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09

NOTIFICATION

Sub : Revised Guidelines for thesis preparation, evaluation and submission of Post-Graduate degree programmes reg.

Ref : 1. Minutes on Item No: 04 of 35th Academic Council meeting held on 10.01.2023
2. Recommendation of the Dean (PGS), UHS, Bagalkot
3. Approval of the Director of Education, UHS, Bagalkot
4. Orders of the Hon'ble Vice Chancellor, UHS, Bagalkot

In pursuance of the above references, “**The Revised Guidelines for thesis preparation, evaluation and submission**” in respect of **Post-Graduate degree programmes** are hereby notified as enclosed in Annexure I. These revised guidelines will come into effect from the date of issue of this notification.

By Order,

REGISTRAR
REGISTRAR
UHS, BAGALKOT.

Enclosure: Annexure I

To: 1. All the members of the Academic Council
2. All the Deans of UHS, Bagalkot
3. The Director, SC/ST cell, UHS, Bagalkot
4. The Controller of Examination, CEEU, UHS, Bagalkot
5. All Academic Units/ Account Sections of UHS, Bagalkot
6. The Personal Secretary to the Hon'ble Vice-Chancellor, UHS, Bagalkot
7. Notice Board- Concerned Colleges, UHS, Bagalkot

Copy submitted for kind information to: The Director of Education, UHS, Bagalkot

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOT



**POST-GRADUATE DEGREE PROGRAMMES
GUIDELINES FOR THESIS PREPARATION, EVALUATION AND SUBMISSION**

**OFFICE THE DEAN POSTGRADUATE STUDIES
UNIVERSITY OF HORTICULTURAL SCIENCES BAGALKOT - 587 104**

UNIVERSITY OF HORTICULTURAL SCIENCES BAGALKOT

**POST-GRADUATE DEGREE PROGRAMMES
GUIDELINES FOR THESIS PREPARATION, EVALUATION AND SUBMISSION**

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Preamble

Research work carried out during the course of study is one of the most important achievements of the post-graduate students, which is documented and submitted in the form of a thesis to the University. The thesis is an important document not only for the students but also for the academics. As a whole, the thesis is referred by large number of people involved in the teaching, research, extension and developmental activities. The research carried out under PG programme is generally of high standard and many breakthrough technologies come through such efforts. Therefore, it is necessary that the students and the advisory committees make efficient efforts not only to bring-out quality research work but also to present the thesis in a form which is nationally and internationally acceptable standard.

In this regard, there should be uniformity in the preparation of thesis across different faculties of the University. Therefore, following guidelines have been developed by the University to help the students and the advisory committees to prepare and submit quality thesis.

These guidelines deal with the presentation of a thesis and other similar related documents which fall within the definition of the term 'Thesis'.

This document, herein after referred to as the “**Post-Graduate Degree Programmes Guidelines for Thesis Preparation, Evaluation and Submission**” and lists the general and specific requirements governing thesis preparation, evaluation and submission including guidelines for structuring the contents. In case of any deviation, the thesis shall be returned to the student for resubmission after necessary revision.

1. THESIS GENERAL INFORMATION

1.1 Definition: For the purpose of these guidelines a thesis or a dissertation is a statement of investigation or research presentation, the author's findings and any conclusions reached, submitted by the author in support of his/her candidature for award of higher degree.

- a) Ph.D., thesis must demonstrate the student's originality and ability for independent investigation and the results of research must constitute a contribution to knowledge. The thesis must exhibit the mastery of the literature on the subject and familiarity with its sources.
- b) M.Sc., thesis must demonstrate students' familiarity with the methodology and tools for conduct of research, in their major fields and ability to present the results of the investigation precisely.

1.2 Copyright: University shall have the right to make available or to allow the thesis to be copied in whole or in part without any reference to the author for study and reference purposes subject to normal conditions of acknowledgement. In all the other cases, the copyright rests with the author.

1.3 Publication of the Thesis: Whenever any material from the thesis is published, a footnote shall always be given reflecting that part of the thesis (the thesis has been) submitted for the Post-graduate degree of the University of Horticultural Sciences, Bagalkot.

2 PARTS AND ARRANGEMENT OF THESIS

The thesis should normally consist of two sections *viz.*, (1) Preliminaries and (2) Text. The names of these parts are only to facilitate the arrangement of various sections and they are not to be indicated as headings. The sections falling under each of the parts are arranged in the thesis as following sequence.

2.1 Front Cover Page of Thesis:

The colour of the front cover page and also back cover page (bound jacket) of all theses of the University would be golden yellow for Master's degree and sky blue colour for Ph.D. degree. The title of the thesis, name of the student, University emblem, the department and the college where the student has registered for his/her PG programme, the name of the University and the month and year of submission would find a place on the outer cover page. These details would be printed in black letters with Times New Roman font. On the spine portion of the thesis, Master's/ Ph.D. thesis, year, title, and student's name and ID number would be printed in black ink (Times New Roman). The outer jacket should be covered tightly with a transparent plastic sheet.

