A Comprehensive guideline for B. Tech. and M. Tech. (Food Technology) dissertation writing

Prepared by

Central Department of Food Technology

Institute of Science and Technology

Tribhuvan University, Nepal

Contents of this manual

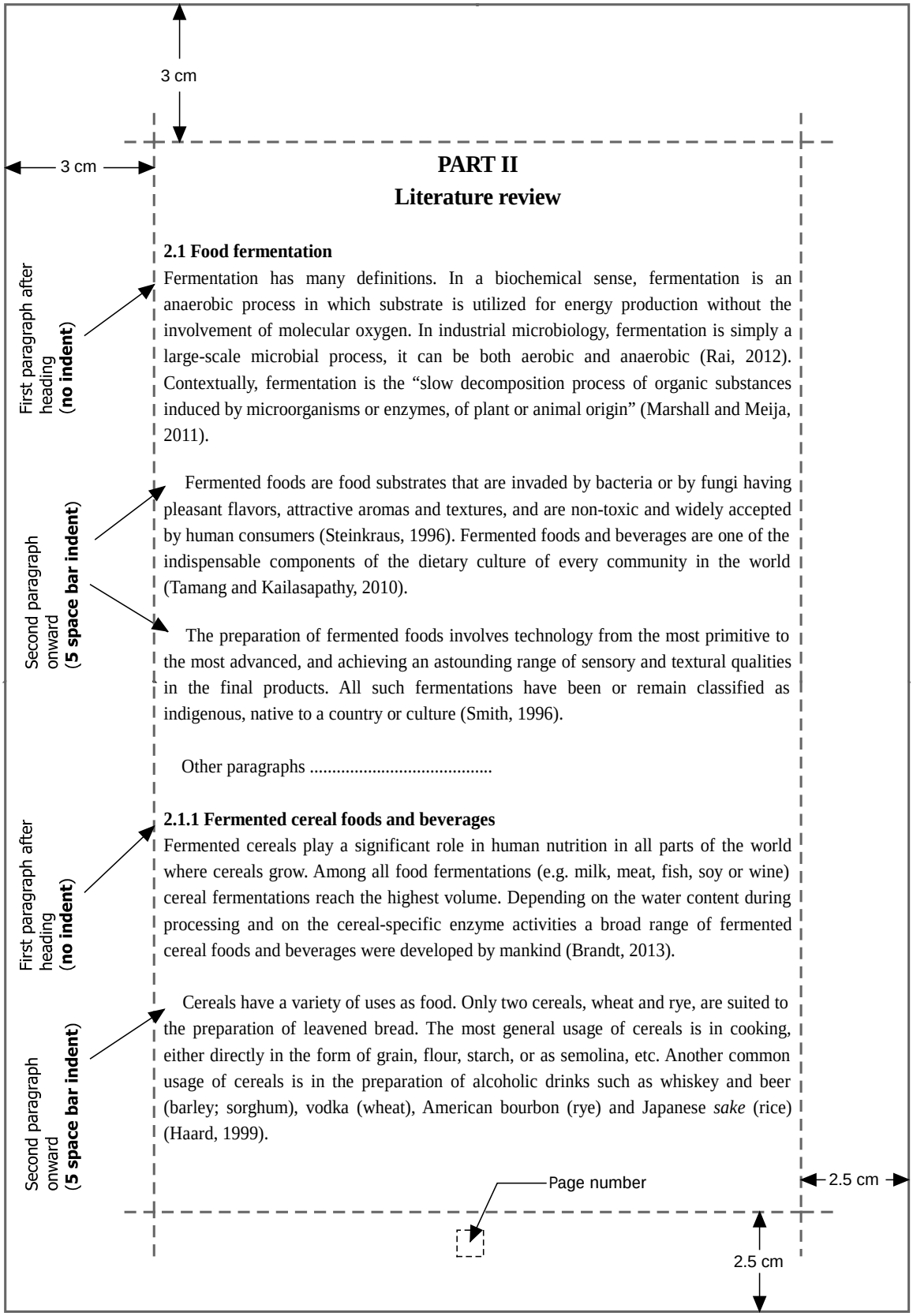
General information

1. *Unit and nomenclature:* Use SI system of unit and IUPAC rule for nomenclature. In special cases, other conventional forms are also acceptable, such as: ppm (for parts per million), mg/L, cfu/g (colony forming units per gram), etc.
2. *Standard notations*: Use following standard notations for units:

Full form	Use	Do not use
gram	g	gm or Gm
milligram	mg	mG
milliliter	ml	mL
kilogram	kg	KG
minute(s)	min	minute or minutes*
hour(s)	h	hr, hrs or hour(s)*
second(s)	s	sec or second(s)*
milligram per liter	mg/L	mg/liter
percent	%	percent*
microgram	μg	mcg
microliter	μL	μl or mcL
micrometer	μm or μ	mcm or micron

   * Unless it is absolutely necessary for clarity, e.g., "…the solution needs boiling for several *hours*….", "…the *percentage* of defaulter has increased significantly..", etc.

3. *Spacing and font:* Unless specified, use 1.5 line spacing and Times New Roman font 12 pt.
4. *Page set up:* Top = 3 cm, Bottom = 2.5 cm, Left = 3 cm and Right = 2.5 cm.
5. *Pagination:* Put the page number at the bottom center. Hide the page number on the first page of each part. The page numbering for the front matter (from *title page* to *list of abbreviations*) should be in roman numerals (i, ii, iii, …). The numbering from *Part I* onwards should be in Arabic numerals (1, 2, 3,…).
6. *Paper size:* A4.
7. *Bullets/numbering:* Use automatic numbering (with an indent of 0.63 cm or 0.25 inch) and edit the paragraph spacing to 1 line *for items between the top and bottom items*.
8. *Paragraph format:* Set 10 pt or 12 pt space either before or after (not both) paragraph.
9. *Indentation in paragraphs:* No indentation in the first paragraph (under each heading) but an indentation of 5 space bars for all subsequent paragraphs (under the same heading).
10. *Key words (optional):* Keywords are words or phrases that you feel capture the most important aspects of your paper. You may enter up to 6 key words. Capitalize the first letter of the key words. Key words may be a single word or a phrase.


3 cm
3 cm
PART II
Literature review
2.1 Food fermentation
Fermentation has many definitions. In a biochemical sense, fermentation is an anaerobic process in which substrate is utilized for energy production without the involvement of molecular oxygen. In industrial microbiology, fermentation is simply a large-scale microbial process, it can be both aerobic and anaerobic (Rai, 2012). Contextually, fermentation is the "slow decomposition process of organic substances induced by microorganisms or enzymes, of plant or animal origin" (Marshall and Meija, 2011).
Fermented foods are food substrates that are invaded by bacteria or by fungi having pleasant flavors, attractive aromas and textures, and are non-toxic and widely accepted by human consumers (Steinkraus, 1996). Fermented foods and beverages are one of the indispensable components of the dietary culture of every community in the world (Tamang and Kailasapathy, 2010).
The preparation of fermented foods involves technology from the most primitive to the most advanced, and achieving an astounding range of sensory and textural qualities in the final products. All such fermentations have been or remain classified as indigenous, native to a country or culture (Smith, 1996).
Other paragraphs .....
2.1.1 Fermented cereal foods and beverages
Fermented cereals play a significant role in human nutrition in all parts of the world where cereals grow. Among all food fermentations (e.g. milk, meat, fish, soy or wine) cereal fermentations reach the highest volume. Depending on the water content during processing and on the cereal-specific enzyme activities a broad range of fermented cereal foods and beverages were developed by mankind (Brandt, 2013).
Cereals have a variety of uses as food. Only two cereals, wheat and rye, are suited to the preparation of leavened bread. The most general usage of cereals is in cooking, either directly in the form of grain, flour, starch, or as semolina, etc. Another common usage of cereals is in the preparation of alcoholic drinks such as whiskey and beer (barley; sorghum), vodka (wheat), American bourbon (rye) and Japanese *sake* (rice) (Haard, 1999).
First paragraph after heading (no indent)
Second paragraph onward (5 space bar indent)
First paragraph after heading (no indent)
Second paragraph onward (5 space bar indent)
Page number
2.5 cm
2.5 cm

Contents of the dissertation

The dissertation should consist of the following items:

1. Cover page
2. Title page
3. Approval letter
4. Acknowledgement
5. Abstract
6. Contents
7. List of tables
8. List of Figures
9. List of Plates
10. List of abbreviations

Roman numerals for pagination

11. Part I: Introduction
12. Part II: Literature review
13. Part III: Materials and methods
14. Part IV: Results and discussion
15. Part V: Conclusions and recommendations
16. Part VI: Summary
17. References
18. Appendices

Arabic numerals for pagination

Detail of each of the components

1. Cover page

The cover page should contain (a) Title of the dissertation, (b) Name of the student and (c) Institutional address as per the following specifications and specimens.

