GUIDELINES FOR THESIS PRESENTATION

2012

Dr. Y.S.R. HORTICULTURAL UNIVERSITY

Venkataramannagudem, West Godavari Dist. - 534 101

Andhra Pradesh

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Dr. Y.S.R. HORTICULTURAL UNIVERSITY

FOREWORD

The Dr.Y.S.R.Horticultural University has been established during the year 2007 by the Government of Andhra Pradesh with the objectives of developing human resources and technology in accordance with the changing demands in Horticulture. The University offers two year M.Sc (Hort.) programme in three constituent colleges namely Horticultural College and Research Institute (HC&RI) at Venkataramannagudem, West Godavari District, College of Horticulture, Rajendranagar, Rangareddy District and Horticultural College and Research Institute (HC&RI), Anantharajupeta Dr.Y.S.R. Kadapa District and Doctoral programme at Horticultural College and Research Institute (HC&RI), Venkataramannagudem and College of Horticulture, Rajendranagar, Rangareddy District of Andhra Pradesh.

A proper presentation of research work carried out by postgraduate student is essential to maintain high academic standards in any institution of higher learning. To standardise and bring out uniformity in the presentation of thesis, the Dr.Y.S.R.Horticultural University for the first time published the 'Guidelines for Thesis Presentation' during the year 2012. I am sure that the new guidelines will help the postgraduate students and their faculty in the presentation of the postgraduate thesis based on the research work carried out in a befitting manner. In addition, it is hoped that the guidelines will help in bringing in uniformity in the presentation of postgraduate thesises of the University.

I appreciate the efforts made by the Dean (PG Studies) and the members of the committee constituted for the preparation of "Guidelines for Thesis Presentation" for Dr.Y.S.R. Horticultural University and which is helpful to the postgraduate students and their faculty of the PG programme of the University.

VICE-CHANCELLOR

DR. D. SRIHARI
DEAN (PG STUDIES)
Dr. Y.S.R. HORTICULTURAL UNIVERSITY

PREFACE

The thesis is a written record of the results of painstaking research carried out by a post-graduate student as part of the requirements of the degree. In a sense, therefore, it presents his accomplishment as a research worker. During this place of the trailing, the student learns how to specify a research problem with its defined objectives, survey the literature pertaining to the programme, evolve suitable techniques for his/her study, present his/her study results in a concise and coordinated manner and discuss the results of his research meaningfully pointing out his achievements and indication of future lines of work needed for the study. The presentation of this material, therefore, needs to be organised in a coherent, systematic and lucid manner. This publication on "Guidelines for the presentation of thesis" attempts to assist in the compilation and presentation of the thesis in an organised manner acceptable to the scientific community.

These guidelines have been very carefully and painstakingly prepared and compiled for the first time by the committee members, Dr. P.Venkata Rao, Dean (Retd.) CAU, NEH Region (Expert Member), Dr.G.Subbi Reddy, Associate Dean (Retd.), Horticultural College and Research Institute (HC&RI), Venkataramannagudem and Dr. M. Pratap, Professor (Hort.), College of Horticulture, Rajendranagar and which is edited by Dr. B. Prasanna Kumar, Deputy Controller of Examinations, Dr. Y.S.R. Horticultural University, Venkataramannagudem. The efforts are highly commended and the booklet gives complete information on arrangement of the thesis material and form in which it is to be presented, the style of writing, the text and citation of literature. I am sure that the first publication of this guidelines will help the PG Students and for the Teachers of the faculty of this University.

DEAN (PG STUDIES)

DR. B. SRINIVASULU
REGISTRAR
Dr. Y.S.R. HORTICULTURAL UNIVERSITY

ACKNOWLEDGEMENTS

The "Guidelines for the Thesis Presentation" was prepared for the first time during the year 2012, in the University which was very comprehensive and proved to be extremely useful to the post-graduate students and teachers of Dr.Y.S.R.Horticultural University. The task of preparation of these guidelines was entrusted to the committee consisting of Dr.P.Venkata Rao, Dean (Retd.), Central Agricultural University, NEH Region, Dr. G. Subbi Reddy,Associate Dean (Retd.), Horticultural College and Research Institute (HC&RI), Venkataramannagudem and Dr. M. Pratap, Professor (Hort.), College of Horticultural, Rajendranagar under the Chairmanship of Dean PG Studies, which is constituted for this purpose. The guidelines have now been prepared with the able assistance of the committee. I sincerely hope that the revised guidelines will be helpful to the postgraduate students and Faculty of this University in the preparation of Post Graduate Thesis.

I appreciate all the committee members and Dr. D. Srihari, Dean (PG Studies) and Dr. B. Prasanna Kumar, Deputy Controller of Examinations, Dr.Y.S.R.Horticultural University for editing and compilation of the "*Guidelines for Thesis Presentation*" for the first time in the University.