- Title shall be in upper case with bold letters except scientific names.
- Scientific names shall be in italics bold with first alphabet of genus in upper case (Capitals) and as per standards available for the specific species.
- Initial and name of the candidate (as registered at the time of admission to the PG Degree)
- The University emblem (3.5 cm. diameter)
- Department and the college where the student has registered for his/her PG programme

(For details refer *Appendix I*)

2.2 Preliminary Pages of Thesis

The preliminary pages of the thesis should include the following:

- i) First preliminary page giving the same details as the front cover page. (Refer *Appendix II*)
- ii) Second preliminary page will include not only information given on the first preliminary page but also, "Thesis submitted to the University of Horticultural Sciences, Bagalkot, in partial fulfillment for the award of degree of Master of Science (in) _____ / Doctor of Philosophy (in) _____". *Nomenclature of the degree should be as per notification applicable to the candidate.*

The format for this page is given in *Appendices III, IV & V*

- iii) Certificate and approval from the Major Advisor and members of the advisory committee for both Master's and Doctoral degree thesis will form the third preliminary page as per the format given in *Appendix VI*.
- iv) Acknowledgment from the student without any decoration.
- v) Contents Page should include details of all preliminary pages and chapter headings and sub headings up to one decimal space (2 digits). Format of a typical content page is shown in *Appendix VII*
- vi) List of symbols and abbreviations (*Appendix VIII*)
- vii) List of tables (*Appendix VIII*)
- viii) List of Plates/figures (*Appendix VIII*)
- ix) List of appendices (*Appendix VIII*)
- x) Abstract in English
- xi) Abstract in Kannada

3 GENERAL GUIDELINES OF THESIS PREPARATION

3.1 Paper and Margin

The thesis should be typed neatly on **BOTH SIDES OF PAGES** of A4 size white executive bond paper. A uniform margin of 1" at top, bottom, and at right hand side should be provided. On left hand side 1.5" margin shall be provided for textual pages. These margins should be followed for all pages excluding non textual pages (tables, figures, plates and appendices) where sufficient margins should be provided. Non textual pages (tables, figures, plates and appendices) should be typed neatly on one side of A4 size white executive bond paper or A4 size photo paper.

3.2. Font Size and Spacing

The general text in the thesis will have 12 font size with Times New Roman font and 1.5 line space between the lines. Headings will be in Times New Roman 16 font bold and sub-headings will be 12 font bold.

3.3 Paragraphs

The text should begin with two 1.5 space lines below the chapter title. A paragraph indention of eight spaces shall be used.

3.4. Numbering of Pages

Every page in the thesis with text and tables must be numbered at the bottom of page for easy reference. Appendices should be numbered in capital Roman numbers. The preliminary pages should have lower case Roman numerals where, first and second preliminary page are not numbered but counted as shown in the format of content page (**Appendix-VII**) for ready reference.

3.5. Use of Abbreviations

Only standard abbreviations followed nationally and internationally should be used in the thesis. If abbreviations are many and of repetitive nature, a list of abbreviations in the beginning of the thesis should be included in the preliminary pages.

For abbreviating scientific journals, the abbreviations as provided in the “World List of Scientific Periodicals” only should be used. If the standard abbreviations are not available in the World List of Scientific Periodicals, the pattern followed in the scientific journal (Journal of Farm Sciences) may be used.

3.6. Quality of Plates

The actual status of the experimental situation or results only be included in the thesis and if the actual situation cannot be reflected through plates, such plates need not be included in the thesis. A set of original photo prints should be deposited with the college HoD for verification, if necessary.

4. CHAPTERS OF THESIS

The thesis will have the following Chapters in addition to appendices. These chapter names should be written in upper-case letters of font size 20 with Times New Roman bold prefixed with chapter number in Arabic numeral followed by dot. Text in these chapters should be written in Times New Roman with font size 12.

4.1. Introduction:

The Introduction Chapter should introduce the topic to the readers, provide justification for taking-up the research work and clearly indicate the broad and specific objectives of the thesis. The introduction chapter contains description, background and significance of the research topic, purpose and motivation for the study, research problem or task and research question(s) and relationship with and value added to previous research.