Contents	**Specification**
Title of the dissertation	
	Top of the page; 14 pt; Bold; Uppercase; Center-aligned

Name of the student (full name)	
	Title case; 14 pt; Bold; Center-aligned between the Title and Institutional address

Institutional address	
Department/ Central department	Title case; 14 pt; Bold
Campus/College	Title case; 13 pt; Bold
Institute	Title case; 13 pt; Bold
University	Title case; 13 pt; Bold
Year of submission in A.D.	13 pt; Bold

Cover page specimen for B. Tech (Food Technology)

ANALYSIS OF CHROMATOGRAPHIC PROFILES AND SENSORY QUALITY OF TEA AROMA

by

Laxmi Pradsad Devkota

Department of Food Technology

Central Campus of Technology

Institute of Science and Technology

Tribhuvan University, Nepal

2012

Cover page specimen for M. Tech. (Food Technology)

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Tribhuvan University, Nepal

2012

2. Title page

This page should have (a) Title of the dissertation, (b) Name of the Department/ Central Department where the dissertation is to be submitted and the intended academic degree (c) Name of the student, and (d) Institutional address as per the following specification and specimens.

Contents	**Specification**
Title of the dissertation	
	Title case; 14 pt; Bold; Center-aligned

Name of the Department/Central Department and Degree	
	Title case; 12 pt; Bold; Italics; Center-aligned

Name of the student	
	Full name; Title case; 12 pt; Bold; Center-aligned

Institutional address	
Department/ Central department	Title case; 14 pt; Bold
College/Campus name and place	Title case; 13 pt; Bold
Institute	Title case; 13 pt; Bold
University	Title case; 13 pt; Bold
Month and year of submission in A.D.	13 pt; Bold

Title page specimen for B. Tech. (Food Technology)

Analysis of Gas Chromatographic Profiles and Sensory Quality of Tea Aroma

A dissertation submitted to the Department of Food Technology, Central Campus of Technology, Tribhuvan University, in partial fulfillment of the requirements for the degree of B. Tech. in Food Technology

by

Laxmi Prasad Devkota

Department of Food Technology

Central Campus of Technology, Dharan

Institute of Science and Technology

Tribhuvan University, Nepal

January, 2012

Title page specimen for M. Tech. (Food Technology)

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Institute of Science and Technology

Tribhuvan University, Nepal

January, 2012

3. Approval letter

This page should contain (a) Institutional address where the dissertation is to be submitted, (b) Approval statement, (c) Name and signature of dissertation committee, and (d) Date of submission (in A.D.) as per the following specification and specimens.

Contents	**Specification**
Institutional Address	
University	Title case; 13 pt; Bold; Center-aligned
Institute	Title case; 13 pt; Bold; Center-aligned
Depart/Central department	Title case; 14 pt; Bold; Center-aligned
Name and place of the college	Title case; 13 pt; Bold; Center-aligned
Approval letter (text)	Title case; 14 pt; Bold; Center-aligned
Statement	Left- aligned
The word ‘dissertation’	12 pt; Bold; Italics
Title of the dissertation	Title case; 12 pt; Bold; Italics
Name of the student (full name), degree and subject	Title case; 12 pt; Bold
Dissertation committee	Title case; Underlined; 14 pt; Bold; Left-aligned
Head of the department/Central Department, External examiner, Supervisor and Internal examiner	Title case; 12 pt; Bold; Left-aligned
Date of submission in A.D.	12 pt; Bold; Normal; Left-aligned

Approval letter specimen for B. Tech. (Food Technology)

Tribhuvan University

Institute of Science and Technology

Department of Food Technology

Central Campus of Technology, Dharan

Approval Letter

This ***dissertation*** entitled ***Analysis of Gas Chromatographic Profiles and Sensory Quality of Tea Aroma*** presented by **Laxmi Prasad Devkota** has been accepted as the partial fulfillment of the requirement for the **B. Tech. degree in Food Technology**

Dissertation Committee

1. **Head of the Department _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
2. **External Examiner _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
3. **Supervisor _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
4. **Internal Examiner _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)

January 12, 2012

Approval letter specimen for M. Tech. (Food Technology)

Tribhuvan University

Institute of Science and Technology

Department of Food Technology, Dharan

Approval Letter

This *dissertation* entitled *Analysis of Gas Chromatographic Profiles and Sensory Quality of Tea Aroma* presented by Laxmi Prasad Devkota has been accepted as the partial fulfillment of the requirement for the M. Tech. degree in Food Technology

Dissertation Committee

5. **Head of the Department _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
6. **External Examiner _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
7. **Supervisor _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)
8. **Internal Examiner _____**
   (Mr./Dr.????????/, Prof./Assoc. Prof.)

January 12, 2012

4. Acknowledgements

Acknowledge briefly any substantial help you received from grant-giving bodies or from individuals who supplied money, materials, technical assistance or advice on the conduct of the work or preparation of the dissertation. Acknowledge the cooperation of department or colleagues who provided specimens, or other help not forming part of their routine obligations. Be sure that all those you thank agree to having their help recognized and that they approve the form in which you acknowledge it. Acknowledgements should be typed as per the following specification and specimen.

Contents	**Specification**
Acknowledgements	14 pt; Bold; Center-aligned
Text	12 pt; Normal; Justified
Date of submission (in A.D.)	12 pt; Normal; Bottom; Left-aligned
Name (full form) and signature of the student	12 pt; Normal, Bottom; Right-aligned

A specimen of acknowledgement

Acknowledgements

I would like to express my sincere ……

……..

…….

……..

…….

……

…….

Date of submission: January 12, 2012 _____

(Laxmi Prasad Devkota)

