T.C.
MANİSA CELAL BAYAR UNIVERSITY
FACULTY OF ENGINEERING
BIOENGINEERING DEPARTMENT
3 line spaces are left (Times New Roman 14 font size)

COURSE CODE AND NAME
9 line spaces are left (Times New Roman 12 font size)

The report should be written on A4 size paper with a margin of 2.5 cm from the bottom, right and top and 4 cm from the left.

On the cover only, the left margin should be 3 cm.

Binding will be made using coated cardboard cover printed with color printing. Cover color will be white and black spine will not be used.

The same cover will also be used as the inner cover

XXXX INTERNSHIP TITLE XXXXX
XXXXXXXXXXXXXXXXXXXXX
5 line spaces are left (Times New Roman 14 font size)

Name SURNAME
5 line spaces are left (Times New Roman 12 font size)

Supervisor
Assoc. Prof. Name SURNAME
1 line space is left (Times New Roman 12 font size)
Co-supervisor
Assist. Prof. Name SURNAME (WRITTEN IF AVAILABLE)
4 line spaces are left (Times New Roman 12 font size)

MANİSA–2015(written just below the logo)

CONTENT

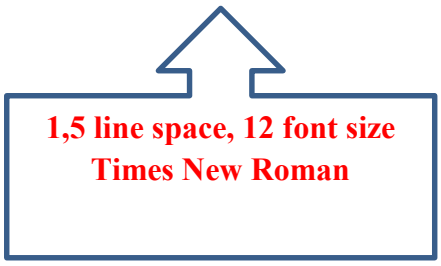
1 line spaces are left (Times New Roman 12 font size)

	Page
CONTENT	I
SYMBOLS AND ABBREVIATIONS INDEX	II
FIGURE INDEX	III
TABLE INDEX	IV
ACKNOWLEDGEMENT	V
TÜRKÇE ÖZET	VI
ABSTRACT	VII
1. INTRODUCTION	1
(The aim of the report should be stated as the last paragraph of the introduction)	
2. GENERAL INFORMATION	35
2.1. Second Order Title	41
2.1.1. Third Order Title	47
3. MATERIAL AND METHODS)	51
3.1. Material	52
3.1.1. Third Order Title	56
3.2. Methods	63
3.2.1. Third Order Title	67
4. RESULT AND DISCUSSION	73
4.1. Second Order Title	77
4.2. Second Order Title	79
4.3. Second Order Title	84
5. CONCLUSION	87
REFERENCES	92
APPENDIX	111
APPENDIX A. (related topic)	113
APPENDIX B. (related topic)	117
APPENDIX C. (related topic)	121
CV	125

SYMBOLS AND ABBREVIATIONS INDEX

1 line space is left (Times New Roman 12 font size)

DAO	Diaminooxidase
DNA	Deoxyribonucleic acid
FDA	Food and Drug Administration
LAB	Lactic acid bacteria
MAO	Monoaminooxidase
RNA	Ribonucleic asit



FIFURE INDEX

1 line space is left (Times New Roman 12 font size)

	Page
Figure 1.1. xxxxxxxxxxxxxxxxxxxxxxx	1
Figure 1.2. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	2
Figure 3.1. xxxxxxxxxxxxxxxxx	24

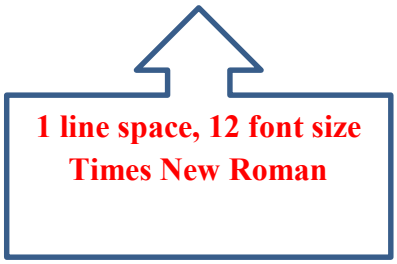


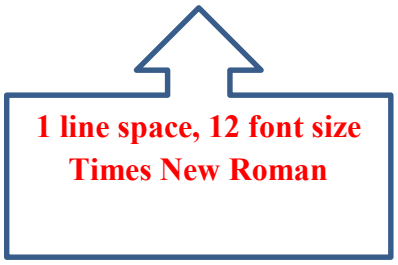
TABLE INDEX

Page

Table 1.1. xxxxxxxxxxxxxxxxxxxxxxxxxxxxx..... 1

Table 1.2. xxxxxxxxxxxxxxxxx..... 2

Table 3.1. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxx xx xxxxxxxxxxxxxxx xxxxxxxxxxxxxxx xxx 17