4.2. Review of literature:

The Review of Literature shall be a published work and should provide comprehensive amount of information on various aspects of the research topic. Unnecessary references should be avoided. In brief, the review of literature should be intelligent synthesis of published literature related to the topic of research. The post research findings shall be up to date, critically examined with reference to their objective of investigation. In the text, the references should be cited as Dhotre (2009), Ahmed and Sharma (1985), Bowden *et al.* (1985) depending on the number of authors in the specific publication. References should be cited as:

If one author - Patil (1984) or (Patil, 1983)

If two authors - Patil and Rao (1932) or (Patil and Rao, 1982)

If more than two authors - Patil *et al.* (1984) or (Patil *et al.*, 1984)

4.3. Material and Methods:

This Chapter should include details pertaining to the work carried out. For all the departments, this Chapter will be uniformly titled as “Material and Methods”. This chapter should present the techniques, material and methods adopted for conducting the investigation and experiments. The statistical tools adopted for analyzing the data shall be mentioned. The Agro-economic features, descriptions of the study area shall be included. Methodological limitations or procedural weaknesses, if any, shall be given. If any improvement or modification of the method over others has been done, it shall be mentioned.

The names of the insecticides, fungicides, Plant Growth substances, chemicals and Bio-Fertilizers shall begin with capital letters in the beginning of the sentence and thereafter lower case only. Trade names however, are to be indicated with capital letter (First Letter) either at the beginning of sentence or anywhere in the text. The standard statistical tools shall be adopted and the details of data analysis should be provided in the chapter.

4.4. Experimental Results:

The presentation of Results shall be based on the experimental data recorded and subjected to standard statistical analytical procedures. The analyzed data shall be interpreted convincingly. The results should be presented in tabular and text form and may be supported by figures and plates. This chapter may contain heading and sub headings for proper arrangement of results.

4.5. Discussion

The data has to be discussed in relation to the reported findings establishing causes-effect relationships. The discussion shall magnify the un-expected results (positive & negative) and shall foresee the possible effect critically. The findings are also variously referred to as generalization, implications, inference, interpretations and recommendations for further suggested research if any.

4.6. Summary and Conclusion:

The Summary should be brief and to the point. The most important findings point wise or in the bullet form should be included at the end of summary chapter.

Conclusions derived from logical analysis presented in the results and discussion chapter shall be clearly spelt out. Scope for continuing the work further with suggested modifications if any shall be stated lucidly in the last part of the chapter.

4.7. References:

The references should be listed in alphabetical and chronological order. The reference cited in the text alone should be listed under references. While typing the references, hanging margin may be followed for authors' name. Only initials and first letter of name of authors' need to be in upper case.

Literature cited shall contain complete reference list, citing all the Literature and other sources referred in the thesis and appendices including websites arrayed by the name of the author in alphabetical order. Individual reference entries shall not be split over two pages. Format and placement of reference citations shall be consistent throughout the thesis. The commonality of presenting citations of different formats as indicated *Appendix-IX* shall be followed.

Citation and listing of references should be done by using reference Management System software such as "Endnote, Reference Manager, Mandale etc.,

4.8. Appendices

Appendices should appear after the Reference chapter as Appendix -I, Appendix-II, etc., without page numbers. An Appendix running longer than one page may be continued on two or more pages by indicating the continuations e. g. Appendix -I contd.

5. ANTIPLAGIARISM AND OTHER GUIDELINES

5.1 Antiplagiarism Guidelines

In order to improve the quality of the thesis, abstracts, seminar reports, Master's and Doctoral dissertations as well as research articles, notes, conference papers, abstracts submitted by the students and faculty in the University, Anti Plagiarism check is adopted. The adoption of Anti Plagiarism check helps to promote original writing, critical thinking which will ultimately help in achieving higher academic success. A certificate about Anti Plagiarism check will be issued from the University Librarian of UHS, Bagalkot.

Guidelines/Modalities for implementing Anti Plagiarism at UHS, Bagalkot

1. Anti Plagiarism checking is compulsory for Master's and Doctoral degree students for thesis submission.
2. A letter from Major Advisor and HOD's/Dean towards the Anti Plagiarism check is required.
3. Soft copy of the thesis shall be submitted by the students.
4. Anti Plagiarism checking is compulsory for Master's and Doctoral degree theses for external submission.

Particulars	Maximum percentage of similarity allowed
Overall Thesis	25 %
Introduction Chapter	35 %
Review of Literature Chapter	40 %
Material and Methods Chapter	35 %

5. If any student fails to satisfy the above mentioned level, he/she shall resubmit the same after incorporating corrections 15 days after first verification.
6. If the students fail to maintain the level of Anti Plagiarism for second time also he/she shall resubmit 15 days afterwards for third time.
7. If the student fails to fulfill the norms for third time also he/she shall re-register and re-conduct the experiments in ensuing semester.
8. The Anti Plagiarism checks certificate shall be incorporated in students thesis before sending it to the external examiner.
9. To check the Plagiarism in research articles/short notes/abstracts/conference papers submitted by the Master's and Doctoral degree students and faculty members of UHS, Bagalkot, it shall be got checked from Anti Plagiarism unit, University Librarian, UHS, Bagalkot and then get a certificate regarding percentage of Plagiarism.