B. Srinivasulu
REGISTRAR

GUIDELINES FOR THESIS PRESENTATION

1. GENERAL

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

1.1 Definition : For the purpose of these guidelines a thesis or a dissertation is a statement of investigation or research presenting 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 student's familiarity with the methodology and tools for conduct of research, scholarship in their major field and ability to present the results of the investigation precisely.

1.2 Copyright : The 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 the thesis has been submitted for the Post-graduate degree of the University.

1.4 Submission of the Thesis : First the thesis shall be submitted in a paper-bound form (Golden Yellow Colour), after the viva voce it shall be hard bound (Chocolate brown Colour) with embossing letters in golden colour along with the University emblem as per the guidelines. No other colour is acceptable.

1.5 Number of Copies : Hard bound thesis shall be submitted in quadruplicate (four copies) along with C.Ds in PDF format of which one each shall be for University Library, Campus Library, Department Library and major advisor.

2. PARTS AND ARRANGEMENT

The thesis should normally consist of various sections viz., (1) Preliminaries (2) Text and (3) End Matter. 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 Preliminaries

Cover Page
Title page
Declaration
Certificates
Acknowledgements
Table of Contents
List of tables
List of Plates
List of illustrations
List of symbols and abbreviations
Abstract

2.2 Text

Introduction
Review of literature
Material and Methods
Results and Discussion
Summary and Conclusions

2.3 End Matter

Literature cited
Appendices

3. COVER

3.1 **Binding :** The thesis shall be fully rexin bound with sufficient rigidity to support the weight when placed on the shelf. In the colour as specified at 1.4 the leaves of the thesis should be permanently secured to the cover, by sewing, in such a way that the leaves can be turned easily and the text clearly read up to the extreme left margin. All materials like Maps, Photos etc., should be the size of the typed matter. Guards in the form of transparencies for plates if any, should be provided.

3.2 **Cover Title** : The out side front board should bear the title of the thesis in at least 21 point type in Times New Roman Font. The title shall be in upper case with bold letters except scientific names. The scientific names shall be in italics with first alphabet of genus in upper case (Capitals). The title shall spell out acronyms, abbreviations and symbols. The initial and name (18 point type bold) of the candidate (as registered at the time of admission to the PG Degree) with highest qualification (14 point type bold), the Degree (18 point type in bold) and discipline (14 type bold) for which the thesis is submitted, the University emblem (2.5 cm. dia) and the year (21 point type in bold) of submission shall be given as depicted in appendix A. The cover material shall be clear off any other lettering.

3.3 **Spine Title :** The spine of thesis shall bear in at least (21 point type), initial, name, degree and the year of submission. The printing on the spine is towards the length side when the volume is lying flat.

4. PAPER, TYPOGRAPHICAL DETAILS AND MECHANICAL CONVENTIONS

4.1 **Paper :** White bond paper of A4 size (215x273 mm) should be used.

4.2 **Typing :** Type characters shall not be less than 13 point with Times New Roman Font. However subscript, Superscript and if essential table should not be less than (8 point) in Times New Roman Font. Copies produced by Xerox or comparably permanent process are acceptable. One side of the paper shall be used for printing and typing.

4.3 **Margins :** The left side margins shall be of 4 cm wide and the top, bottom and right side shall be 2 cm wide.

4.4 **Spacing :** A spacing of 1.5 lines shall be used in type script except for quotations of footnotes where single line spacing can be used. Spacing in Abstract should be in single line space.

4.5 Pagination

4.5.1 Preliminary pages : These are numbered with lower case Roman numerals i.e. i, ii, iii, iv, v, vi, etc,

4.5.2 Text : The text pages shall be numbered with Indo Arabic numerals consecutively through out the thesis including the appendices, Photographs, diagrams, etc. at the upper right corner of the page.

4.5.3 Position of Page Numbers : Page numbers shall be located at the right upper corner of the page approximately 2 cm from the right edge.

4.6 Chapter Heading (First level heading) : Every chapter in the body of the manuscript shall begin with new page and should be numbered with Roman numerals. The chapter heading shall be placed in capitals. It should be 20 point in the Times New Roman Font.

4.7 Chapter Title : The chapter shall have title in the centre of the page (in Times New Roman Font) and must be at 1.5 space below the chapter head, capitalized throughout.

4.8 Paragraphs : The text should begin with two 1.5 spaces below the chapter title. A paragraph indention of eight spaces shall be used. Subsequent pages of the text should begin 2 cm below from the top of the page. No page should end with the beginning of a paragraph.

4.9 Sub-heading within chapters : Theoretically any number of sub-heading levels are possible but in practice more than three levels are confusing. All sub headings and numbers shall have left alignment.

