i>loc. cit.</i>	<i>loco citiato</i>	In the place cited
	<i>modus operandi</i>	Method of working
<i>n.b.; NB</i>	<i>noto bene</i>	Note well
<i>op.cit.</i>	<i>opere citato</i>	For the work cited
	<i>passim</i>	In various places; here and there
	<i>per annum</i>	By the year
	<i>per capita</i>	By the head
	<i>per se</i>	By itself
<i>pm</i>	<i>post meridiem</i>	After noon
	<i>prècis</i>	Exact
<i>qv</i>	<i>quod vide</i>	Which see
	<i>rabi</i>	Winter season of cultivation
	<i>sans</i>	Without, deprived of
	<i>status quo</i>	Existing condition
	<i>supra</i>	Above
	<i>su generis</i>	Of its own kind
	<i>viva voce</i>	Orally
<i>viz.,</i>	<i>vide licet</i>	Namely
<i>vs.</i>	<i>versus</i>	Against
	<i>vi -á-vis</i>	Directly opposite
	<i>vide</i>	See
	<i>zayad</i>	Summer season of cultivation

* Non English words

Appendix 9

Symbols and abbreviations of important units

Acre	ac; a	Fahrenheit	°F
Active ingredient	<i>a.i.</i>	Farm Yard Manure	FYM
Angstrom	Å	Figure	Fig.
Average	Av.	Filial	F
<i>Bacillus thuringiensis</i>	Bt	Foot	'ft
Basic number of chromosome	X	Fruit damage	FD
Biological oxygen demand	BOD	Gram	g
Calculated F value	Cal.F	Haploid number	n
Centigrade	°C	Hectare	ha
Centilitre	cl	<i>Helicoverpa armigera</i>	HaNPV
Centimeter	cm	Nuclear Polyhedrosis virus	
Concentration	Conc.	Horse power	hp
Correlation	r	Hour	hr
Cost Benefit	CB	Hours	hrs
Critical difference	CD	Hours after treatment	HAT
Cultivar	c.v.	Hundred weight	cwt
Days	d	Inch	"
Days after germination	DAG	Kilo calorie	kcal
Days after sowing	DAS	Kilogram	kg
Days after spraying	das	Kilometer per hour	km/hr
Days old crop	DOC	Kilovolt	kV
Degree of freedom	df	Larval equivalent	LE
Diploid number of chromosome	2n	Litre	l
Dissociation constant	pK	Maximum	Max.
Doses	D	Mean sum of squares	MSS
Electron volt	ev	Meter	m
Emulsifiable concentrate	EC	Meter row length	mrl
Entomo-pathogenic fungus	EPF	Meter square	m ²
Evening	Even.	Microgram	μg
		Micron (1 X10 ⁻⁶ metre)	μ
		Milli curie	mc
		Milli equivalent	meq
		Milli micron	mμ

Milligram	mg	Relative humidity	RH
Milliliter	ml	Relative mobility	Rm
Millimeter	mm	Respiratory quotient	RQ
Millimol	mM	Revolution per minute	rpm
Million hectare	mh	Rhesus factor	Rh
Million tonnes	mt		factor
Million metric tones	MMT	Rupees	₹
Minimum	Min.	Sabouraud's broth	SDB
Minute	min	Second	s
Minute Mole	mi n	Soluble concentration	SC
Molecular weight	mol wt	Soluble granules	SG
Morgan Unit	M	Soluble liquid	SL
Morning	Morn.	Species	Spp.
Nanometre	nm	Standard deviation	S.D.
Neem seed kernel	NSKE	Standard error	SE
extract		Standard error of mean	SEm±
Non significant	NS	Standard	SMMW
Normal	N	meteorological week	
Not applicable	NA	Standard week	SW
Number	no.	Strain	S
Numbers	nos.	Strontium bismuth	SBT
Oil dispersion	OD	tantalate	
Ounce	oz	Sum of squares	SS
Parts per million	ppm	T calculated	Tcal
Parts per 100 million	pphm	Table F value	Tab.F
Per day	Day ⁻¹	Temperature	Temp.
Per gram	g ⁻¹	Ultra violet	UV
Per hectare	ha ⁻¹	Volume per volume	v/v
Per milliliter	ml ⁻¹	Watt	W
Pint	pt	Week	wk
Pod damage	PD	Weight per volume	w/v
Potato dextrose agar	PDA	Wettable dispersible	WDG
Pound	lb	granules	
Pressure per square	psi	Wettable Granules	WG
inch		Wettable Power	WP
Quintal	q	year	yr
Refractive index	n _D		