5.2 Other Guidelines

Any corrections required to be made after the thesis is bound, should be made neatly with Indian Ink only and not with any other ink or pencil. The student will be solely responsible for any mistakes in typing, presentation of material, wrong or mis-statements and for any other omissions and defects in the thesis. He/she should take every care to present a highest quality thesis and towards this end, he/she should devote meticulous care and attention.

Numbering of Divisions: The structural elements (Headings) shall be numbered as 1,2,3 and sub divided as 1.1, 1.2, 2.1, 2.2, *etc.* Further sub divisions shall be made as 1.1.1, 1.2.1, *etc.*, Only Arabic numerals are used. A full stop is placed between numbers designating sub divisions of different levels. At the end no full stop is required.

Mechanical Conventions: The conventions listed in the CBE Style Manual (1972) should be followed for punctuations, full stop, ellipsis, comma, semicolon, colon, question mark, numbering, illustrations, diagrams *etc.*

Decoration: No ornamentation or bordering of the sides shall be permitted including acknowledgement.

WRITING THE THESIS

Style of Writing: The thesis should be written in the past tense, passive voice and in the third person. The guidelines given by the CBE Style Manual should be followed. For general English purpose Webster's Third New International Dictionary should be used.

Transliteration: When 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 use within the text.

Illustrations: Illustrations should immediately follow the textual reference on the following page. They shall be numbered serially in Arabic. The caption shall be placed at the bottom of the figures with the initial letter in capital.

Photographs: Art paper should be used for printing of photographs (photographs shall not be pasted directly).

Tables: Tables shall be placed on a separate page. A table running longer than one page may be continued on two or more pages by indicating the continuations e. g. Table 2 contd. The table shall be numbered serially with Arabic numerals. The table number should end with a full stop without any other punctuation both in the text and table title. The title shall be placed above the table with single line space. The first letter of the title is capitalized in sentence form. A table is closed with a horizontal line and footnote if any pertaining to the table be placed below the line. If it is required to present the table in landscape mode, the format is presented in Appendix - IX for reference.

Acknowledgements: Acknowledgements if any shall be a brief note of appreciation for technical and financial (institutions) assistance received by the candidate in his/her research work and preparation of thesis from organizations and individuals. It shall not exceed two pages without any nick names and dedications.

Abbreviations: A key to abbreviations and acronyms used shall be provided. For an abbreviation not in common use, the term shall be given in full at first instance followed by the abbreviation in brackets. **For the titles of the periodicals, only full title should be given and no abbreviation shall be used.**

Abstract: Abstract should be written in Times New Roman with single line spacing and the title should be in capital letters with Font size of 20 and rest of the text should be written in 12 font size and it should not exceed one page of A4 size with normal margins and single line spacing. It should be crisp and should summaries the content of the thesis/essence of investigation. Title should be preceded by name of student on the left side and name of the Major Advisor on the right side followed by abstract.

SYMBOLS AND ABBREVIATIONS

The International Standards of Symbols and abbreviations shall be followed as shown in **Appendix - IX.**

APPENDICES

Any supporting material not included but referred to in the main text should be given as an appendix. Appendices shall follow the section "Literature Cited." The style of appendices shall be consistent with the style of the main text. If there are more than one, each appendix shall be numbered in Roman capital letter viz., Appendix-I, Appendix-II, etc. and be titled.

INDEX: The thesis shall not be indexed.

6. SUBMISSION OF THE THESIS FOR EXTERNAL EVALUATION

Thesis shall be submitted for external evaluation in a paper-bound form with Yellow Color cover page and complete in all respects except the certificate is signed only by Major Advisor.

7. GUIDELINES FOR THESIS EVALUATION

External Examiner is informed to go through the thesis and give a detailed and critical assessment covering following aspects:

- a. The choice of the research problem is need based or inline to the specific research gap.
- b. Review of the literature should be crisp and up-to-date, the references of literature need to be presented in proper form and the data needs to be well presented and interpreted.
- c. Planning and execution of the research plan or conduct of research experiments are appropriate.
- d. The materials used and methods and techniques applied in execution of the research experiments are appropriate to the subject matter and are effective, and properly applied.
- e. The candidate shows familiarity with, and understanding of the relevant intellectual and creative context.
- f. The results as evidenced in tables/figures/plates and text forms are appropriate and illustrations need to be relevant and not mere repetition. The discussion is not mere repetition of results with citations, instead it should be sufficiently discussed in corroborations with reviews. Discussion and summery need to be critical and not pedestrian.
- g. The contributions of the thesis and the merit or value is important from fundamental and / or applied standpoint need to be mentioned.
- h. It may also be indicated whether the thesis, as submitted by the student, is considered fit for publication in extenso or in an abridge form.
- i. Examiner is expected to give his critical comments on the thesis and list few questions to be asked during the final viva voce.