4.9.1 Centre Heading (Second level heading) : This heading shall be in capitals bold and placed at 1.5 space below the last line of the previous section, with 18 point Times New Roman Font. The text following this heading should appear in regular paragraph form. The heading preceded by the number shall be typed fresh with left margin.

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

4.11 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.

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

5. WRITING THE THESIS

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

5.2 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.

5.3 Illustrations : Illustrations should immediately follow the textual reference on the following page. They shall be numbered chapter wise in Arabic numerals for example the second figure in chapter 2 shall bear the number as figure 2.2. The caption shall be placed at the bottom of the figures with the initial letter in capital and shall maintain 1.5 space closed by a full stop.

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

5.5 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 cont. The table shall be numbered chapter wise with Arabic numerals. The table number should end with a full stop without any other punctuations both in the text and table title. The title shall be placed above the table following 1.5 space separately for the table and title. In the table, the decimal should be uniform upto 2 digits for all the values. The first letter of the title is capitalized and single spaced, in sentence form. A table is closed with a horizontal line and footnote if any pertaining to the table be placed below the line single space.

5.6 Citations : In citing works in the text, the following system (author, year) shall be followed.

Basappa (1990)
Bose and Yadav (2002)
Chattopadhyay *et al.* (2006)

For the citation of institutional publication such as Annual Report, Committee Report etc. the organization is treated as the author.

6. PRELIMINARY PAGES

6.1 Title page : The title page is the first page of the thesis and it should consist of the following statements, as depicted in appendix B.

Title	: Times New Roman Font Bold with 20 point
Author name	: Times New Roman Font Bold with 16 point
Authors qualification	: Times New Roman Font Bold with 12 point
Submission Statement	: Times New Roman Font Bold with 14 point
Degree	: Times New Roman Font Bold with 16 point
Discipline (bracket)	: Times New Roman Font Bold with 12 point
Emblem	: 2.5 cm dia
Imprint (year)	: Times New Roman Font Bold with 13,12,12 & 18 point

6.1.1 Title : The title of the thesis should be self explanatory and should give an idea as to the content of the thesis. It shall be placed near the top of the page in capital letters in bold. If the title exceeds one line, an inverted pyramid format shall be followed with out splitting the words in each line (appendix A and B)

6.1.2 Name of the Author : The name of the Author with bold in capital should follow the title in the upper half of the page preceded by the word 'By' centred in a separate line. The name of the author (as registered at the time of P.G admission) shall be given followed by highest Academic qualification.

6.1.3 Submission Statement : The submission statement indicates that it is the thesis submitted to the University in partial fulfilment of the requirement of a degree with discipline.

6.1.4 Imprint : It should follow the emblem and consists of name of the department and the college where the candidate is studying followed by the year of submission. No full stop should be used at the end of the any statement.

6.2 Certificates of Approval : The Certificates of approval, one by the chairperson of the Advisory Committee (Appendix C) and the other by the Advisory Committee. (Appendix D for M.Sc. and Appendix E for Ph.D.).

6.3 List of Contents : The title of the chapters followed by literature cited and appendices along with page numbers shall be listed in sequence as depicted in appendix F.

6.4 **List of tables :** The list of tables with page numbers shall be given in the order in which they occur in the text. The titles of the tables shall be given exactly as they appear in the text.

6.5 **List of Illustrations :** The list of Illustrations such as maps, diagrams, graphs and statements or depictions with page numbers shall be given in the order in which they occur in the text.

6.6 **List of Plates :** The list of plates (Photographs) shall be given in the order in which they occur in the text. The title of plates shall be given exactly as they appear in the text.

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

6.8 **Declaration :** The author shall indicate in a declaration any material contained in the thesis which he / she has used or published before as depicted in appendix G for M.Sc. and appendix H for Ph.D.

6.9 **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.

6.10 **Abstract :** The title should be in capital letters in Times New Roman Font with 20 point, it should be crisp and should summarise the content of the thesis / essence of investigation with single space not exceeding two pages. It shall be preceded by name of the author, title, degree for which it is submitted.

7. TEXT

The text of the thesis shall be divided normally into five chapters viz., (1) Introduction (2) Review of Literature (3) Materials and Methods (4) Results and Discussion and (5) Summary and conclusions.

7.1 **Introduction :** The title shall be in capital letters in Times New Roman Font with 20 point and bold as depicted in appendix I with chapter I (16 point and bold). The introduction should give briefly the lacunae in the subject and the gaps the thesis attempts to fill up. The background and purpose of the investigation should be indicated. The objectives of the investigation should be clearly mentioned with specific objectives.