ACKNOWLEDGEMENT

- 1 line space is left -

I would like to thank my supervisor Prof. XXXXXXXXXXXX, who supported me at every stage of my study and guided me with his knowledge and experience, dear Assoc. Prof. XXXXXXXXXXXX, who has helped me in all difficult stages of my internship period with his knowledge and experience, enlightened me with his experiences and never lacked his support, and I am honored to know him, my dear friend, Food Engineer XXXXXXXXXXX, whose moral support I always felt during my studies, and my family, who supported me financially and morally throughout my education life and were always with me.

Name SURNAME
Manisa, 2017

After the acknowledgment text, 2 lines of space are left and FULL NAME is written.

Indent the beginning of a paragraph (1.25 cm) and leave one line space between paragraphs. Acknowledgments section should be written in Times New Roman font with single line spacing

ÖZET

- 1 satır boşluk bırakılır -

Staj Raporu

- 1 satır boşluk bırakılır -

Xxxxxxxxxxxxxxxxx xxxxxxxxxx Rapor Başlığı

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

- 1 satır boşluk bırakılır -

Ad SOYAD

- 1 line space is left -

Manisa Celal Bayar Üniversitesi
Mühendislik Fakültesi
Biyomühendislik Bölümü

- 1 satır boşluk bırakılır –

Danışman: Doç. Dr. Ad SOYAD

- 1 satır boşluk bırakılır -

II. Danışman: Yrd. Doç. Dr. Ad SOYAD

- 1 satır boşluk bırakılır -

- 1 satır boşluk bırakılır -

Özet iki yana yaslı olarak tek satır aralıklı ve paragraflar arasında bir satır boşluk bırakılacak şekilde yazılmalıdır.

- 1 satır boşluk bırakılır -

Özet iki yana yaslı olarak tek satır aralıklı ve paragraflar arasında bir satır boşluk bırakılacak şekilde yazılmalıdır.

- 1 satır boşluk bırakılır -

Özet iki yana yaslı olarak tek satır aralıklı ve paragraflar arasında bir satır boşluk bırakılacak şekilde yazılmalıdır.

- 1 satır boşluk bırakılır -

Özet iki yana yaslı olarak tek satır aralıklı ve paragraflar arasında bir satır boşluk bırakılacak şekilde yazılmalıdır.

- 1 satır boşluk bırakılır -

Özet iki yana yaslı olarak tek satır aralıklı ve paragraflar arasında bir satır boşluk bırakılacak şekilde yazılmalıdır.

- 1 satır boşluk bırakılır -

- 1 satır boşluk bırakılır -

Anahtar Kelimeler:(en çok 7 tane olmalı ve virgül ile ayrılmalıdır)

- 1 line space is left -

2017, xxx sayfa

ABSTRACT

- 1 line space is left -

Internship Report

- 1 line space is left -

Xxxxxxxxxxxxxxxxx xxxxxxxxxx Tez Adı

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

- 1 line space is left -

Name SURNAME

- 1 line space is left -

Manisa Celal Bayar University

Faculty of Engineering

Bioengineering Department

- 1 line space is left -

Supervisor: Assoc. Prof. Dr. Name SURNAME

- 1 line space is left -

Co-Supervisor: Assoc. Prof. Dr. Name SURNAME

- 1 line space is left -

- 1 line space is left -

The abstract should be written justified, single-spaced and with one line space between paragraphs.

- 1 line space is left -

The abstract should be written justified, single-spaced and with one line space between paragraphs.

- 1 line space is left -

The abstract should be written justified, single-spaced and with one line space between paragraphs.

- 1 line space is left -

The abstract should be written justified, single-spaced and with one line space between paragraphs.

- 1 line space is left -

The abstract should be written justified, single-spaced and with one line space between paragraphs.