The report should provide the opinion of the external examiner in the enclosed format along with the detailed report. Typographical and other errors should be pointed out, if they are considered too much to detract the merit of the thesis.

UNIVERSITY OF HORTICULTURAL SCIENCES, BAGALKOTE
Directorate of Post Graduate Studies,
Udyanagiri, Navanagar, Bagalkot – 587103, Karnataka

THESIS EVALUATION REPORT

Name of the candidate :

ID number :

Degree for which examined :

Title of Thesis :

**Name of the Examiner
with Full Postal address :**

Recommendation of the External Examiner

(Please strike off whichever is not applicable and affix signature against your recommendation.)

- The thesis meets the required standard, I recommend that the thesis is accepted in part fulfillment for the proposed degree.

OR

- The thesis meets the required standard and the candidate should improve / correct the thesis as suggested and the Advisory committee may accept thesis thereafter.

OR

- The thesis does not meet the required standards and the thesis is rejected.

(Detailed thesis report is enclosed)

Signature of the External Examiner

Date:

8. SUBMISSION OF FINAL THESIS COPY

After the *viva voce*, the thesis shall be submitted in hard bound form with golden yellow colour cover page. No other colour is acceptable. Each student should submit three hard copies of the thesis and four set of soft copies of the thesis. Out of which, one soft copy of thesis shall be submitted to the Dean of Postgraduate Studies, a copy of the hard and soft form of thesis would be deposited in each of the University Central Library, Department Library and the Major Advisor. In case of ICAR/Donor sponsored scholarship holders, a fourth hard copy of the thesis should be submitted to the office of the Registrar for forwarding to ICAR/Donors.

M.Sc. students should write one research paper and submit to refereed journals as evidenced from acknowledgement before their final thesis viva-voce examination. Ph.D. student should write at least two research papers and publish the same in reputed journal and submit the acceptance letter from the publisher at the time of final viva voce examination.

9. PROFORMA FOR SUBMISSION OF THESIS

PROFORMA FOR THESIS ABSTRACT FOR PUBLICATION IN ENGLISH LANGUAGE - All

Text in Times new Roman

University of Horticultural Sciences, Bagalkot

Thesis Abstract for publication

1.	Title of the thesis	:	
2.	Full name of the Student and ID. No	:	
3.	Name and address of the Major advisor	:	
4.	Degree Awarded and Year	:	
5.	Major subject	:	
6.	Total number of pages in thesis	:	
7.	Number of words in thesis abstract	:	
8.	Number of tables	:	
9.	Number of figures	:	
10.	Number of plates	:	

Signature, name and address

of the major advisor

CERTIFICATE

This is to certify that I have no objection for supplying to any scientist only one copy of any part of this thesis at a time through reprographic process, if necessary, for rendering reference services in University/ College library or documentation centre.

Date:

()

Place:

Signature of the student

Name: _____

Note: Acknowledgement will be given a day after submission of thesis and CD/DVD.

* * *

PROFORMA FOR THESIS ABSTRACT FOR PUBLICATION IN KANNADA LANGUAGE

ತೋಟಗಾರಿಕಾ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬಾಗಲಕೋಟೆ, ಇದರಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಎಂ. ಎಸ್ಸಿ (ತೋಟಗಾರಿಕೆ) / ಪಿ. ಹೆಚ್.ಡಿ ಪ್ರಬಂಧದ ಸಾರಾಂಶ

1	ಪ್ರಬಂಧದ ಶೀರ್ಷಿಕೆ	:	
2	ವಿದ್ಯಾರ್ಥಿಯ ಹೆಸರು/ ಗುರುತಿನ ಸಂಖ್ಯೆ	:	
3	ಮಾರ್ಗದರ್ಶಕರ ಹೆಸರು ಮತ್ತು ವಿಳಾಸ	:	
4	ಕೊಡ ಮಾಡಿದ ಪದವಿ ಮತ್ತು ವರ್ಷ	:	
5	ಪ್ರಧಾನ ವಿಷಯ	:	
6	ಒಟ್ಟು ಪುಟಗಳ ಸಂಖ್ಯೆ	:	
7	ಪ್ರಬಂಧದ ಸಾರಾಂಶದಲ್ಲಿರುವ ಪದಗಳ ಸಂಖ್ಯೆ	:	
8	ಪತ್ರ/ಪಟ್ಟಿಗಳ ಸಂಖ್ಯೆ	:	
9	ಚಿತ್ರ/ರೇಖಾಕೃತಿಗಳ ಸಂಖ್ಯೆ	:	
10	ಫಲಕಗಳ ಸಂಖ್ಯೆ	:	