7.2 **Review of Literature :** It shall be written as chapter II (in Times New Roman Font with 16 point and bold) followed by review of literature (20 point and bold). The review of literature should provide background information to aid the investigator in analysing and formulating the thesis work. The post research findings shall be up to date, critically examined with reference to their objective of investigation. It shall be a published work. The sources of information are cited by following the author and year system as given in 5.6.

7.3 **Material and Methods :** The title shall be in capital letters in Times New Roman Font with 20 point and it shall start as chapter III (16 point bold) as depicted in appendix I. This chapter should present the techniques, Material and methods adopted for conducting the investigations and experiments. The standard statistical tools shall be adopted and the details incorporated for analysing the data. The names of the insecticides, fungicides, Plant Growth substances, chemicals and Bio-Fertilisers shall begin with capital letters in the beginning of the sentence and thereafter lower cap only. Trade names however are to be indicated with capital letter (First Letter) either at the beginning of sentence or anywhere in the text.

7.4 **Results and Discussion :** It shall be written as chapter IV (in Times New Roman Font with 16 point and bold) followed by results and discussion in capital letters (in Times New Roman Font with 20 point and bold) as depicted in appendix I . The presentation of Results shall be based on the experimental data recorded and subjected to standard and appropriate statistical analysis. The analysed data shall be interpreted convincingly. The data tables and other illustrations shall be different from each other to be interpreted and discussed in relation to the reported findings establishing cause - effect relationships. The discussion shall magnify the un-expected results (positive & negative) 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.

7.5 **Summary and Conclusions :** It shall be written as chapter V (in Times New Roman Font 16 point and bold) followed by summary and conclusion in capital letters (in Times New Roman Font 20 point and bold) as depicted in appendix I. A brief report of the work carried out shall form the fist part of this 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.

8. LITERATURE CITED

The title shall be in Times New Roman Font with capital letters in 20 point bold as depicted in appendix I . 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 as given in the appendix **J.**

Individual reference entries shall not be split over two pages. Format and placement of reference citations shall be, consistant throughout the thesis. The commonality of presenting citations of different formats as indicated below shall be followed. In case of institutional publication the name of the institution or organization shall be treated as author. No entry shall appear as anonymous publication.

The main parts of a complete entry for a book are : i) Name (s) of author (s),(ii) year of publication, (iii) Title of book in Italics (iv) Name and city of publishers (v) Pages referred to in the book. An example is:

Kumar, N. 2010. *Introduction to Horticulture*. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi. 139-90

Kalloo, G and Kirti Singh 2001. *Emerging Scenario in Vegetable Research and Development.* Research periodicals and book publishing House, Texas USA. 148-66.

Farooqui, A.A and Sree Ramulu, B.S. 2010. *Medicinal and aromatic crops*. Universities Press (India) Pvt. Ltd., Hyderabad. 152-56.

Sometimes a book does not have a stated author. In such a case, use the title to start the entry. An example is:

Facts on File Physics Handbook. 2nd ed. 2006. New York, Facts on File Inc. 56.

Sometimes books have contributions by a group of people each author contributing one chapter or essay. (i) Name (s) of author(s), (ii) Year of Publication, (iii) Title of the chapter, (iv) Author(s) of the book, (v) Title of book in italics, (vi) Name and city of Publishers, (vii) Pages referred to in the book. In such case it should be cited as:

Biswas, B 1999. Anthurium in T.K. Bose, R.G. Maithi, R.S. Dhua and P. Das (eds) *Floriculture and Landscaping,* Naya Prakash, Calculta, 538-46.

In case of a chapter in a proceeding:

Karthiresan, C and Venkatesha J. 2002. Effect of biofertilizers with levels of N and P on gladiolus. Floriculture research trends in India. *Proceedings of National Symposium on Indian Floriculture in the New millennium.* Lalbagh, Bangalore 118-21.

Bhargava, B.S and Singh H.P. 1990. Potassium and the quality of tropical and subtropical fruit crops. *Proceedings of group discussion* held at IARI, New Delhi, December 2, 1989. Potash and Phosphate Institute of Canada. 22-31.

The main parts of entry for an article in a periodical are (i) Name (s) of author (s), (ii) Year of Publication , (iii) Title of article, (iv) Name of Journal in italics with volume number and pages in the article. This should be cited as:

Gracia, M and Charbaji. T. 1989. Effect of sodium chloride in the medium on the mineral composition of the grapevines. *Agrochemica* . 33:412-23.

Chacko, E.K, Kohili, R.R, and Randhawa G.S 1974. Investigation on the use of 2, Chloro ethyl Phosphonic acid (Ethephan, CEPA) for the control of biennial bearing in Mango. *Scientia Horticulture* 2: 389-98.