Statistical and mathematical symbols and abbreviations

Symbol/abbreviation	Stand for
'F'	Analysis of variance
\approx	Approximately identical
χ^2	Chi square test
CV	Coefficient of variation
CD	Critical difference
$\sqrt[3]{}$	Cube root
x^3	Cubed
$^{\circ}$	Degree
df	Degree of freedom
d.f.	Degree of freedom
\leq	Equal or less than
\geq	Equal or more than
e	Estimated
\equiv	Identical
∞	Infinite
\cap	Intersection
\neq	Is not equal to
LSD	Least significant difference
<	Less than
>	More than
‰	Per million
%	Percentage
\pm	Plus or minus
r	Radius of circle
\perp	Right angle
₹	Rupee
$\sqrt{}$	Square root
x^2	Squared
SD	Standard deviation
SE	Standard error
SEd	Standard error of difference
SEm	Standard error of mean
't' test	Student 't' test
Σ	Summation
\int	The integral of

Appendix 11

Symbols and abbreviations for proof reading

Apostrophe or single quotation mark	V'
Close up	⊂
Comma	∧
Delete	
Insert	
Begin a new Para	¶
Do not begin a new Para	No ¶
Period	o
Double quotation mark	“ “
More space	#
Transpose element	Agr^ulture
Raise	⌊
Lower	⌋
Move left	[
Move right]
Full stop	⊙
Set in italic	<i>Ital</i>
Use capital	_____

Use lower case	L=

Appendix 12

**Directorate of Instruction
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (MP)
Thesis Evaluation Report of M.Sc./M.Tech./Ph.D.**

1	Name of the student	
2	Subject	
3	Department	
4	College	
5	Year	
6	Title of the thesis	
7	Technical evaluation of thesis The choice of the problem and its importance Planning of experiment Review of literature Research technique methodology adopted Collection of data	
8	Bibliography Sufficient and relevant Quotation of all the references in the text and vice versa in standard fashion	
9	Presentation of data Clarity of expression Tabulation and summarization of data Illustration, curves, histograms graphs and photographs	
10	Grammatical construction & typographical errors Correctness Punctuation etc. Suggestions for improvement (if any)	
11	General remark about the thesis such as practical application, modification and suggestions for further work etc.	
12	Whether the thesis should be accepted or not Accepted without modification Accepted with suggested modification Not accepted (give reasons)	
13	Whether this research is valid contribution towards the betterment of agricultural technology if so, in what respect	

The performance of the candidate was satisfactory/ not satisfactory hence, I recommend that the thesis submitted by

Mr./ Ms......

be accepted/not accepted for award of M.Sc.(Ag)/M.Sc.(Forestry)/M.Tech./MBA/Ph.D. Degree in the subject of

.....

Grade to the thesis

Good / Average / Poor

Date:

Signature, name and address of the evaluator

Appendix 13

Internationally accepted words for crops

Avoid	Accepted
Bajra	Pearl millet
Jowar	Sorghum
Kodo	Kodo millet
Kutki	Little millet
Lathyrus	Grasspea
Moong	Mungbean
Paddy	Rice
Redgram/arhar	Pigeonpea
Sesamum	Sesame
Urid	Uridbean

ADDENDUMS

Addendum 1

Punctuations

Punctuation	Symbol	Punctuation	Symbol
Apostrophe	'	Hyphen	-
Colon	:	Parenthesis	()
Coma	,	Question mark	?
Dash	—	Semicolon	;
Exclamation mark	!	Full stop	.
Slash/oblique/virgule	/		

Addendum 2

Greek alphabets

Upper Case Letter	Lower Case Letter	Greek Letter Name	Upper Case Letter	Lower Case Letter	Greek Letter Name
		Alpha			Nu
		Beta			Xi
		Gamma			Omicron
		Delta			Pi
		Epsilon			Rho
		Zeta		,	Sigma
		Eta			Tau
		Theta			Upsilon
		Iota			Phi
		Kappa			Chi
		Lambda			Psi
	μ	Mu			Omega

Addendum 3**Roman numerals**

I	II	III	IV	V	VI	VII	VIII	IX	X
1	2	3	4	5	6	7	8	9	10
XX	XXX	XL	L	LX	LXX	LXXX	XC	IC	C
20	30	40	50	60	70	80	90	99	100
CC	CCC	CD	D	DC	DCC	DCCC	CM	XM	M
200	300	400	500	600	700	800	900	990	1000