- 1 line space is left -

- 1 line space is left -

Keywords:(up to 7 keywords and separated by commas)

- 1 line space is left -

2017, XXX pages

Except for the reference section, the main sections of the report (introduction, literature summary, material-methods, findings-discussion, conclusion and recommendations) should be written in

1. INTRODUCTION

- 1 line space is left -

Tarhana is one of the traditional fermented foods widely consumed in Middle Eastern countries and is of great importance in the dietary habits of Turkish people [1]. The main raw materials used in the production of tarhana are yogurt, tomatoes, peppers and cereals, the types and quantities of which vary from region to region and therefore the composition of tarhana varies according to the ingredients used [2].

- 1 line space is left - (between the paragraphs)

There are two main ingredients used in tarhana making. These are yogurt and grinding. Considering that the biological value of the product is increased as a result of the combination of animal and vegetable proteins and that some bran material from the grinding carries minerals and vitamins to the composition, and that this material contributes to the consumption of pulp food consumption, which is recommended to be 15-20 g per day, the nutritional and metabolic benefits of the product are revealed. As for the fermented identity of the product, the simultaneous fermentation of lactic acid bacteria (LAB) from yogurt with fermentative yeasts from the grinding material contributes to the formation of a unique sour taste and increased digestibility of the product. [3].

- 1 line space is left -

xxx Figure xxx

- 1 line space is left -

Figure 1.1. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx [4]

(if the figure name fits on one line, it should be centered, if not, it should be justified)

- 1 line space is left -

Lactobacillus bulgaricus, *Lactobacillus acidophilus* and *Lactobacillus casei* are decarboxylase positive microorganisms and have been found to play a role in biogenamine formation in previous studies [3]. Şengün [4] reported that tarhana has a very rich LAB flora and LABs involved in fermentation vary depending on the region.

- 1 line space is left -

Yogurt, which is one of our traditional fermented foods and has an important place in our diet, is a fermented food product obtained by lactic acid fermentation of milk with *Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus salivarus* subsp. thermophilus bacteria [5]. Yogurt is one of the most popular fermented dairy products

worldwide and is widely consumed as a healthy food [6]. Yogurt is mainly consumed as a main dish in our country, but it is also consumed as an aperitif food [7].

- 1 line space is left -

Due to the technological processes applied during yogurt production, yogurt has a richer content in terms of protein, fat and mineral substances than the raw material milk. In general, yogurt contains 14-20% dry matter, 2-8% fat, 4-8% protein and 0.8-1.2% mineral substances [8, 9].

- 1 line space is left -

Table 1.1.xxxxxxxxxxxxxxxxxxx [10]

- 1 line space is left -

Sample	Moisture content	Ash content	Protein
R404A	Ab,cc	Ab,cc	Ab,cc
R134A	Cd,ab	Cd,ab	Cd,ab
R407C	Be,dd	Be,dd	Be,dd

The table should be 1 line spaced, all names and values should be centered. If the table name fits on a line, it should be centered, if not, it should be justified

Each new main section must start on a new page

Information on the subject in the form of subheadings can also be given

2. GENERAL INFORMATION

- 1 line space is left -

The detection of biogenic amines such as histamine, tyramine, agmatine, putrescine, cadaverine, spermine and spermidine is important not only because of their toxic effects, but also as an indicator of the degree of freshness or spoilage of foods [11].

- 1 line space is left -

Biogenic amines are aliphatic, alicyclic and heterocyclic organic bases with small molecular masses, whose amounts increase as a result of metabolic processes in animals, plants and microorganisms; biogenic amine formation begins with the separation of alpha carboxylic group from an amino acid. Most of the biogenic amines are named after the amino acid from which they originate. Histamine, tyramine, tryptamine and 2-phenylethylamine in the monoamine group are composed of histidine, tyrosine, tryptophan and phenylalanine, respectively. Putrescine and Kadeverin are diamines and are composed of the amino acids ornithine and lysine. Putrescine is the precursor compound of the polyamines spermine and spermidine. These amines can be produced by raw material-specific decarboxylase activity, but also by enzyme activity of decarboxylase positive microorganisms under favorable conditions [12, 13]. **when citing a literature with more than one author, et al. THE PHRASE "ET AL." SHOULD BE USED)**

- 1 line space is left -

It has been reported that the formation of biogenic amines increases in foods with appropriate temperature (20-37 °C) and pH (5-7) and sufficient amount (>10^6 per gram) of biogenic amine-forming microorganisms, but the formation of biogenic amines decreases if the salt content is more than 5% (Beutling, 1996). The formation of biogenic amines causes an increase in pH. It is thought that the formation of biogenic amines against the increase in acidity at a level that will affect the viability of microorganisms is necessary for the continuation of development and viability. The results obtained according to the studies show that the increase in acidity affects the formation of biogenic amines in different types of cheeses. These results support the theory that bacteria form biogenic amines as a protective mechanism against acidic environment. [14].