Some journals / periodicals will have issue number in addition to volume number. In such cases the issue number shall be indicated in parenthesis after the volume number as show below.

Archana, B, Patil, A.A, Ravi, H and Patil, V.S. 2008. Studies on genetic variability analysis in gladiolus hybrids. *Journal of Ornamental Horticulture*. 11 (2): 121-26.

Agrawal, S. and Dikshit, S.N. 2010. Studies on effect of plant growth regulators on qualitative characters of Sapota CV Cricketball. *Indian Journal of Horticulture* 67(2): 152-55.

The main parts of entry of a website are (i) Name of the Institute, (ii) Title of the article/ Information/webpage in italics and URL. An example is:

Induction of flowering in long day plants by applied IAA
http:www.ncbi.nlm.nih.gov/pmc/articles/pmc540747/... */ plnt phys0037320061p.*

Modified atmosphere packaging (MAP)
http://www.modifiedatmosferpackaging .com

<u>Note that the title of the web-page should be italicized.</u>

The first line of the reference starts from the margin and the subsequent lines continued from the fifth letter (space) of the above line. Each reference is single spaced: a double space should be provided between individual references.

If there are several references with different titles by the same author, the name (s) of the author (s) are to be typed again.

More than one publication of the same author in the same year, a small alphabet shall be mentioned at the year as mentioned below:

Sheldrake, A.R and Narayanan, A.R and Narayanan, A. 1979a. Growth, development and nutrient uptake in pigeonpea (*Cajanus cajan* Milsp.). *Journal of Agricultural Sciences.* 92: 513-526.

Sheldrake, A.R and Narayanan, A. 1979b. Pigeonpa (*Cajanus cajan* Milsp.) as winter crop in peninsular India. *Experimental Agriculture*. 15:91-95.

Likewise the literature cited should follow the format and all the references shall be arranged alphabetically (as shown in Appendix J) at the end after Summary and Conclusions chapter.

9. SYMBOLS AND ABBREVIATIONS

The International Standards of Symbols and abbreviations shall be followed as shown in Appendix K.

10. 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 is more than one, each appendix shall be given alphabetic designation such as appendix A, B, etc. and be titled. The format should follow the rules for chapter titles as shown in Appendix I.

11. INDEX

The thesis shall not be indexed.

Appendix A : Cover Title

21 point

VASE LIFE AND QUALITY OF CHINA ASTER *Callistephus chinensis (L) Nees* CUT FLOWERS AS INFLUENCED BY HOLDING SOLUTIONS

18 point **P. PRAVEEN KUMAR**

14 point **M.Sc. (Hort.)**

18 point

DOCTOR OF PHILOSOPHY IN HORTICULTURE

14 point **(FLORICULTURE AND LANDSCAPE ARCHITECTURE)**

2.5 cm diameter

13 point

DEPARTMENT OF FLORICULTURE AND LANDSCAPE ARCHITECTURE

12 point **COLLEGE OF HORTICULTURE, RAJENDRANAGAR, HYDERABAD - 500 030**

12 point **Dr.Y.S.R. HORTICULTURAL UNIVERSITY**

21 point **June, 2012**

Appendix B : Title page

20 point

VASE LIFE AND QUALITY OF CHINA ASTER *Callistephus chinensis (L) Nees* CUT FLOWERS AS INFLUENCED BY HOLDING SOLUTIONS

18 point **BY**

16 point **P. PRAVEEN KUMAR**

12 point **M.Sc. (Hort.)**

14 point

THESIS SUBMITTED TO Dr.Y.S.R. HORTICULTURAL UNIVERSITY

IN PARTIAL FULFILMENT OF THE REQUIREMENT

FOR THE AWARD OF THE DEGREE OF

16 point **DOCTOR OF PHILOSOPHY IN HORTICULTURE**

12 point **(FLORICULTURE AND LANDSCAPE ARCHITECTURE)**

2.5 cm diameter

13 point

DEPARTMENT OF FLORICULTURE AND LANDSCAPE ARCHITECTURE

12 point **COLLEGE OF HORTICULTURE RAJENDRANAGAR HYDERABAD - 500 030**

12 point **Dr.Y.S.R. HORTICULTURAL UNIVERSITY**

18 point **June, 2012**

Appendix C : Certificate by Chairman of the Advisory Committee

CERTIFICATE

Mr/Ms……. has satisfactorily prosecuted the course of research and that the thesis entitled "……" submitted is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination.

I certify that neither the thesis nor its part there of has been previously submitted by him/her for a degree of any University.

Place :

Date : **Chairman**

Appendix D : Certificate of the Advisory Committee for M.Sc.