Addendum 4**Metric prefixes**

Prefix	Symbol	Multiple
deka	da	10
hecto	h	10 ²
kilo	k	10 ³
mega	M	10 ⁶
giga	G	10 ⁹
tera	T	10 ¹²
deci	d	10 ⁻¹
centi	c	10 ⁻²
milli	m	10 ⁻³
micro	μ	10 ⁻⁶
nano	n	10 ⁻⁹
pico	p	10 ⁻¹²
femto	f	10 ⁻¹⁵
atto	a	10 ⁻¹⁸

Addendum 5

Measurement

1 mile	1.60934 km	1760 yard
1 kilometre	1000 m	
1 kilometre	0.621371 mile	
1 nautical mile	1.854 km	2026 yard
1 metre	1.09361 yard	
1 yard	0.914m	
1 fathom	1.829m	2 yard
1 rod	5.029m	5 1/2 yard
1 furlong	201.16m	220 yard
1 metre	3.28 feet	
1 foot	12 inch	
1 foot	30.48 cm	
1 inch	2.54 cm	
Square inch	6.452 cm ²	
Cubic inch	16.387 cm ³	
Square foot	0.092m ²	
Cubic foot	0.028m ²	1728 cubic inch
Are	100 square metre	
Hectare	10,000 square metre	2.471 acre
1 acre	0.404 hectare	4840 yard
Pint	0.473 litre	16 oz
Quart	0.946 litre	32 oz
Gallon	3.785 litre	4 quart
Bushel	35.24 litre	
Pound, avdp	453.592g	16 oz
Pound, troy	373.24g	12 oz
Ounce, avdp	28.35g	16 dram
Ounce, troy	31.103g	480 grain
Dram, avdp	1.177g	
Grain, troy	0.065g	
Carat	0.200g	Precious stone
Ton, metric	10 ⁶ g	2,204.6 pound
Ton, long	1016 metric ton	2,240 pound
Ton, short	0.907 metric ton	2,000 pound

Addendum 6

Symbols of chemical elements

Actinium	Ac	Hafnium	Hf	Promethium	Pm
Aluminum	Al	Helium	He	Protactinium	Pa
Americium	Am	Holmium	Ho	Radium	Ra
Antimony	Sb	Hydrogen	H	Radon	Rn
Argon	Ar	Indium	In	Rhenium	Re
Arsenic	As	Iodine	I	Rhodium	Rh
Astatine	At	Iridium	Ir	Rubidium	Rb
Barium	Ba	Iron	Fe	Ruthenium	Ru
Berkelium	Bk	Krypton	Kr	Samarium	Sm
Beryllium	Be	Lanthanum	La	Scandium	Sc
Bismuth	Bi	Lawrencium	Lr	Selenium	Se
Boron	B	Lead	Pb	Silicon	Si
Bromine	Br	Lithium	Li	Silver	Ag
Cadmium	Cd	Lutetium	Lu	Sodium	Na
Calcium	Ca	Magnesium	Mg	Strontium	Sr
Californium	Cf	Manganese	Mn	Sulfur	S
Carbon	C	Mendelevium	Md	Tantalum	Ta
Cerium	Ce	Mercury	Hg	Technetium	Tc
Cesium	Cs	Molybdenum	Mo	Tellurium	Te
Chlorine	Cl	Neodymium	Nd	Terbium	Tb
Chromium	Cr	Neon	Ne	Thallium	Tl
Cobalt	Co	Neptunium	Np	Thorium	Th
Copper	Cu	Nickel	Ni	Thulium	Tm
Curium	Cm	Niobium	Nb	Tin	Sn
Dysprosium	Dy	Nitrogen	N	Titanium	Ti
Einsteinium	Es	Nobelium	No	Tungsten	W
Erbium	Er	Osmium	Os	Uranium	U
Europium	Eu	Oxygen	O	Vanadium	V
Fermium	Fm	Palladium	Pd	Xenon	Xe
Fluorine	F	Phosphorus	P	Ytterbium	Yb
Francium	Fr	Platinum	Pt	Yttrium	Y
Gadolinium	Gd	Plutonium	Pu	Zinc	Zn
Gallium	Ga	Polonium	Po	Zirconium	Zr
Germanium	Ge	Potassium	K		
Gold	Au	Praseodymium	Pr		



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