5. Abstract

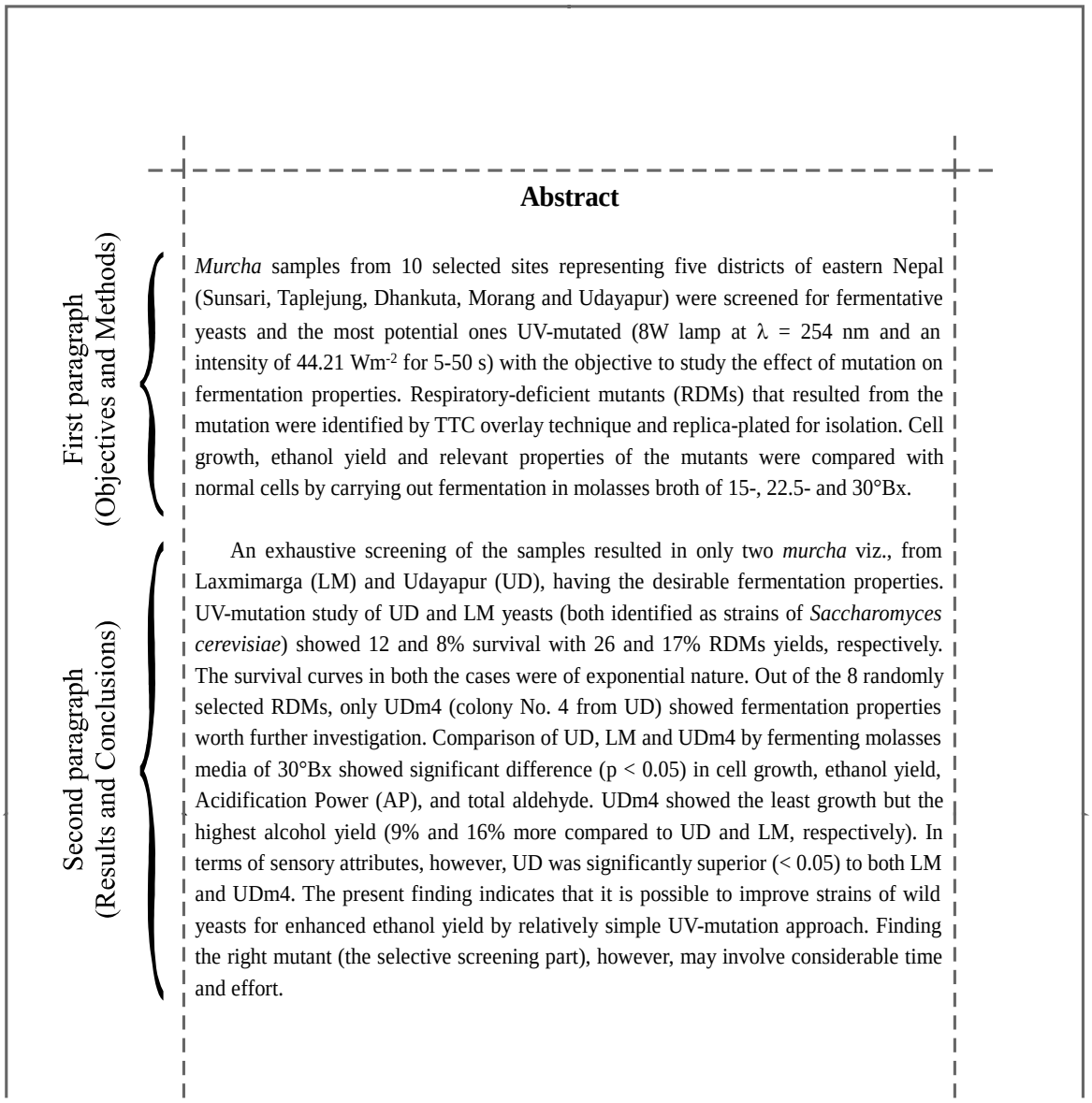
1. The heading ‘Abstract’ should be of 14 pt, Bold, and Center-aligned.

2. The text material should be 12 pt, Normal (not **bold**, *italics*, etc.) font, justified (alignment).

3. Abstract should not exceed 250 words. It must be in a structured form consisting of objectives, methods, results and conclusions briefly explaining what was intended, done, observed and concluded.

4. Generally, it should be written in two paragraphs. The first paragraph should include the objectives and methods and the last paragraph results and conclusions.

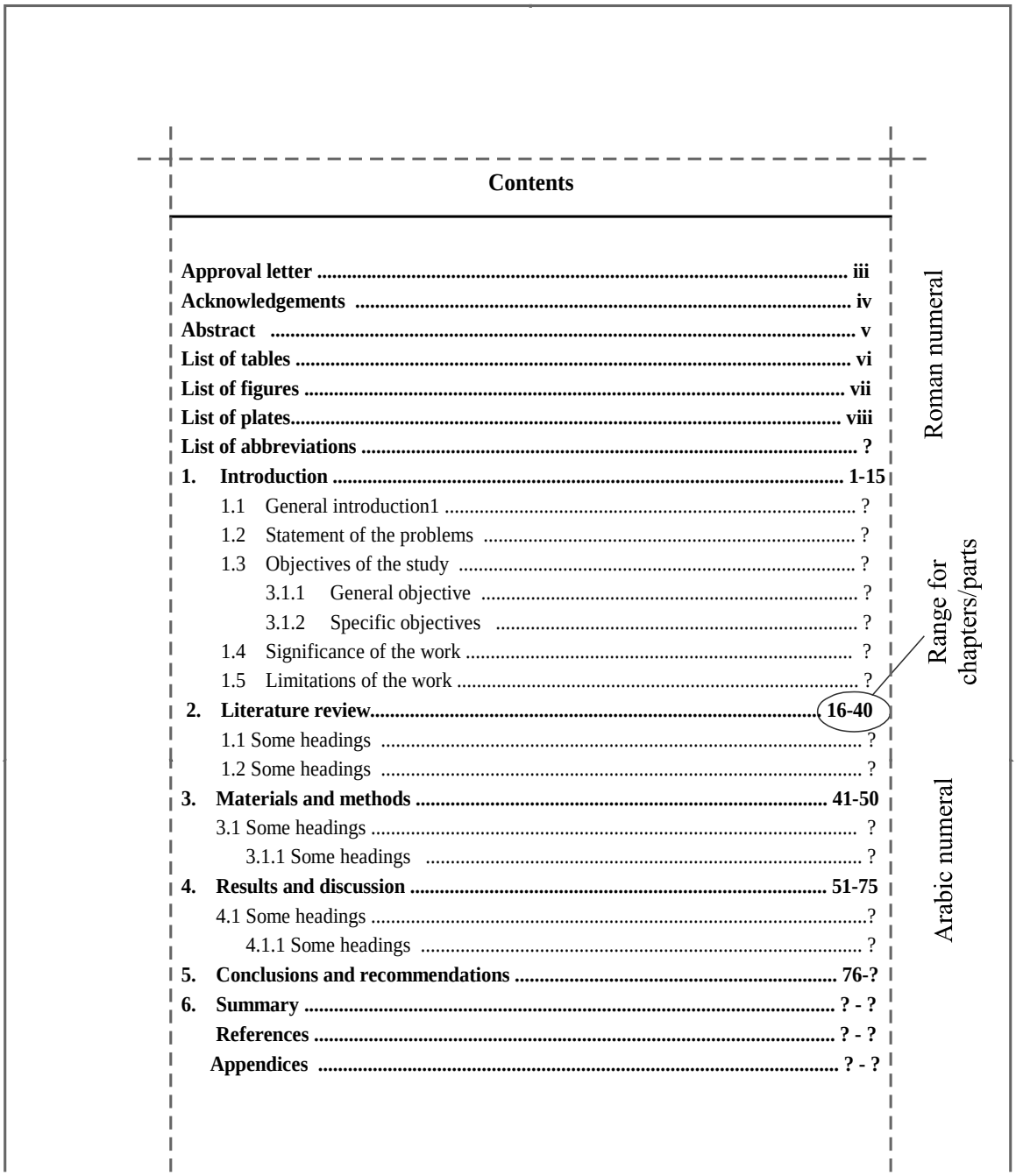
A specimen of abstract



6. Contents

The heading 'content' should be of 14 pt; Bold; Center-aligned, and should be followed by a **solid line** as shown below. The preliminaries (from approval to list of abbreviations) should be 12 pt; Bold; Left-aligned, and the corresponding page number should be given in Roman numerals (i, ii, iii,…). All main headings should be typed using 12 pt bold and should have their starting and ending page numbers in Arabic numerals (e.g., 10 – 20). All sub-headings should be of 12 pt; Normal, and be numbered in Arabic numerals (1,2,3,…).

A specimen of contents



7. List of Tables

List of Tables should be given on a separate page. Use Arabic numerals for numbering Tables. The heading 'List of Tables' should be in Title case, 13 pt Bold, and Center-aligned. The Table No., Title and Page No. in the top row of the table should be 12 pt Bold and the rest should be 12 pt Normal.

A specimen of list of Tables

List of Tables

8. List of Figures

List of Figures should be given on a separate page. Use Arabic numerals for numbering Figures. The heading 'List of Figures' should be in Title case, 13 pt Bold, and Center-aligned. The Figure No., Title and Page No. in the top row should be 12 pt Bold and the rest should be 12 pt Normal (except in certain cases such as Binomial nomenclature).