At the end of the literature summary, the purpose of the report, consisting of at least one paragraph under the title AIM OF THE REPORT, should be explained, numbered and given in the table of contents.

Each new main section must start on a new page

One of the titles "Experimental Section" or "Materials and Methods" is preferred

3. MATERIAL AND METHODS

- 1 line space is left -

3.1. Material

The research material consisted of a total of 90 samples of tarhana, home yogurt and crispy tarhana from Kahramanmaraş region, which were produced at home using different methods by local people in different parts of Manisa province. Tarhana samples were kept in a cool and dry environment before and during the analysis. Yoghurt samples were delivered to the laboratory without breaking the cold chain and kept under refrigerator conditions throughout the analysis.

- 1 line space is left -

3.2. Method

- 1 line space is left -

3.2.1 Determination of Biogenic Amine

Thyramine, putrescine, cadaverine and histamine were quantified in 24 home tarhana and 35 yogurt samples collected in Manisa province and 31 crispy tarhana samples from Kahramanmaraş region according to the method reported by Eerola et al [17]. HPLC device (Perkin Elmer) and ODS2 column (5 µm, 125 x 4mm; Waters, Austria) were used for the determination of amines. Cadaverine dihydrochloride (Sigma), Histamine dihydrochloride (Sigma), Putrescine dihydrochloride (Sigma), 1,7-diaminoheptane (internal standard) (Sigma), Tyramine hydrochloride (Sigma) and dansyl chloride (Sigma) were used as standards.

3.1.2. Chemical Solutions Used

Amine Stock Solutions: The standard solution concentrations to be obtained were calculated as 1 mg free base/ml. Separate stock solutions were prepared for all biogenic amines to be analyzed [15, 16]. **(When giving more than one source, a semicolon should be placed between them.)**

- 1 line space is left -

1.7-Diamino heptane (Internal Standard): 25 mg of 1,7-diamino heptane was prepared by dissolving in 25 ml of distilled water. The concentration of this solution was calculated as 1 mg free base/ml (1000 µg/1 ml) (1000 ppm).

- 1 line space is left -

Histamine: 42 mg of histamine dihydrochloride was dissolved in 25 ml of pure water. The concentration of this solution was calculated as 1 mg free base/ml (1000 µg/1 ml).

Cadaverine: 43 mg of cadaverine dihydrochloride was dissolved in 25 ml of pure water. The concentration of this solution was calculated as 1 mg free base/ml (1000 µg/1 ml) (1000 ppm).

- 1 line space is left -

Putrescine: 46 mg putresindihydrochloride was prepared by dissolving in 25 ml of pure water. The concentration of this solution was calculated as 1 mg free base/ml (1000 µg/1 ml) (1000 ppm).

- 1 line space is left -

Each new main section must start on a new page

4. RESULT AND DISCUSSION

- 1 line space is left -

In this study, the presence of putrescine, cadaverine, histamine and tyramine biogenic amines in tarhana and yogurt samples were investigated. 1,7-diaminoheptane compound was used as internal standard for the determination of biogenic amines and calibration graphs were obtained for each biogenic amine standard. In order to determine the recovery in HPLC, a known amount of each biogenic amine standard was added to the samples containing the least biogenic amine and sampled before analysis to determine the biogenic amine quantification in the tarhanas sampled before analysis.

- 1 line space is left -

4.1. Biogenic Amine Results of Tarhana Samples

The amount of biogenic amines found in tarhana samples is at low levels. The total amount of biogenic amines detected in tarhana samples varied between 0.3 mg/kg and 15.96 mg/kg. The average total biogenic amine amount was determined as 1.81 mg/kg.