ಮುಖ್ಯ ಮಾರ್ಗದರ್ಶಕರ ಹೆಸರು
ಮತ್ತು ಸಹಿ

ಪ್ರಮಾಣ ಪತ್ರ

ಈ ಪ್ರಬಂಧದ ಯಾವುದೇ ಭಾಗದ ಒಂದು ಪ್ರತಿಯನ್ನು ಒಂದು ಬಾರಿಗೆ ಯಾವ ವಿಜ್ಞಾನಿಗಾದರೂ/ವಿಶ್ವವಿದ್ಯಾಲಯ/ಮಹಾವಿದ್ಯಾಲಯ ಗ್ರಂಥಾಲಯಕ್ಕೆ ಅಥವಾ ಯಾವುದೇ ದಾಖಲೆ ಪತ್ರಗಳ ಕೇಂದ್ರದ ವತಿಯಿಂದ ಅವಶ್ಯಕತೆ ಇದ್ದಲ್ಲಿ ಒದಗಿಸಿಕೊಡಲು ನಾನು ಸಮ್ಮತಿಸಿರುತ್ತೇನೆ ಎಂದು ಈ ಮೂಲಕ ಧೃಢೀಕರಿಸುತ್ತೇನೆ.

ದಿನಾಂಕ:

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ಸ್ಥಳ:

ವಿದ್ಯಾರ್ಥಿಯ ಸಹಿ

(ಹೆಸರು: _____)

ಗುರುತಿನ ಸಂಖ್ಯೆ

M. Sc.
(Hort.)/
Ph. D

Font: 18

**GENETIC VARIABILITY STUDIES IN
F₂ SEGREGATING GENERATIONS OF SELECTED
HYBRIDS IN TOMATO (*Solanum lycopersicum* L.)**

↑
Font: 18

**RASHMI SHANKAR MUTALIKDESAI
UHS20PGM1350**

Font: 14

GENETIC VARIABILITY STUDIES IN F₂ SEGREGATING
GENERATIONS OF SELECTED
HYBRIDS IN TOMATO (*Solanum lycopersicum* L.)

It should be in the spine portion Font 12



**DEPARTMENT OF VEGETABLE SCIENCE
COLLEGE OF HORTICULTURE, BAGALKOT
UNIVERSITY OF HORTICULTURAL SCIENCES,
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**EXPLORING THE GENETIC WEALTH OF JAMUN
(*Syzygium cumini* Skeels) GENOTYPES FOR YIELD,
QUALITY AND MOLECULAR
CHARACTERIZATION**

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**EXPLORATION OF ENDOPHYTIC
ENTOMOPATHOGENIC FUNGUS, *Beauveria bassiana*
(Bals.-Criv.) Vuill. AGAINST MAJOR INSECT PESTS
OF TOMATO (*Solanum lycopersicum* L.)**

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- i) A separate page/s for listing of abbreviations, plates, figures and appendices may be included as per the requirements. Avoid usage of unconventional abbreviations.
- ii) Preliminary pages of thesis should have small Roman numbers, which should be reflected in the content pages for easy reference.

LIST OF ABBREVIATIONS

T	Absolute Temperature
ac	Acre

LIST OF TABLES

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Table 4.0 Evaluation of Marigold genotypes for growth and yield attributes

Sl No	Genotypes	Plant Height (cm)	Plant Spread (cm)	Primary Branches/Plant	Flower Yield/Plant (g)	Flower Yield/Plot (kg)	Flower Yield/Acre (t)
1	MGH 109-1-2						
2	MGH 26-5						
3	Hisar Beauty						
4	MGH 17-1						
5	MGH 8-2						
6	MGH 160-9-2						
7	MGH 160-8-2						
8	Pusa Narangi						
9	MGH 160-8-3						
10	MGH 133-3-3						

a) Journal

Ghongane S. B., Yeledhalli N. A., Ravi M. V., Patil B. V., Desai B. K. and Beledhadi R. V., 2009, Effect of fertilizer and irrigation levels on growth, yield and quality of transgenic Bt.Cotton in deep vertisols. *Karnataka J. Agric. Sci.*, 22(4): 905 – 908.

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Mesta R. K., Sunkad G. and Katti P., 2003, Chemical control of Alternaria blight of sunflower. *In: Extended summaries of National seminar on self reliance in vegetable oils*. January 28-30, held at DOR, Hyderabad. pp. 149-151.

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Meti S. K., 2013, Social and economic empowerment of farm women in agro based entrepreneurship for sustainable income. *Proc. Int. Conference on Social Sci. Res.*, 4-5 June, 2013, Penang, Malaysia, p.1031.