A specimen of list of Figures

List of Figures

9. List of Plates

List of Plates should be given on a separate page. Use Arabic numerals for numbering Plates. The heading List of Plates should be in Title case, 13 pt Bold and Center-aligned. The Plate No., Title and Page No. in the top row should be 12 pt Bold and the rest should be 12 pt Normal (except in special cases, such as vernacular names, etc.)

A specimen of list of Plates

List of Plates

10. List of abbreviations

List of abbreviations should be given on a separate page. The heading List of Abbreviations should be in Title case, 13 pt Bold and center-aligned. The Abbreviations and the Full form in the top row should be 12 pt Bold and the rest should be 12 pt Normal.

The Table itself should be left-aligned and the list should be alphabetically ordered. Avoid common notations such as °C, kg, mg, etc.

A specimen of list of abbreviations

List of Abbreviations

Abbreviation	Full form
ρ°	Complete elimination of mitochondrial DNA
°Bx	Degree brix (measure of % soluble solids, m/m)
abv	Alcohol by volume
ANOVA	Analysis of variance
AOAC	Association of Official Analytical Chemists
DOE	Design of experiment
DOG	2-Deoxyglucose (analog of glucose)
FSSAI	Food Safety and Standards Authority (India)

11. Part I: Introduction

A clear introductory statement should be given by citing appropriate references with importance and objectives of the research. It should show how the present study aroused from contradiction and inadequacies of past research. It should stimulate the reader's interest. This part should include (a) general introduction, (b) statement of the problem, (c) objectives of the study (d) significance of the study, and (e) limitations of the study as per the following specification and specimen.

As mentioned earlier, the line spacing should be 1.5 pt. Use the 'line and paragraph spacing option' menu in MS-Word to add 10 pt or 12 pt space either before or after paragraph (*NOT* both).

Contents	**Specifications**
Main headings	
Part I	14 pt; Bold; Center-aligned
Introduction (the heading)	13 pt; Bold; Center-aligned below the Part I
Sub-headings	12 pt; Bold; Sentence case
Text (the body)	12 pt; Sentence case, 1.5 line spacing, no indent or tab in the starting paragraph
Paragraph	Maximum of 15 lines, paragraph separation by 10 or 12 pt before (or after) but *NOT* both.

A specimen of Part I

Part I
Introduction

1.1 General introduction

Murcha, an amylolytic starter cake used for traditional alcoholic fermentations, is prepared by incorporating a wide variety of wild plants in cereal flours (KC *et al*., 1999). *Murcha* and similar other amylolytic starters contain yeasts, molds and lactic acid bacteria and are used for the preparation of a wide variety of cereal beers (cloudy extract, along with live yeasts) and cereal wines (clear product) (Lee, 1999). These show that the essential organisms of starter cultures have very important role in traditional brewing.

The brewing potential of murcha yeasts has been studied by several workers, including KC *et al*. (1999) and Rai and Subba (2004). However, there is no report of researches done on improvement of the isolated yeast strains for improving the brewing property. Literatures on protocols for the improvement of yeast strains abound (Bridges, 1976; Bacila *et al*., 1978; Chambers *et al*., 2009; Reed and Nagodawithana, 1991; Walker, 1998; Smith and Burke, 2014; Steensels *et al*., 2014) but they generally deal with only 'culture' or laboratory yeast species, *Saccharomyces* in particular.

Other paragraphs .....

1.2 Statement of the problem

Commercial yeasts used today are highly improved eneuploid/polyploid strains (Berry *et al*., 1987, Reed and Nagodawithana, 1991) but they have all been developed/improved from the enormous pool of wild (feral) strains found in berries, fruits and starters. In Nepal and the adjoining neighboring countries, amylolytic starters are the most extensively used sources of fermentative yeasts for the production of traditional alcoholic beverages. (KC et al, 2004).

Other paragraphs .....

12. Part II: Literature review

Only the information relevant to the present study should be included in this part and should be precise and clear. Main heading, sub-headings and texts should be typed as specified in the Part I.

All figures, Tables, Plates etc., cited in the text should accompanied with their sources on the right-hand side beneath their positions.

As mentioned earlier, the line spacing should be 1.5 pt. Use the 'line and paragraph spacing option' menu in MS-Word to add 10 pt or 12 pt space either before or after paragraph.

A specimen of Part II

Part II

Literature review

2.1 Food fermentation

Food fermentations are noted for the creation of a multiplicity of aromas, flavors and textures from a single starting material (Owens, 2015). Asia in particular has a very rich food heritage, the food and dietary habits representing those of nearly 60% of the world population (Liu *et al*., 1999). Most researches on fermented foods are therefore focused on the Asian fermented foods.

Despite long history of food fermentations in Southeast Asia, they have received relatively little attention, particularly since 1977, from the indigenous scientific establishments (Owens, 2015). Even where research has occurred, there seems to be predilection to report findings at conference and in reports that are not widely disseminated rather than as peer-reviewed international scientific journals. This hampers research progress and does not provide encouragement to others to undertake research in the area. Consequently, many of the foods remain as artisanal products produced by small-scale backyard producers (Owens, 2015).

Other paragraphs .....

2.3 Alcoholic beverages

Description (first paragraph) .....

Other paragraphs .....

2.3.1 Traditional alcoholic beverages: the Nepalese perspective

In traditional alcoholic fermentation process, the malting process is rarely or never used for alcohol production in the Himalayas. Wine making is also not the tradition in the Himalayas, since fruits are eaten directly without extracting them into juice or fermenting them into wines.

13. Part III: Materials and methods

Describe sufficient detail of the materials and methods so that the work can be repeated. Well known operations need not be described in detail. Do not describe the reagents and apparatus/equipment found in the laboratory and used for routine purpose. The nomenclature, the source of materials and equipment used, with details of the manufacturers in the parentheses, should be clearly mentioned. The details of statistical tests used and the level of significance should be stated. If more than one test is used it is important to indicate which groups and parameters have been subjected to which test.

Main heading, sub-headings and texts should be typed as specified in the previous parts.

As mentioned earlier, the line spacing should be 1.5 pt. Use the 'line and paragraph spacing option' menu in MS-Word to add 10 pt or 12 pt space either before or after paragraph.

A specimen of Part III

Part III

Materials and methods

3.1 Materials

Description .....

3.2 Methods

Description .....

3.2.1 Experimental procedure

Description .....

3.2.2 Analytical procedure

Description .....

3.2.3 Sensory analysis

Description .....

3.2.4 Statistical method

Description .....

14. Part IV: Results and discussion

A brief description about the study should be given prior to going into the results and discussion. The results should be presented in logical sequence in the text with appropriate references of Tables or Figures. It should be comprehensible and coherent on its own. Report any negative results which could be important to other workers. The data given in Tables or Figures should not be repeated in the text. The data should not be presented in both tabular and graphic forms. Simple data may be given in text itself instead of Figures or Tables. It is important to discuss the new and significant observation in the light of previous work. Write your text in relation to the Tables and Figures and draw the reader's attention to the main points of your observations as interestingly as possible. Instead of writing results of experiment A are given in Table 1, write Table 1 shows that …..

Assess the validity of your results, comment on their significance, and relate them to previous work. Do not simply repeat, in a different order. Do not conceal negative results or discrepancies between your own and that of others; try instead to explain them, or else admit your inability to do so. Criticize the scientific basis of other people's work when you feel it necessary to do so, but not attack the authors personally. Be absolutely accurate when you describe or quote from other people's work. Discuss also the weaknesses or pitfalls in the study.