- 1 line space is left -

The recovery rates of biogenic amines in tarhana samples obtained by the applied method are given in Table 4.1.

- 1 line space is left -

Table 4.1. Recovery rates of biogenic amines in tarhana samples (%)

- 1 line space is left -

Biogenic amine	Recovery rate
Putresin	89.6
Kadaverin	84.7
Histamine	86.4
Thyramine	95.2

Each new main section must start on a new page

5. CONCLUSION

- 1 line space is left -

As a result of the study, biogenic amine quantification was examined and putrescine, cadeverin, histamine, and tyramine were analyzed in tarhana, home yogurt and cips tarhana samples, which are among our traditional fermented products. Different amounts of putrescine, cadeverine, histamine and tyramine were detected in tarhana samples. It was determined that tyramine was the dominant biogenic amine in tarhana samples. In yogurt samples, histamine and tyramine were the dominant biogenic amines. However, since all biogenic amines detected were well below the toxic level, there is no toxicological effect.

- 1 line space is left -

This study revealed that the amount of biogenic amine in homemade tarhana and yogurt samples collected in Manisa province was well below the legal limits. It was determined that the products produced by the people of the region are not at a level that may pose a health risk for biogenic amines.

- 1 line space is left -

It has been previously stated that the factors affecting biogenic amine formation are starter culture, fermentation time and the amount of free amino acids. Knowing the capacity of the starter used in tarhana production to produce decarboxylase enzyme will affect the amount of biogenic amine that may occur in tarhana. It is thought that the effect of changes in raw material on biogenic amine formation in tarhana produced by the same method is also a subject of research. In addition, the effect of the microbiological quality of the raw material on the starter culture is thought to affect the amount of biogenic amine in tarhana.

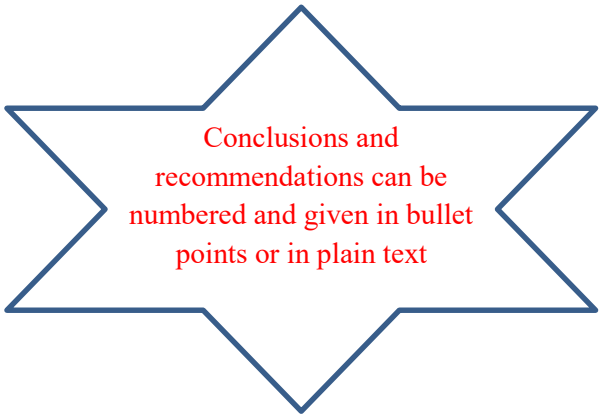
- 1 line space is left -

As it is known, the type and variety of traditional fermented products vary from region to region and there are different production methods within the same region. Especially considering the wide variety of raw materials used in tarhana production and the metabolic activities of microorganisms used for fermentation, there are differences in the quantity and quality of by-products formed after fermentation. Therefore, the types and quantities of biogenic amines detected vary. Although different levels of biogenic amine contents were detected in the tarhanas produced by the people of the region, it was determined that the amounts found were not at a level to show toxic effects.

The presence of biogenic amines in household yogurts has been investigated. However, since fermentation time and temperature were carried out under uncontrolled conditions, the effect of fermentation time and temperature on biogenic amine formation is not fully known. In further studies, the effect of fermentation time and fermentation temperature on biogenic amine formation should be investigated.

- 1 line space is left -

Since there is no standard method for the production of crisps tarhana, it is difficult to determine the factors affecting biogenic amine formation. For this reason, studies should be carried out to determine a standard method for the production of chips tarhana and the factors affecting the formation of biogenic amines should be revealed in subsequent studies.



REFERENCES

1 line space is left

For books;

Last name, first initial, Last name, first initial. Title of the Book. If it is an edited book, Editor's Name (given as Ed: First Name, Last Name), Printing House/Publisher Name, City, Country, Year, Number of Pages.

Francesconi, K. A., Kuehnelt, D. In Environmental Chemistry of Arsenic. Ed.: Marcel Dekker, New York, 2002, 51–94 p.

