



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

**BSc ENVIRONMENTAL HEALTH AND FOOD
SCIENCE**

FINAL EXAMINATION PAPER 2015

TITLE OF PAPER : FERMENTED FOODS

COURSE CODE : EHM 424

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS
CAREFULLY

: ANSWER ANY FOUR (4) QUESTIONS

: EACH QUESTION CARRIES 25 MARKS.
: WRITE NEATLY & CLEARLY

BEGIN EACH QUESTION ON A SEPARATE
SHEET OF PAPER.

STATISTICAL TABLES WILL BE PROVIDED

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS
GRANTED BY THE INVIGILATOR.**

Question 1

Write short notes on any five (5) major ingredients that are used in manufacture of fermented sausages. [25 Marks]

Question 2

Explain how the use of starter culture ensures that safe, improved nutritional, increased economic value and of enhanced sensory products are manufactured on a timely and predictable schedule, with consistent and repeatable qualities. [25 Marks]

Question 3

- (a) What is the effect of using high brine (> 5%) concentration during the process of fermentation of pickles? [5 Marks]
- (b) Give reasons why pseudomonas, fungi and other microorganisms that are initially present in the raw material fail to grow once the fermentation of vegetables begins. [5 Marks]
- (c) Briefly account for why *Enterococcus* sp are rarely used in fermented foods. [5 Marks]
- (d) The manufacture of Sauerkraut involves stages like mixing, fermentation, end product, packaging and processing. Give a detailed description of the aspects involved during the stages of fermentation of sauerkraut. [10 Marks]

[25 Marks]

Question 4

- (a) Write short accounts of any five (5) listed ingredients/components in bread making,
- (i) Sugars [2 Marks]
 - (ii) Enzymes [2 Marks]
 - (iii) Fat [2 Marks]
 - (iv) Yeast nutrients [2 Marks]
 - (v) Vitamins [2 Marks]
 - (vi) Dough improvers [2 Marks]
 - (vii) Biological preservatives [2 Marks]
 - (viii) Emulsifiers [2 Marks]
 - (ix) Gluten [2 Marks]
- (b) What are the factors that influence growth of *Sacharomyces cerevisiae* during fermentation of bread? [5 Marks]
- (c) What are the major differences between Staling and Biological spoilage in bread? [10 Marks]

[25 marks]

Questions 5

- (a) Discuss the role Malting, Mashing, Fermentation and Post-Fermentation and their contribution to the beer quality during manufacturing [20 Marks]
- (b) What are the main differences between an ale and lager beer? [5 Marks]

[25 marks]