Taneja H. K., Prasad D., Saxena D. B. and Tomar S. S., 2005, Nematotoxicity of some seed extracts against root knot and reniform nematodes. *Proc. Nation. Symp. Biopest.*, Indian Agril. Res. Inst., New Delhi, p. 14-15.

d) Edited book

Niles G. A., 1980, Breeding cotton for resistance to insect pests. *In Breeding plant resistance to insects*, Macwell F. G. and Jennings (Eds) P. R. John Wiley and Sons, New York, pp. 337-369.

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Mitchell L., 2001, Issues in food security. *Agric. Inform. Bull. Num.*, 765-811, ERS, USDA 1-2.

Rethinam P., 2014, Increasing vegetable oil production through oil palm cultivation in India- Status and Strategies. *Technical Bulletin* of Society for Promotion of Oil Palm Research & Development (SOPOPRAD): 1-18.

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Sochenck N. C., 1965, Compatibility of fungicides with insecticides and foliar nutrients. 57th Annu. Meet. Am. Phytopath. Soc., Florida, 3-7 Oct., 1965.

g) Book

Sparks 1996, Methods of soil Analysis Part-3: Chemical methods. *Soil Sci. Soc. America*, USA.
Gomez K. A. and Gomez A. A., 1984, Statistical procedures for Agricultural Research, 2nd Edition, *John Wiley and Sons*, New York.

h) Report

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Anonymous, 2005, Annual Research Report, NRCG, Junagadh, Gujarat.

Anonymous, 2003, Annual Report (2003-04), Univ. Hort. Sci., Bagalkot, p.137.

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Baig M. M. V., Baig M. I. A. and Muley S. M., 2002, Enhanced growth of groundnut by plant growth promoting *Rhizobacteria*. *Int. Arachis Newsltr.*, 22: 60-63.

k) Thesis

Madar B. H., 2015, Effect of direct sowing and transplanting of Ginger (*Zingiber officinale*) cv. Rio de janero on growth and yield under hill zone of Karnataka. *M. Sc. (Hort.) Thesis*, Univ. Hort. Sci., Bagalkot (India).

l) Cross reference

Yong S. G., 1967, Arch. Biochem. Biophys., 122-481 (cited in: Balasimha, D., 1982). Detailed sources of Balasimha, D., 1982, (this original reference should also be furnished in the reference).

m) Reference for website

www.kar.nic.in/prajavani [Accessed on 03.01.2023]

Note: Wherever standard abbreviation of periodical is not given by the CAB / original publishers, full form of the periodical should be mentioned.

APPENDIX – XI
Symbols and Abbreviations - All Text in Times new Roman 12


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

T	:	Absolute temperature	cl	:	Centilitre
ac	:	Acre	cm	:	Centimetre
a.i.	:	Active ingredient	χ^2	:	Chi square
pm	:	After noon/Post Meridian	R^2	:	Co-efficient of Multiple Determination
v/s.	:	Against	CRD	:	Completely Randomized Design
AICRP	:	All India Co-ordinated Research Project.	r	:	Consumptive Use
H_1	:	Alternate Hypothesis	CFB	:	Corrugated Fibre Board Box
ANOVA	:	Analysis of Variance	BCR	:	Benefit Cost Ratio (BCR)
<i>et al.</i>	:	and others/associates/co- workers	CD (P=0.05%)	:	Critical Difference at 5 per cent level
<i>etc.</i>	:	And so on; and other people / things	CPM	:	Critical Path Model
<i>Per se</i>	:	As such with mean	Kc	:	Crop co-efficient
@	:	at the rate of	ET_c	:	Crop Evapo-Transpiration
AWHC	:	Available Water Holding Capacity	CGR	:	Crop Growth Rate
Bt	:	<i>Bacillus thuringiensis</i>	cft	:	Cubic feet
am.	:	Before noon / Anti Meridian	Cusec	:	Cubic feet per second
B	:	Billion	m^3	:	Cubic metre
BD	:	Bulk Density	m^3h^{-1}	:	Cubic metre per hour
C.S	:	Capsulated Suspension	DAE	:	Days After Emergence
C:N	:	Carbon to Nitrogen ratio	DAP	:	Days After Planting
cg	:	Centigram	DAS	:	Days After Sowing
DAT	:	Days After Transplanting	S^2	:	Genotypic Variance
dcg	:	Decagram	GIS	:	Geographic Information System
dg	:	Decigram	gcc^{-1}	:	gram per cubic centimetre
dl	:	Decilitre	g	:	Gram
dm	:	Decimetre	\bar{X}	:	Grand Mean
dSm^{-1}	:	Decisiemens per metre	GIR	:	Gross Irrigation Requirement
dsm^{-2}	:	Decisiemens per square metre	GI	:	Growth Index