Öztan, A. Et Teknolojisi. Gıda Mühendisleri Odası Yayınları, Ankara, 2008, 526 p.

For books with legal entities;

Scientific Publishing in the 21st Century: Targets and Approaches Symposium Book. Tübitak Publications, Ankara, 2002, 153 pp.

For translated boks;

Jawetz, E., Melnick, J., Adelberg, A.E. Tıbbi Mikrobiyoloji (M. Akman and E. Gülmezoğlu, Trans.). Ankara, Hacettepe University Publications, 1972, 144 pp.

For Articles;

Last name, first initial, Last name, first initial. Article title. Full name of the journal. Year, Volume (issue), first page-last page.

Ergönül B., Kundakçı, A. Microbiological attributes and biogenic amine content of probiotic Turkish fermented sausage. Journal für Verbraucherschutz und Lebensmittelsicherheit. 2011, 6(1), 49-56.

Bayrak, A., Kıralan, M. Antioxidant storehouse spices. Popular Science. 180, 46-50.

For unpublished studies;

Last name, first initial, Last name, first initial. Article title. Full name of the journal. Year, DOI number.

Ergönül B., Kundakçı, A. Microbiological attributes and biogenic amine content of probiotic Turkish fermented sausage. Journal für Verbraucherschutz und Lebensmittelsicherheit. 2011, DOI:10.1108/03090560710821161.

Thesis and other studies;

Thesis

Surname, First Name, Title of the thesis. University, Name of the Institute, Department, Province of the Institute, Year, number of pages. (Doctoral Thesis / Master's Thesis).

Ergönül, B. Investigation of the Possibilities of Using Probiotic Cultures in Meat Products. Manisa Celal Bayar University, Institute of Science and Technology, Department of Food Engineering, Manisa, 2009, 213 p. (Doctoral Thesis).

Other studies

Surname, first letter of the name. Name of the work. Name of the institution. Place, Year, Number of pages

Acar, N., Estaş, S. Kesikli Seri Üretim Sistemlerinde Planlama ve Kontrol Çalışmaları, Milli Prodüktivite Merkezi Yayınları, Ankara, 1986, 356s.

For congresses, symposiums and workshops;

Surname, first name, last name, first name, title of the paper. Name of the Congress/Workshop/Symposium, Date, Year Location (if the presentation is a published paper, Abstracts/Book of Papers, 173-179.

Ergönül, B., Kundakçı, A. Additives Used in Meat Products Production. 2nd Meat Products Workshop, March 13-17, 2014, Manisa (Book of Abstracts, 174 pp.

Patent

Kavur, K.H. Heart Flowerpot. US Patent No. D518,755. Washington DC, US Patent and Trademark Office, 2006.

APPENDIX

APPENDIX A. (Title, related topic)

APPENDIX B. (Title, related topic)

APPENDIX C. (Title, related topic)

Appendixes are written with 1 line spacing. Leave 1 line space after the title of the appendises and after each explanation. The font size is 12 point Times New Roman

If figures, symbols, tables, etc. are given in the appendixes, they should be written in the relevant sections of the report with the numbers following the section titles (Abbreviations, symbols, index of figures or index of tables)

As Figure Annex A.1, Table Annex B.3

CV

1 line space is left

1 line space is left

Name Surname : Name SURNAME (fill here)

1 line space is left

Place and Year of Birth : Manisa, 1987

1 line space is left

Marital Status : Married

1 line space is left

Foreign Language : English

1 line space is left

e-mail : eposta@cbu.edu.tr

1 line space is left

1 line space is left

Education Status

1 line space is left

High School : xxxxx High Scholl, 20...

1 line space is left

Undergraduate : xxxxxx University, xxxxx Department, 20...

1 line space is left

Master Degree : xxxxxx University, xxxxx Department, 20...

1 line space is left

1 line space is left

Professional Experience

1 line space is left

Institution information 2007-2011

1 line space is left

Institution information 2011-2014

1 line space is left

Institution information 2014-…….. (sontd.)

1 line space is left

1 line space is left

Publications (If available)

1 line space is left

The author should follow the spelling rules in the Reference section when entering information about his/her works. 1 line space should be left between the works