

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

Prepared by

**Food Technology Subject Committee
Institute of Science and Technology
Tribhuvan University, Nepal**

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General information

1. Unit and nomenclature: Use SI system of unit and IUPAC rule for nomenclature
2. Spacing and font: Unless specified, use 1.5 line spacing and Times New Roman font 12pt
3. Page set up: Top = 3 cm, Bottom = 2.5 cm, Left = 3 cm and Right = 2.5 cm
4. Pagination: Put the page number at the bottom center. Hide the page number on the first page of each part
5. Paper size: A4

Contents of the thesis

The thesis 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
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

Detail of each of the components

1. Cover page

The cover page should contain (a) title of the thesis, (b) name of the student and (c) institutional address as per the following specifications and specimens.

Contents	Specification
Title of the thesis	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

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
Central 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 thesis. 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 acknowledgements

Acknowledgements

I would like to express my sincere

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.....

Date of submission: January 12, 2012

(Laxmi Prasad Devkota)

A specimen of Part IV

Part IV

Results and discussion

A short description about the study

4.1 Effect of sulfur dioxide concentration on the nutritional quality of apple juice

4.1.1 Effect on vitamin C

4.1.2 Effect on reducing sugar

4.2 Effect of storage temperature on the flavor of apple juice

4.3 Effect of packaging material on the shelf life of apple juice

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.

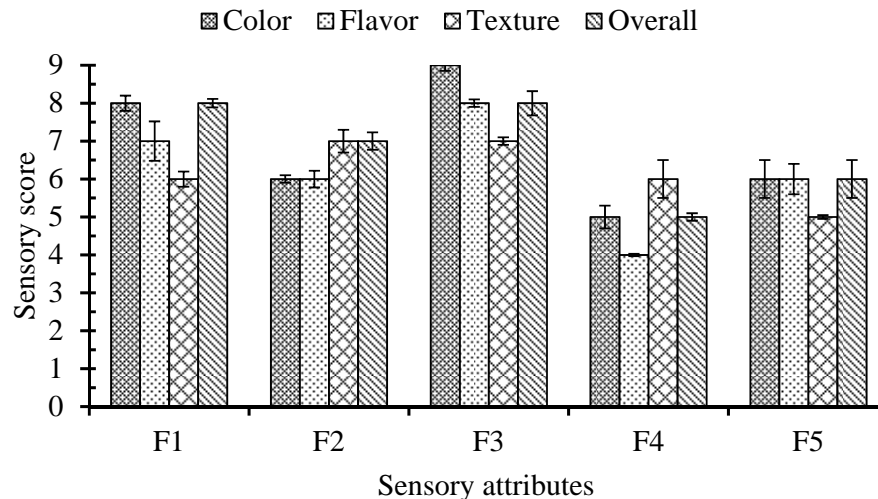


Fig 4.5 Mean sensory scores of formulated food

F1, F2, F3, F4, F5 denote formulation with 5, 7.5, 10, 12.5 and 15% fat, respectively. Vertical error bars represent \pm 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.

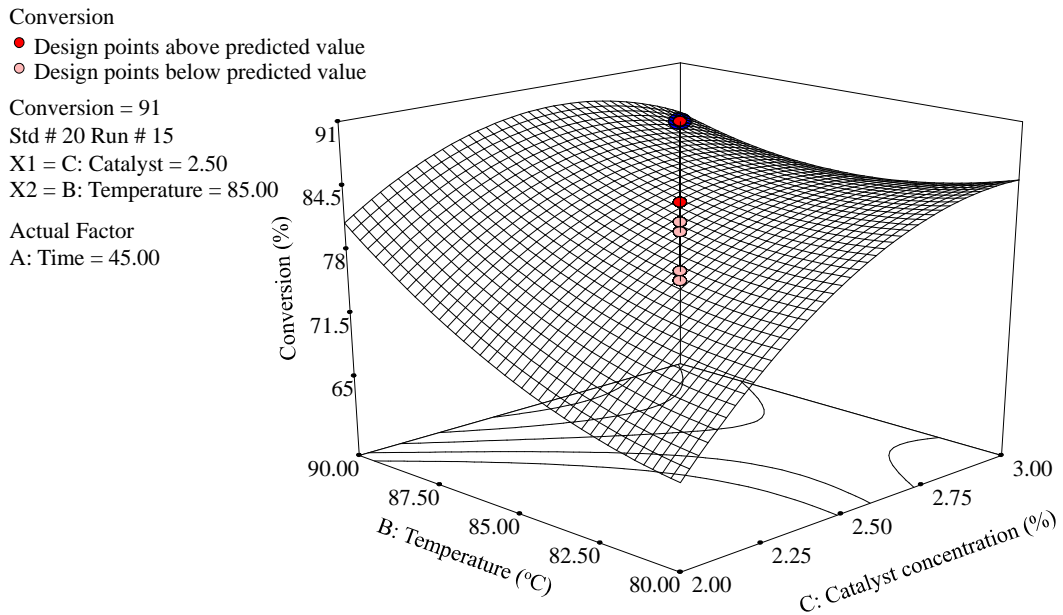


Fig. 4.5 Response (conversion) surface as a function of concentration and temperature

Examples of plates and photographs

Use following guidelines for plates:

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



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 conclusions drawn should 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, thesis, 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, 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), a customized style called “CDFT*” has been prepared. This style covers 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
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 in journal
 - c. Journal in thesis
 - d. Journal in book

* Please note that the Reference Style “CDFT” is the same as the “B Tech Thesis”. Only the name has been changed to make it more general. However, the style “CDFT” has improved field guidelines for adding new references. You can download the new tweak files for CDFT style from:

http://www.4shared.com/rar/ldxuxZEd/EndNote_Tweak_Files.html

For transition from “B Tech Thesis” to “CDFT”, replace your earlier tweak files with the new one. You will also need to copy CDFT.ens to the ‘style’ folder in your installation directory.

Examples of references in "CDFT" style

For detailed description, please download the style manual from

<http://dmccampus.webs.com/apps/documents/>

1. 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.

2. 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.

3. Cited articles

Thesis in journal

Bhattacharai, R. R. (2011). Phenolic components in wild pear (*Pyrus pashia*) of Nepal. Unpublished 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].

Journal in thesis

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. Bhattacharai. (2011). Phenolic components of wild pear (*Pyrus pashia*) of Nepal. Unpublished M. Tech. Thesis. Tribhuvan Univ., Nepal].

Journal in book

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].

4. 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.

5. 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.

6. Non-English alphabet journal

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

7. Non-English non-alphabet journal

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).

8. 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.

9. 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.

10. 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].

11. 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.

12. 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.

13. 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].

14. 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].

15. 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].

16. Book

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

17. 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.

18. 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].

19. Dictionary

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

20. Encyclopedia

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

21. 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].

DFTQC. (2011). "Food Act, 2032 (1967)". Department of Food Technology and Quality Control (Ministry of Agriculture and Co-operatives), Nepal. pp. 34-41. Retrieved from <http://www.dftqc.gov.np/noticedetail.php?id=12>. [Accessed 27 August, 2011].

22. 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].

23. 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].

24. 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.

25. 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.

26. Personal communication

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

27. 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].

28. Report

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.

29. Unpublished work

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](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.

An alternative to manual referencing, you may also use EndNoteX6, a powerful referencing software. The customized style "CDFT.ens" and other tweaks are available at:

http://www.4shared.com/rar/ldxuxZEd/EndNote_Tweak_Files.html

You may need to register as a free member to access it.

18. Appendices

Appendices should be numbered using upper-case English alphabets and no more than two appendix table or figure should be put in a page.