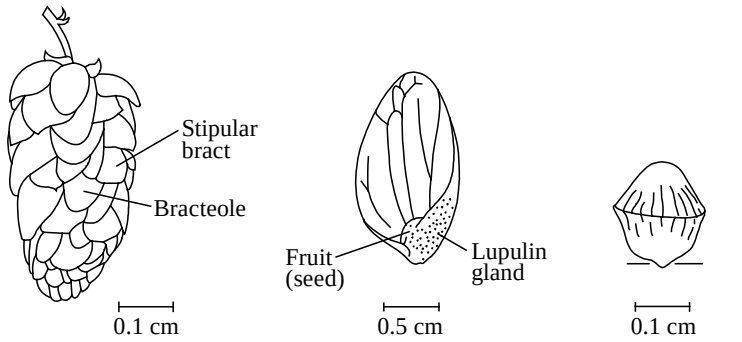
Each Table must be self-explanatory and presented in such a way that they are easily understandable without referring to the text. A short description about the Table and Figure must be provided before presenting or dealing with them. Without such cross-referencing, Tables and Figures become 'ORPHAN', and thus do not make much sense. Each Table and Figure should be numbered consequently with Arabic numerals. It is also important to mention whether the given values are Mean, Median, Mean ± SD or Mean ± SEM. Statistical analogy or differences among the values must be shown by using appropriate superscripts.

Do not put more than two Tables or Figures in a page.

A specimen of cross-referencing and acknowledgement of source

Hops as used in brewery are dried cones of female hop plants Humulus lupulus (Fergussen, 1998). Fig. 2.1 shows the anatomy of hop cone.

Cross-reference



Source: Sullivan (2001)

Fig. 2.1 Anatomy of hope cones

A specimen of Part III

Part IV
Results and discussion

Ten different sites (Saangu, Dandaghopa, Panmaara, Belbari, Laxmimarga, Dhankuta, Letang, Kerabari, Bishnupaduka, and Udayapur) representing 5 districts (Sunsari, Dhankuta, Morang, Udayapur and Taplejung) of Eastern Nepal were surveyed and *murcha* samples collected for screening of fermentative yeasts and subsequent UV-mutation study. The findings are described in the sections to follow.

4.1 Screening of *murcha*

Rai (2006) mentions that the quality of *murcha* can only be as good as the essential microorganisms it harbors. Therefore the collected *murcha* samples were first tested for suitability by inoculating cooked rice to produce *jand*. This step was also thought necessary to avoid the screening load.

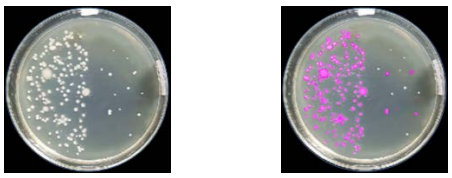
Other paragraphs and sections.....

.....

.....

4.7 Replica plating and selection of RDMs

The replica plating as described in Part II followed by TTC overlay test for the presence of respiratory-deficient mutant produced plates as shown in Fig. 4.9. Of the survived colonies, an average of 22% colonies were found to be respiratory-deficient.



(a) (b)

Fig. 4.9 TTC overlay test for the presence of RDMs. (a) before TTC overlay and (b) after TTC overlay

Citation should be present in literature review also

4.5 Characterization of the yeast isolates

The yeasts isolated from *murcha* samples from Laxmimarga and Udayapur were identified to be strains of *Saccharomyces cerevisiae*. The KEYS used for the identification (Harrigan and McCance, 1976; Kurtzman *et al*., 1998) are given in Appendix. The photomicrographs (1000×) of the yeast cells are shown in Fig. 4.4. The result of sugar assimilation and fermentation test is shown in Table 4.3. The result of auxanography is shown in Fig. 4.5.

Cross-referenced elsewhere

Cross-ref. to Table

Cross-ref. to Figure

Table 4.3 Observation of sugar assimilation and fermentation

Yeast \ Test sugar	Fermentation							Assimilation						
	Glucose	Galactose	Sucrose	Maltose	Lactose	Raffinose	Xylose	Glucose	Galactose	Sucrose	Maltose	Lactose	Raffinose	Xylose
S. cerevisiae (KEY)	+	v	+	v	-	+	-	+	v	+	+	-	+	-
Udayapur yeast	+	v	+	v	-	+	-	+	v	+	+	-	+	-
Laxmimarga yeast	+	-	+	v	-	+	-	+	-	+	+	-	+	-

The notations used in Table 4.3 are standard notations used in auxanographic studies. The explanation of the notations is as follows:

+: growth/fermentation observed

-: growth/fermentation not observed

v: variable (growth/fermentation may or may not be observed)

Udayapur yeast Laxmimarga yeast

Fig. 4.4 Yeast isolates (1000×) from *murcha*

Examples of Table and Figures

Make sure that the font is consistent with the text (Times New Roman, 12 pt). Use following guideline for the construction of graphs:

- *Legend:* Top
- *Marker fill:* Black
- *Marker option:* Built-in, size 4 pt
- *Marker line color:* Solid line, black
- *Marker line width:* 1.25 pt
- *Line color:* Solid line, black
- *Line width:* 1.25 pt
- *Line style:* Regular or dash
- *Error bars:* Solid line, back, 0.75 pt
- *Major tick marks:* Outside
- *Minor tick marks:* Inside
- *Height to width ratio:* ~ 3:4
- *Graph/diagram border:* None
- *Axes:* 1.25 pt, solid line, black

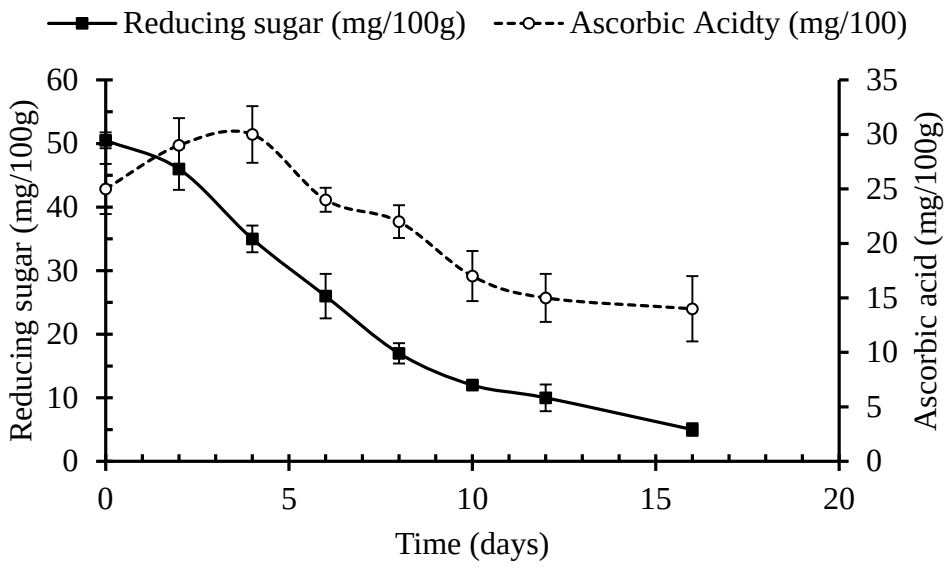


Fig. 4.4 Reducing sugar and ascorbic acid content of abcdxyz berries as affected by storage time

Plotted values are means of 6 replicates. Vertical error bars represent ± standard deviations

More examples

For bar diagram / histogram, use:

- *Legend:* Top
- *Fill:* Pattern* (do not use color)
- *Border for bars:* 0.75 pt, solid line, black
- *Diagram border:* None
- *Font:* 12 pt Times New Roman (consistent with the text font)
- *Major tick marks:* Outside
- *Minor tick marks:* Inside
- *Height to width ratio:* ~ 3:4
- *Axes:* 1.25 pt, solid line, black

** In Office 2007, this feature (pattern fill) is missing. However, you can use Office 2003 and 2010 for the same. Alternatively, you can download plugins for use in Office 2007 but the redo/undo feature will not work.*