°C	:	Degree Celsius	H.I.	:	Harvest Index
dal	:	Decalitre	ha	:	Hectare
DMRT	:	Duncan's Multiple Range Test	ha-cm	:	Hectare-centimetre
ETL	:	Economic Threshold level	ha-m	:	Hectare-metre
ER	:	Effective Rainfall	hl	:	Hectolitre
ECD	:	Efficiency of Conversion of Digested food	ht	:	Height
ECI	:	Efficiency of Conversion of Ingested food	H	:	Heritability in Broad sense
ET	:	Evapo-Transpiration	HDPE	:	High Density Poly Ethylene
FUE	:	Fertilizer Use Efficiency	HP	:	High Density Poly Ethylene
FC	:	Field Capacity	h	:	Hour
Fig.	:	Figure	IBA	:	Indole -3-butyric acid
F. test	:	Fishers Test	IAA	:	Indole- 3-acetic acid
e.g.	:	for example, for instance	IPM	:	Integrated Pest Management
GA	:	Genetic Advance	IU	:	International Unit
GAM	:	Genetic Advance as per cent of Mean	IPE	:	Irrigation Production efficiency
GCV	:	Genotypic co-efficient of variation	IR	:	Irrigation Requirement
r_g	:	Genotypic correlation co-efficient	JA	:	Jasmonic Acid
kcal	:	Kilo Calories	J	:	Joule
kg	:	Kilogram	M	:	Million
kg ha ⁻¹	:	Kilogram per hectare	Min	:	Minimum
kl	:	Kilolitre	min	:	Minute
km	:	Kilometre	m	:	molality
LSD	:	Latin Square Design	M	:	Molarity
LAD	:	Leaf Area Duration	R	:	Multiple Correlation Co-efficient
LAI	:	Leaf Area Index	MLR	:	Multiple Linear Regression
λ max	:	Light Absorption maxima	Viz.,	:	Namely
λ min	:	Light Absorption minima	ng	:	Nanogram
l	:	Litre	nm	:	Nanometre
l ha ⁻¹	:	Litre per hectare	NBT	:	Need Based Treatment

LLDPE	:	Low Linear Density Polyethylene	NAR	:	Net Assimilation Rate
Max	:	Maximum	NIR	:	Net Irrigation Requirement
mPa	:	Mega Pascal	N	:	Newton
m	:	Metre	NRA	:	Nitrate Reductase Activity
ms ⁻¹	:	Metre per second	NUE	:	Nitrogen Use Efficiency
m ²	:	Metre square	NRS	:	Non-Reducing Sugars
µg	:	Microgram	NS	:	Non-Significant
µl	:	Micro litre	H ₀	:	Null Hypothesis
µm	:	Micrometre	No.	:	Number
µ	:	Micron	Moles g ⁻¹ F wt.h ⁻¹	:	Number of moles per gram Fresh weight per hour
mg	:	Milligram	OD	:	Optical Density
ml	:	Millilitre	Ψ	:	Osmotic Potential
mm	:	Millimetre	Kp	:	Pan Co-efficient
Pa	:	Pascal	ppb	:	Parts per billion
g ⁻¹ .D.wt	:	per gram Dry weight	ppm	:	Parts per million
g ⁻¹ .Fr.wt	:	per Gram Fresh weight	RPM	:	Revolutions Per Minute
L ⁻¹	:	per litre	s	:	Second
m ⁻¹	:	per metre	S m ⁻¹	:	Siemens per metre
m ⁻²	:	Per metre square	SG	:	Soluble granules
%	:	Per cent	SL	:	Soluble liquids
PWP	:	Permanent Wilting Point	Ψ _s	:	Solute potential
PCV	:	Phenotypic Co-efficient of Variation	cm ²	:	Square centimetre
r _p	:	Phenotypic correlation co-efficient	km ²	:	Square kilometre
s ² _p	:	Phenotypic Variance	mm ²	:	Square micrometre
PPFD	:	Photosynthetic Photon Flux Density	SD	:	Standard Deviation
PLW	:	Physiological Loss in Weight	SEm	:	Standard Error mean
PM	:	Physiological Maturity	SE m±	:	Standard Error mean ±
pfr	:	Phytochrome far red	Sub sp.	:	Sub species
Pr	:	Phytochrome red	t	:	Tonne

PUFA	:	Poly Unsaturated Fatty Acids	T ha ⁻¹	:	Tonne per hectare
PET	:	Potential Evapo-Transpiration	TSS	:	Total soluble solids
Up	:	Pressure potential	T	:	Trillion
PCA	:	Principal Components Analysis	UV	:	Ultra Violet
q	:	quintal	USWB	:	United States Weather Bureau
RBD	:	Randomized Block Design	WHC	:	Water Holding Capacity
RGR	:	Relative Growth Rate	Ψ _w	:	Water potential
RQ	:	Respiratory Quotient	WR	:	Water Requirement
K _y	:	Yield Response Co-efficient	wm ⁻²	:	Watt per square meter
Wt.	:	Weight	WI	:	Weed Index


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