CERTIFICATE

This is to certify that the thesis entitled "……." submitted in partial fulfilment of the requirements for the degree of Master of Science in Horticulture (Fruit Science / Vegetable Science / Floriculture and Landscape architecture / Plantation, Spices, Medicinal and Aromatic Crops) of Dr.Y.S.R. Horticultural University, Venkataramannagudem, is a record of the bonafide research work carried out by Mr/ Ms…… under our guidance and supervision.

No part of the thesis has been submitted by the student for any other degree or diploma. The published part and all assistance received during the course of the investigations have been duly acknowledged by the author of the thesis.

Thesis approved by the Student Advisory Committee

Chairman	Name Designation Address	(Signature)
Member	Name Designation Address	(Signature)
Member	Name Designation Address	(Signature)

Date of final viva-voce :

Appendix E : Certificate of the Advisory Committee for Ph.D.

CERTIFICATE

This is to certify that the thesis entitled "....." submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Horticulture (Fruit Science / Vegetable Science / Floriculture and Landscape architecture / Plantation, Spices, Medicinal and Aromatic Crops) of Dr.Y.S.R. Horticultural University, Venkataramannagudem, is a record of the bonafide research work carried out by Mr/Ms..... under our guidance and supervision.

No part of the thesis has been submitted by the student for any other degree or diploma. The published part and all assistance and help received during the course of the investigations have been duly acknowledge by the author of the thesis.

Thesis approved by the Student Advisory Committee

Chairman	Name Designation Address	(Signature)
Member	Name Designation Address	(Signature)
Member	Name Designation Address	(Signature)
Member	Name Designation Address	(Signature)
External Examiner of Final of viva voce	Name Designation Address	(Signature)

Date of final viva-voce :

Appendix F : List of Contents

LIST OF CONTENTS

Appendix G

DECLARATION

I, _____, hereby declare that the thesis entitled "_____" submitted to Dr.Y.S.R. Horticultural University, Venkataramannagudem, for the degree of Master of Science in Horticulture (Fruit Science / Vegetable Science / Floriculture and Landscape architecture / Plantation, Spices, Medicinal and Aromatic Crops) is the result of original research work done by me. I declare that no material contained in the thesis has been published earlier in any manner.

Place : **Name :**

Date : **I.D.No :**

Appendix H

DECLARATION

I, _____ hereby declare that the thesis entitled "_____" submitted to Dr.Y.S.R. Horticultural University, Venkataramannagudem, for the degree of Doctor of Philosophy in Horticulture (Fruit Science / Vegetable Science / Floriculture and Landscape architecture / Plantation, Spices, Medicinal and Aromatic Crops) is the result of original research work done by me. I declare that no material contained in the thesis has been published earlier in any manner.

Place : **Name :**

Date : **I.D.No :**

Appendix I : Titles

20 point	**ABSTRACT**
16 point	**Chapter I**
20 point	**INTRODUCTION**
16 point	**Chapter II**
20 point	**REVIEW OF LITERATURE**
16 point	**Chapter III**
20 point	**MATERIAL AND METHODS**
16 point	**Chapter IV**
20 point	**RESULTS AND DISCUSSION**
16 point	**Chapter V**
20 point	**SUMMARY AND CONCLUSIONS**
20 point	**LITERATURE CITED**
20 point	**APPENDICES**

Appendix J : Literature cited

LITERATURE CITED

Allard, R.W. 1960. *Principles of Plant Breeding*. John Wiley and Sons Inc. New York USA. 162-82.

Amba Dan, Adsule P G and Negi S S. 1987. Evaluation of new grape cultivars for processing. *Journal of Food Science Technology.* 24:194-96.

Bawa, A.S. and Gujral, H.S. 2000. Effect of osmotic agents on the drying behaviour and product quality in raisin processing. *Journal of Scientific and Industrial Research*. 59(1): 63-66.

Biswas, B 1999. Anthurium in T.K. Bose, R.G. Maithi, R.S. Dhua and P. Das (eds) *Floriculture and Landscaping,* Naya Prakash, Calculta, 538-46.

Bolin, H.R. and Stafford A.E. 1980. Fatty acid esters and Carbonates in Grape drying. *Journal of Food Science.* 45: 754-55.

Choudhury. B and Babel, Y.S. 1970 Studies on sex expression, sex ratio and fruit set as affected by different plant growth regulator sprays in bottle gourd. *Horticultural Science.* 34 : 54-9.

Durkin, D.J. 1979. Effect of Millipore filtration citric acid and sucrose on peduncle water potential of cut rose flowers. *Journal of American Society of Horticultural Sciences.* 104: 860-63.

Halevy, A.H. 1976. Treatments to improve water balance of cut flowers. *Acta Horticulture.* 64:223-30.

Panse, V.G. and Sukhatme, P.V. (Revised by Sukhatme, P.V. and Amble, V.N.) 1985. *Statistical Methods for Agricultural Workers.* ICAR, New Delhi. 187-202.