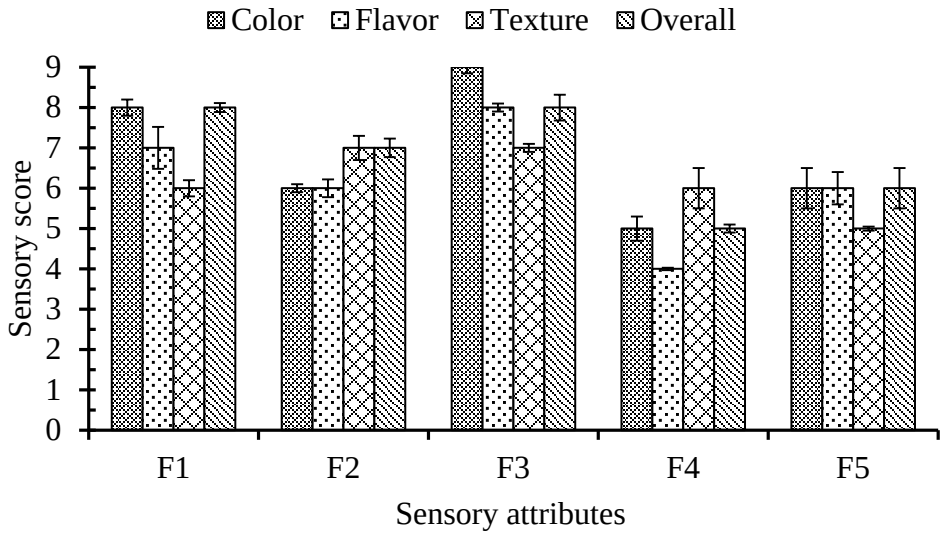


Fig 4.5 Mean sensory scores of formulated food

F1, F2, F3, F4, F5 denote formulation with 5, 7.5, 10, 12.5 and 15% fat, respectively. Vertical error bars represent ± standard deviation of scores given by 9 panelists.

For response surface plots, use wire frame view (as shown in the following page). Carry out editing with suitable software to produce consistent font and size.

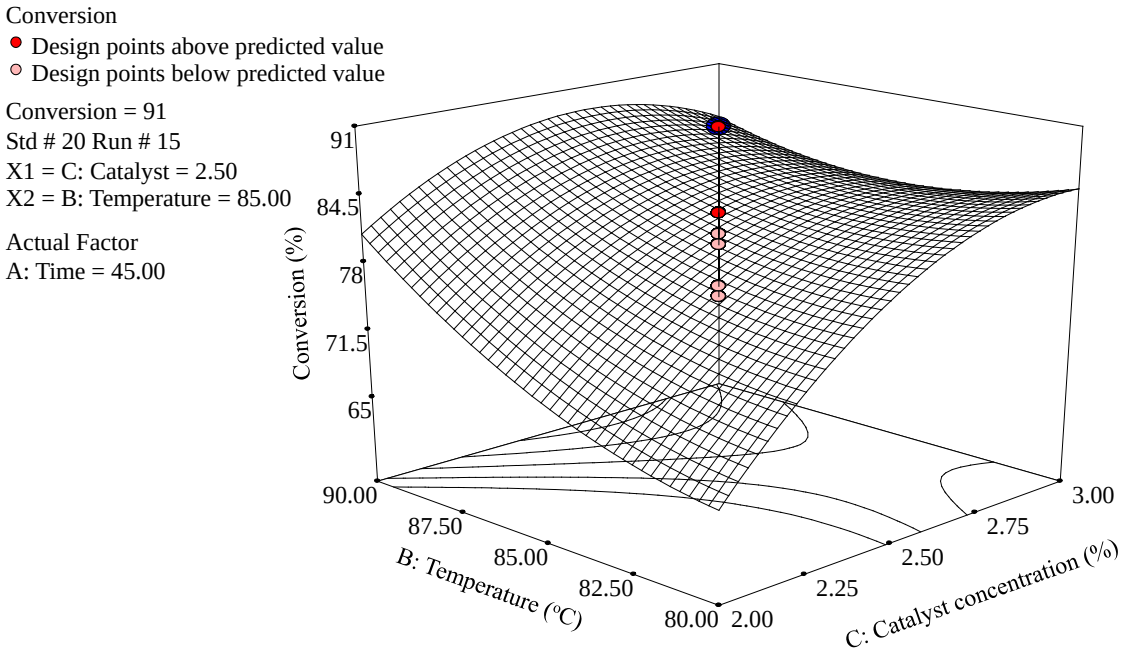


Fig. 4.5 Response (conversion) surface as a function of concentration and temperature

Examples of Plates and Photographs

Use following guidelines for Plates:

- Center-aligned
- Appropriate caption (a descriptive title) at the bottom (center-aligned)
- Acknowledgement source (if necessary)

Source: Wikipedia (2010)
Not as "Source: (Wikipedia, 2010)"

Plate 2 Trained panelists carrying out sensory analysis

15. Conclusions and recommendations

Avoid unqualified statements and conclusions not completely supported by the data. Repetition of information given under *Introduction* and *Results* should be avoided. Conclusion must be drawn considering the strengths and weaknesses of the study. Make sure that conclusions drawn tally with the objectives stated under *Introduction*.

Recommendation is the application of the results and/or investigator(s) view for further extensive work of the present study. It should not be more than one page.

16. Summary

Maximum of one page for B. Tech. and two pages for M. Tech. (Food Technology) dissertation.

17. References

All the ideas and arguments that we use in writing reports, dissertation, essay, etc., need to be supported by reference(s) to other published work. Referencing is therefore an integral part of any publication, research work, or report.

Referencing is a standardized way of acknowledging the sources of information and ideas that you have used in your document. The primary reasons for referencing are to (i) avoid plagiarism, (ii) verify quotations, and (iii) enable readers to follow up what you have written and locate the cited author's work.

Sometimes, students get confused over the terms '*reference list*' and '*bibliography*'. A reference list contains details of only those books, articles, web pages, etc., that are cited in the text of the document. A bibliography includes all sources consulted for background or further reading. Bibliography (or '*Further Reading*') does not require 'in-text citation'. In thesis/dissertation, we use reference, and NOT bibliography.

Students also sometimes mix up the terms 'citation' and 'reference'. They are similar, but not the same. Citations are references that appear in the text (the body of the manuscript). A citation is also called '*in-text citation*' or '*parenthetical citation*'. On the other hand, references are the detailed list of bibliographic information of the cited work. A reference without the corresponding in-text citation does not make much sense. Such a reference simply becomes a bibliography.

Students are also confused over the terms '*reference type*' and '*reference style*'. While writing, we use a number of various types of sources of information. Each of these source types constitutes '*reference type*' (e.g., thesis/dissertation, journal article, newspaper, documentary, etc.). In general, the format for each 'reference type' is unique in some way. A few 'reference types' have a common generic format, though. The collection or set of all the 'reference types' (along with the given format) is called '*reference style*' (also simply called '*styles*' or '*output styles*'). Most 'reference styles' have published guidelines called '*style manual*'.

For B. Tech and M. Tech (Food) dissertation at Central Campus of Technology (CCT), a customized style called “CDFT” has been prepared. This style covers around 33 reference types, viz.,

1. Booklet or leaflet, if author is not known
2. Chapter of book
3. Computer software and manual
4. Journal article
5. Non-English alphabet
6. Non-English non-alphabet
7. Official organizations
8. Paper presented
9. Patent
10. Proceedings
11. Thesis/dissertation
12. Website (Internet)
13. Abstract
14. Audio visual material
15. Book
16. CD/DVD ROMS
17. Database (Access, Excel, etc.)
18. Dictionary
19. Encyclopedia
20. Government document
21. Magazine article
22. Map
23. Newsletter
24. Newspaper article
25. Personal communication
26. Press release
27. Report
28. Unpublished work
29. Cited articles
    a. Journal in journal
    b. Thesis/dissertation in journal
    c. Journal in thesis/dissertation
    d. Journal in book

The CDFT style can also be used through EndNote® (a popular referencing software) after the CDFT.ens file is added to the existing 6,500-plus styles. In the latest update of the CDFT style, provisions for adding DOI (Digital Object Identifier) and ISBN (International Standard Book Number) have also been made.

DOI is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a persistent link to its location on the Internet. The publisher assigns a DOI when your article is published and made available electronically. All DOI numbers begin with a 10 and contain a prefix and a suffix separated by a slash. The prefix is a unique number of four or more digits assigned to

organizations; the suffix is assigned by the publisher and was designed to be flexible with publisher identification standards. For example: https://doi.org/10.1000/182

ISBN is a unique numeric commercial book identifier. An ISBN is assigned to each edition and variation (except reprints) of a book. The ISBN is 13 digits long if assigned on or after 1 January 2007, and 10 digits long if assigned before 2007.