Planning Commission, GOI, New Delhi. 2007. Report of the Working Group on Horticulture, *Plantation Crops and Organic Farming for the XI Five-year Plan.* 2010-23.

Pratap, M. 2002. Studies on effect of pre-harvest micronutrient sprays on growth, production and post-harvest vase life of gladiolus Flowers (Gladiolus grandiflorens) CV. Traderhorn. *Ph.D. Thesis.* Acharya N.G. Ranga Agricultural University, Hyderabad, India.

Rao, A.M, Rao, P.V. and Narayana Reddy, Y. 2004. Evaluation of turmeric cultivars for growth, yield and quality characters. *Journal of Plantation crops*. 32(3): 20-25.

Rao, P.V. and Chhonkar, V.S. 1983. Genetic analysis of fruit number in Chillies *Indian Journal of Horticulture.* 40:72-6.

Salunkhe, D.K, Bhatt, N.R. and Desai, B.B. 1990. Post harvest biotechnology of Flowers and Ornamental Plants. Naya Prokash Calcutta. 49 - 50.

Sheldrake, A.R. and Narayanan, A. 1979a. Growth, development and nutrient uptake in pigeopnpea (*Cajanus cajan Milsp*.) *Journal of Agricultural Sciences*. 92:513-26.

Sheldrake, A.R. and Narayanan, A. 1979b. Pigeonpea (*Cajanus cajan Milsp*.) as winter crop in peninsular India. *Experimental Agriculture*. 15:91-95.

Singh, R.K, Singh, N.D. and Arunachalam, A.1999. Effect of Agromin and Planofix on the growth and yield of garlic (*Allium sattivum* L.). *Horticultural Journal*. 12(2): 101-105.

Swaroop, K. 2010. Morphological variation and evaluation of gladiolus germplasm. *Indian Journal of Agricultural Sciences*. 80 (8): 742-5.

Appendix K : Symbols and Abbreviations

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

T	:	Absolute temperature
ac	:	Acre
a.i.	:	Active ingredient
P.M.	:	After noon / Post Meridian
vs.	:	Against
AICRP	:	All India Co-ordinated Research Project.
H_1	:	Alternate Hypothesis
ANOVA	:	Analysis of Variance
et al.	:	and others
etc.	:	and so on; and other people / things
per se	:	As such with mean
@	:	at the rate of
AWHC	:	Available Water Holding Capacity
Bt	:	*Bacillus thuringiensis*
Btk	:	*Bacillus thuringiensis var. Kurstaki*
A.M.	:	Before noon / Anti Meridian
B	:	Billion
BP	:	Black Plastic Mulch
BD	:	Bulk Density
C.S	:	Capsulated suspension
C:N ratio	:	Carbon to Nitrogen ratio
cg	:	Centigram
cl	:	Centilitre
cm	:	Centimetre
χ^2	:	Chi-square
R^2	:	Co-efficient of Multiple Determination
CRD	:	Complete Randomized Design
CU	:	Consumptive Use
r	:	Correlation Co-efficient
CFB	:	Corrugated Fibre Board Box
BCR	:	Benefit Cost Ratio (BCR)
CD (P=0.05%)	:	Critical Difference at 5 per cent level
CPM	:	Critical Path Model
Kc	:	Crop Co-efficient

ET_C	:	Crop Evapo-Transpiration
CGR	:	Crop Growth Rate
Cry	:	crystal
Cft	:	Cubic feet
Cusec	:	Cubic feet per second
m^3	:	Cubic metre
m^3h^{-1}	:	Cubic metre per hour
DAE	:	Days After Emergence
DAF	:	Days After Flowering
DAP	:	Days After Planting
DAS	:	Days After Sowing
DAT	:	Days After Treatment
dcg	:	Decagram
dg	:	Decigram
dl	:	Decilitre
dm	:	Decimetre
dSm^{-1}	:	Decisiemen per metre
dsm^{-2}	:	Decisiemen per square meter
^oC	:	Degree Celsius
dkl	:	Dekalitre
DMRT	:	Duncan's Multiple Range Test
ETL	:	Economic Threshold level
ER	:	Effective Rainfall
ECD	:	Efficiency of Conversion of Digested food
ECI	:	Efficiency of Conversion of Ingested food
ET	:	Evapo-Transpiration
FUE	:	Fertilizer Use Efficiency
FC	:	Field Capacity
Fig.	:	Figure
F. test	:	Fishers Test
e.g.	:	for example, for instance
GA	:	Genetic Advance
GAM	:	Genetic Advance as per cent of Mean
GCV	:	Genotypic Co-efficient of Variation
r_g	:	Genotypic correlation co-efficient
S^2_g	:	Genotypic Variance
GIS	:	Geographic Information System

gcc^{-1}	:	glam per cubic centimetre
g	:	Gram
X	:	Grand Mean
GIR	:	Gross Irrigation Requirement
GI	:	Growth Index
H.I	:	Harvest Index
ha	:	Hectare
ha-cm	:	Hectare-centimetre
ha-m	:	Hectare-metre
hl	:	Hectolitre
ht	:	Height
H	:	Heritability in Broad sense
HDPE	:	High Density Poly Ethylene
HP	:	Horse Power
h	:	Hour
IBA	:	Indole Butyric Acid
IAA	:	Indole, 3 Acetic Acid
IPM	:	integrated pest management
IU	:	International Unit
IPE	:	Irrigation Production Efficiency
IR	:	Irrigation Requirement
JA	:	Jasmonic Acid
J	:	Joule
J	:	Joule
kcal	:	Kilo Calories
kg	:	Kilogram
kg ha^{-1}	:	Kilogram per hectare
$Kgha^{-1}$ mm^{-1}	:	Kilogram per hectare millimetre
kl	:	Kilolitre
km	:	Kilometre
LSD	:	Latin Square Design
LAD	:	Leaf Area Duration
LAI	:	Leaf Area Index
λmax	:	Light absorption maxima
λmin	:	Light absorption minima
l	:	Litre
1 ha^{-1}	:	Litre per hectare

LLDPE	:	Low Linear Density Polyethylene
Max	:	Maximum
mPa	:	Mega Pascal
m	:	Metre
ms^{-1}	:	Metre per second
m^2	:	Metre square
µg	:	Microgram
µl	:	Microlitre
µm	:	Micrometre
µ	:	micron
mg	:	Milligram
ml	:	Millilitre
mm	:	Millimetre
M	:	Million
Min	:	Minimum
min	:	Minute
m	:	molality
M	:	Molarity
R	:	Multiple Correlation Co-efficient
MLR	:	Multiple Linear Regression
viz.,	:	Namely
ng	:	Nanogram
nm	:	Nanometre
NBT	:	Need Based Treatment
NAR	:	Net Assimilation Rate
NIR	:	Net Irrigation Requirement
N	:	Newton
NRA	:	Nitrate Reductase Activity
NUE	:	Nitrogen Use Efficiency
NRS	:	Non-Reducing Sugars
NS	:	Non-Significant
H_o	:	Null Hypothesis
No.	:	Number
Moles g^{-1}F wt.h^{-1}	:	Number of moles per gram fresh weight per hour
OD	:	Optical Density
Ø	:	Osmotic Potential
Kp	:	Pan Co-efficient

ppb	:	Parts per billion
ppm	:	Parts per million
pa	:	Pascal
g^{-1}.D.wt	:	per gram Dry weight
g^{-1}.Fr.wt	:	Per Gram Fresh weight
L^{-1}	:	per liter
m^{-1}	:	per meter
m^{-2}	:	per meter square
%	:	Percent
PWP	:	Permanent Wilting Point
PCV	:	Phenotypic Co-efficient Variation
r_p	:	Phenotypic correlation co-efficient
s^2_p	:	Phenotypic Variance
PPFD	:	Photosynthetic Photon Flux Density
PLW	:	Physiological Loss in Weight
PM	:	Physiological Maturity
Pfr	:	Phytochrome far red
Pr	:	Phytochrome red
PUFA	:	Poly Unsaturated Fatty Acids
PET	:	Potential Evapo-Transpiration
Øp	:	Pressure potential
PCA	:	Principal Components Analysis
q	:	quintal
RBD	:	Randomized Block Design
RSS	:	Reducing sugars
RGR	:	Relative Growth Rate
RQ	:	Respiratory Quotient
RPM	:	Revolutions Per Minute
s	:	Second
S m^{-1}	:	Siemen per metre
SG	:	Soluble granules
SL	:	Soluble liquids
υs	:	Solute potential
cm^2	:	Square centimetre
km^2	:	Square kilometre
mm^2	:	Square millimetre
SD	:	Standard Deviation

SEm	:	Standard Error of mean
SE m±	:	Standard Error of mean ±
Subsp.	:	Sub species
t	:	Tonne
t ha^{-1}	:	Tonne per hectare
TSS	:	Total soluble sugars
T	:	Trillion
UV	:	Ultra Violet
USWB	:	United States Weather Bureau
Var.	:	Variety
WHC	:	Water Holding Capacity
Øw	:	Water potential
WR	:	Water Requirement
WUE	:	Water use Efficiency
Wm^{-2}	:	Watt per square metre
WI	:	Weed Index
wt	:	Weight
Ky	:	Yield Response Co-efficient