Standard abbreviations for journals

It is important that standard abbreviation you use only standard abbreviations of the journal names. Some examples are given below:

Academy = Acad.	Clinical = Clin.
Accounts = Acc.	Communications = Commun.
Advances / Advanced = Adv.	Comparative = Comp.
African = Afr.	Compounds = Compd.
Agriculture = Agric.	Computer = Comput.
American = Am.	Contamination = Contam.
Analytical = Anal.	Contributions = Contrib.
Annals = Ann.	Coordinate = Coord.
Annual = Annu.	Critical = Crit.
Applied = Appl.	Current = Curr.
Aquatic = Aquat.	Design = Des.
Archives = Arch.	Development(al) = Dev.
Association = Assoc.	East = E.
Bacteriology = Bacteriol.	Ecology / Ecological = Ecol.
Bioactive = Bioact.	Education = Educ.
Biochemical /Biochemistry = Biochem.	Elements = Elem.
Biogenic = Biog.	Energy = Energy.
Biology = Biol.	Engineering = Eng.
Biophysics = Biophys.	Environment = Environ.
Bioscience = Biosci.	Enzymology = Enzymol.
Biotechnology = Biotechnol.	European = Eur.
Botany = Bot	Experimental = Exp.
British = Br.	Fermentation = Ferment.
Bulletin = Bull.	Food = Food
Catalysis = Cat.	Function = Funct.
Cellular = Cell.	General = Gen.
Chemical / Chemistry = Chem.	Geochemistry / Geochemical = Geochem.
Chemotherapy = Chemother.	Hazardous = Hazard.
Chinese = Chin.	History = Hist.
Hygiene = Hyg.	Polymer = Polym.
Indian = Indian	Proceedings = Proc.
Industrial = Ind.	Processing = Process.
Inorganic = Inorg.	Products = Prod.

Institute = Inst.	Progress = Prog.
Instruments / Instrumental = Instrum.	Protein = Protein
Integrated = Integr.	Purification = Purif.
International = Int.	Quality = Qual.
Japan = Jpn.	Radiation = Radiat.
Journal = J.	Reactive / Reaction = React.
Kinetics = Kinet.	Regulatory = Regul.
Laboratory = Lab.	Report = Rep.
Letters = Lett.	Research = Res.
Magnetic = Magn.	Resonance = Reson.
Manufacturing = Manuf.	Resources = Resour.
Marine = Mar.	Review = Rev.
Material = Mater.	Science = Sci.
Medical / Medicinal = Med.	Separation = Sep.
Microbiology = Microbiol.	Series = Ser.
Mini-reviews = Mini-Rev.	Society = Soc.
Molecular = Mol.	Solvent = Solvent
Natural = Nat.	South = S.
Neuroscience = Neurosci.	Structural = Struct.
North = N.	Studies = Stud.
Nuclear = Nucl.	Surface = Surf.
Nutrition = Nutr.	Symposium = Symp.
Organic = Org.	Synthetic = Synth.
Pakistan = Pak.	Technology = Technol.
Pesticide = Pestic.	Temperature = Temp.
Pharmaceutical = Pharm.	Theoretical = Theor.
Pharmacology = Pharmacol.	Thermal = Therm.
Physical / Physics = Phy.	Toxicology = Toxicol.
Physiology = Physiol.	Ultrasonics = Ultrason.
Plastics = Plast.	West = W.

Examples of references in "CDFT" style

A few references below have been annotated for the sake of clarity.

1. Abstract

Poudel, R. P. (1990). The role of indigenous foods in improving food security [Abstract]. Society for Food Security Abstracts. **17**, 230. Retrieved from http://fictitious.com /research/abstracts /123456.html. [Accessed 17 May, 2008].

2. Audio/Video material

DFTQC/WHO. (2006). Role of safe food on human health [Documentary, 55 min]. Department of Food Technology and Quality Control. Babarmahal, Kathmandu, Nepal. Retrieved from DFTQC Head Office. [Accessed 21 June, 2010].

3. Book

Philip, R. A. (2005). "Chemistry and Technology of Soft Drinks and Fruit Juices" (2nd ed.). Blackwell Publishing. State Avenue, USA.

4. Book or leaflet, if author is unknown or only corporate author is available

Anonymous. (2008). International processed foods [Brochure No. 2]. pp. 4-8.

Anhydro. (2008). Fluid bed technologies [Brochure]. pp. 3-5.

5. CD/DVD ROMS

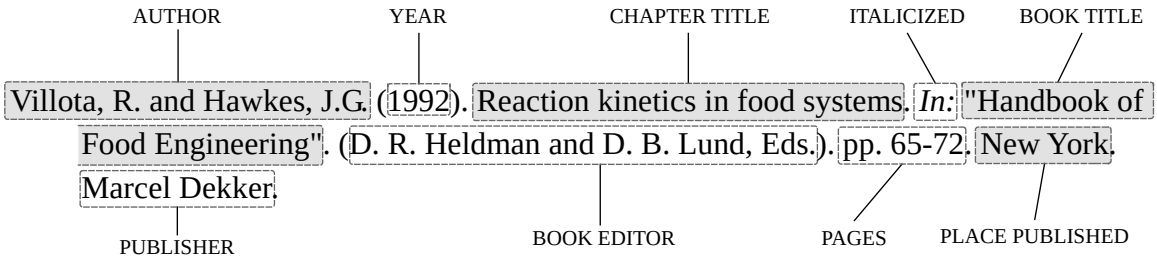
Encarta Yearbook. (1996). New law removes farming restrictions, price supports. Microsoft Encarta 2009 [DVD-ROM]. Microsoft Corporation. Redmond, W.A.

Hamid, A. D. (1992). Sudan's food heritage. Community Development Library [CD-ROM]. Ver. 2.0. Greenstone Digital Library. New Zealand.

6. Chapter of book

Ponting, J. D. (1960). The control of enzymatic browning in fruits. *In:* "Food Enzymes". (H. W. Schultz, Ed.). p. 105. Connecticut. AVI Publ. Co.

Villota, R. and Hawkes, J. G. (1992). Reaction kinetics in food systems. *In:* "Handbook of Food Engineering". (D. R. Heldman and D. B. Lund, Eds.). pp. 65-72. New York. Marcel Dekker.



Taylor, J. R. N. and Emmambux, M. N. (2008). Gluten-free foods and beverages from millets. *In:* "Gluten-free Cereal Products and Beverages" (1st ed., Vol. 1). (K. A. Elke and D. B. Fabio, Eds.). pp. 136-138, 140. Amsterdam. Academic Press.

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Bhattarai, R. R. (2011). Phenolic components in wild pear (*Pyrus pashia*) of Nepal. M. Tech. (Food) Thesis. Tribhuvan Univ., Nepal. [Cited in S. K. Mishra, D. B. Karki and K. B. Subba. (2011). Radical scavenging property of wild pear (*Pyrus pashia*) wine. *Int. J. Antioxidants*. **25** (2), 144-148].

Journal in journal

Joshi, S. and Agte, C. V. (1995). Comparative in vitro binding of mineral by the fibers from pulses, cereals and vegetables. *J. Food Sci. Technol.* **32** (3), 476-481. [Cited in A. Kala and J. Prakash. (2007). Insoluble dietary fiber content in vegetables cooked by different methods. *J. Food Sci. Technol. Nepal*. **3**, 77-82].

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Francisco, M. L. L. D. and Ressurrection, A. V. A. (2009). Total phenolics and antioxidant capacity of heat-treated peanut skins. *J. Food Composition and Anal*. **22**, 16-24. [Cited in R. R. Bhattarai. (2011). Phenolic components of wild pear (*Pyrus pashia*) of Nepal. M. Tech. Thesis. Tribhuvan Univ., Nepal].

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Dhungana, P. K. (2009). Textured vegetable protein for vegetarian sausage. *Int. J. Meat Analog*. **45** (2), 59-63. [Cited in D. R. Acharya, P. Mishra and N. K. Gautam. (2010). "Sausage for the Vegetarian: A Novel Concept" (2nd ed.). United Publishers, Kathmandu, Nepal].

8. Computer software and manual

Payne, R. W., Murray, D. A., Harding, S. A., Baird, D. B. and Sautar, D. M. (2009). Genstat for Windows (12 edition) Introduction (12th ed.). Ver. 12.1.0.3338. Win OS. VSNL International. Hemel, Hempstead.

SPSS. (1993). SPSS for Windows, Base System User's Guide. Rel. 6.0. Win OS. Chicago, IL.

9. Database (Access/Excel, etc.)

Rai, B. K. (1998). Food Composition Table: Nepalese Foods (Edition/Version 1.0). [MS Access 2000]. Retrieved from Food Technology Instruction Committee (Dharan) Archive. [Accessed 25 August, 2010].

10. Dictionary

Kaushik, R. K. and Yadav, M. S. (1996). Anmol Dictionary of Chemistry (1st ed.). Anmol Publications Pvt. Ltd. New Delhi-110 002.

11. Encyclopedia

Caballero, B., Allen, L. and Prentice, A. (2005). Encyclopedia of Human Nutrition (2nd ed.). Elsevier Academic Press. Amsterdam.

12. Government documents

DFTQC. (2010). "Annual Bulletin - 2003/2004". Department of Food Technology and Quality Control (Ministry of Agriculture and Co-operatives), Nepal. pp. 14-18. Retrieved from http://www.dftqc.gov.np/noticedetail.php?id=11. [Accessed 29 February, 2011].

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13. Journal article

Verma, P., Agrawal, U. S., Sharma, A. K. and Sarkar, B. C. (2005). Optimization of process parameters for the development of a cheese analog from pigeon pea (*Cajanus cajan*) and soymilk using response surface technology. *Int. J. Dairy Technol.* **58** (1), 54-57.

14. Magazine article

Oli, D. (2011). Healthy meat healthy Dashain [Nepali]. *Women*. (9-12-108). Ekantipur .com. Retrieved from http://www.ekantipur.com/en/. [Accessed 22 September, 2011].

15. Map

Thakur, N. C. (2011). Map of Nepal: Jhapa district. ncthakur.itgo.com. Retrieved from http://ncthakur.itgo.com/districtmaps/jhapa_district.htm. [Accessed September 22, 2011].

16. Newsletter

Rai, B. K. and Ali, G. (2009). Glycemic index: the right way to choose food [Newsletter]. Nepal Food Scientists and Technologists Association - Eastern Chapter (NEFOSTA-EC). **5** (3), 1-4. Retrieved from http://nefosta-ec.netfirms.com/downloads/newsletter.html. [Accessed 12 May, 2009.]

Thapaliya, P. and Shrestha, R. K. (2008). Lime and cauliflower by-products: options for value addition [Newsletter]. Clean Energy Nepal. **19** (2), 2, 4-6.

17. Newspaper article

Roy, R. (2011). Food insecurity in Humla: Myth or reality? *Nepalnews.com: news from Nepal as it happens*. Mercantile Communications Pvt. Ltd. Retrieved from http://www.nepalnews.com/archive/2011/others/guestcolumn/mar/guest_columns_05.php. [Accessed 2 September, 2011].

Katawal, S. B. (2009). Worsening food security in Nepal in the recent years. *The Kathmandu Post*. Kantipur Publication. 14 October, 2009. pp. 2, 4.

18. Non-English alphabet journal

Dublin, P. (1981). Embryogenèse somatique directe sur fragments de feuilles de cafeiérsarabusta. *Café Cacao Thé*. **25** (4), 237-242.

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Fujimara, T. and Kugimaya, M. (1994). Effects of thermal pre-treatment on gelatinization of starch cotyledon cells of adzuki bean. *Nippon Shokuhin Kogyo Gakkishi*. **41** (4), 206-209 (in Japanese).

20. Official organizations

AOAC. (1990). "Official Methods of Analysis" (15th ed.). Arlington, VA, USA. Association of Official Analytical Chemists. pp. 912-918.

APHA. (1998). "Standard Methods of Examination of Water and Wastewater" (20th ed.). Washington-DC. American Public Health Association. p. 8.31.

21. Paper presented

Gardner, J. W. (1993). Intelligent chemosads for artificial odor-sensing of coffees and lager beers. Presented at 11th Symposium on Olfaction and Taste. Sapporo, Japan. July 12-16. p. 30.

Udas, S., Rai, B. K., Khatiwada, P. P., Gurung, M. and Thapa, R. (2004). Assessment of post-harvest handling system of vegetables in the eastern hills of Nepal. Presented at 5th International Postharvest Symposium. Verona, Italy. June 6-11. p. 124.

22. Patent

Wilk, R. (1997). Process of converting food waste to rehydratable edible food. US Patent 5,702,746 (Issue Date: 30 December, 1997). pp. 2-4. Retrieved from http://www. freepatentsonline . com/5702746. [Accessed 13 January, 2010].

23. Personal communication

Mishra, A. (2011). Personal communication [Telephone]. 23 August, 2011.

24. Press release

NPC. (2011). Millennium Development Goals: Needs Assessment for Nepal 2010 Launched [Press release]. National Planning Commission. Retrieved from http://www. npc.gov.np/uploads/news/file/20110924105119.pdf. [Accessed 27 August, 2011].

25. Proceedings

Barbolt, T. A. and Abraham, R. (1978). The effect of bran on dimethylhydrazine-induced colon carcinogenesis in the rat. *Proc. Soc. Exp. Biol. Med*. **157**, 656-659.

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Limbu Hangsurung, D. K. (2008). Indigenous knowledge of Limbu on ecology, biodiversity and ethnomedicine [Report]. SIRF/RF/07. Social Inclusion Research Fund Secretariat Apprenticeship Grant. Nepal.

Subba, B. R., Limbu, K. P. and Rai, B. K. (2009). Food value of edible molluscs of eastern Nepal [Report]. Nepal Academy of Science and Technology (NAST). Kathmandu, Nepal.

Bhattarai, G. (2008). Current food practice and trade in Dharan Municipality [Report]. Dharan Municipality-FSDC. Nepal. Retrieved from Food Security and Development Center (FSDC) Archive.

27. Thesis/dissertation

Kharel, G. P. (1997). Application of high electric fields for shelf life extension and drying of some fruits and vegetables. Unpublished Ph.D. Thesis. Kagoshima Univ., Japan.

Raut, K. (2006). Study on cooking quality of some of the popular varieties of rice found in Biratnagar. Unpublished B. Tech. Thesis. Tribhuvan Univ., Nepal.

28. Unpublished work (except thesis/dissertation)

Acharya, D. R. and Subba, D. (2010). "Microbiological Analysis of Meat, Fish and Poultry" (2nd ed.). *In Press* Practical manual. Central Campus of Technology, Food Technology Instruction Committee. Nepal.

Rai, B. K. (2009). "Industrial Microbiology" (3rd ed.). *Self-archived* E-book. Central Campus of Technology. Nepal. Retrieved from http://ftech-dept.webs.com/documents/Ind%20micro%203rdedn%20_final_2095_12_12_(small%20size).pdf. [Accessed 12 May, 2009].

Mishra, S. K. (1999). "Chemical test of flexible packaging material". *Self archived* Lecture notes. Central Campus of Technology, Nutrition and Dietetics Instruction Committee. Nepal.

29. Website (internet)

NFPA. (2000). All juices should receive pasteurization of an equivalent heat treatment, NFPA tells FDA. National Food Processors Association. Retrieved from http://207.153.197.248/new%5release00%5F26.html. (Last update 4 April, 2000). [Accessed 13 February, 2001].

An alternative to manual referencing, you may also use EndNote®, a powerful referencing software. The latest version for Windows is EndNote X8

18. Appendices

Appendices (also written Appendixes) should be numbered using upper-case English alphabets and no more than two Appendix Table or Figure should be put in a page.