

PROCESSING OF ANIMAL FOODS

THEORY

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| Paper No. | : | 10 |
| Maximum Marks | : | 150 |
| Credits | : | 4 |
| Teaching Period | : | 4 Theory + 1 Student's Presentation |
| Teaching Load | : | 48 Theory Periods + 12 Student's Presentation |

Objectives:

- To study processing and preservation of animal foods.
- To understand technology behind preparation of various animal food products and by-product utilization.

UNIT 1 – PROCESSING OF MEAT AND MEAT PRODUCTS

Refrigeration and freezing of meat, thermal processing- canning of meat, retort pouch, dehydration, irradiation, and RTE meat products, meat curing. Sausages- processing, types and defects. **(Chapter 3,9,15 Pearson and Gillet, Chapter 7,8 Lawrie) (8 lectures)**

Importance, classification and uses of meat by-products, Manufacture of Natural casings **(Chapter 11,Pearson &Gillet) (3 lectures)**

(1 lecture)

Trends in meat packaging.

UNIT 2 – PROCESSING OF FISH

Principles of canning , classification based on pH groupings, effect of heat processing on fish, storage of canned fish, pre-process operations, post process operations, cannery operations for specific canned products.(Tuna,Mackerel,Sardine) **(Chapter 5, Hall) (4 lectures)**

Introduction, fish muscle proteins, the surimi process, traditional and modern surimi production lines, quality of surimi products, comparison of surimi and fish mince products.**(Chapter 3, Hall) (4 lectures)**

Fish protein concentrates (FPC), fish protein extracts (FPE), fish protein hydrolysis (FPH) **(Chapter 6, Hall) (2 lectures)**

Flowchart of Indigenous products- Fish sauce and Paste. **(Chapter 7, Hall) (2 lectures)**

UNIT 3 – PROCESSING OF MILK AND MILK PRODUCTS

Flow diagram of milk processing, Filtration, Clarification, Homogenization, Pasteurization, Description and working of clarifier, cream separator, homogenizer and plate heat exchanger. **(6 lectures)**

Flow diagram of following milk products – Butter, ghee, flavored milk, yoghurt, dahi, shrikhand, ice-cream, condensed milk, milk powder, channa, paneer, cheese (cheddar).
(Chapter 1-11, Sukumar De) (6 lectures)

UNIT 4 – EGG PRODUCTION PRACTICES AND PROCESSING OF EGG

Egg Industry and Egg Production Practices, General management of a layer house.
(Chapter 2, Stadelman) (6 lectures)

Preservation of eggs, Refrigeration and freezing, thermal processing, dehydration, coating.
(Chapter 11 and 14, Stadelman) (6 lectures)

Recommended Readings

1. Hall GM, Fish Processing Technology, VCH Publishers Inc., NY, 1992
2. Sen DP, Advances in Fish Processing Technology, Allied Publishers Pvt. Limited 2005
3. Webb and Johnson, Fundamentals of Dairy Chemistry, Jain publications, second edition, 2005
4. Lawrie R A, Lawrie's Meat Science, 5th Ed, Woodhead Publisher, England, 1998
5. Pearson & Gillet Processed Meats, 3 Ed, CBS Publication, New Delhi, 1997
6. Shai Barbut, Poultry Products Processing, CRC Press 2005.
7. Stadelman WJ, Owen J Cotterill Egg Science and Technology, 4th Ed. CBS Publication New Delhi, 2002
8. De Sukumar, Outlines of Dairy Technology, Oxford University Press, Oxford. 2007

PRACTICALS IN ANIMAL FOODS

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|------------------------|---|--------------------|
| Maximum Marks | : | 50 |
| Credits | : | 2 |
| Teaching Period | : | 4 / Week |
| Teaching Load | : | 48/Semester |

CONTENTS

1. To prepare casein and calculate its yield.
2. Cut out examination of canned fish.(Sardine, Mackerel, Tuna)
3. Cutout analysis of canned meats/retort pouches/Analysis of frozen meat.
4. To study shelf-life of eggs by different methods of preservation.
5. To study the functional properties of egg.
6. Preparation of flavored milk/milk product.
7. Meat/Fish/Poultry/Egg product formulation.
8. Quality analysis of the formulated product.

Recommended Readings:

1. Hall GM, Fish Processing Technology, VCH Publishers Inc., NY, 1992
2. Pearson & Gillet Processed Meats,3 Ed, CBS Publication, New Delhi, 1997
3. Shai Barbut,Poultry Products Processing,CRC Press 2005.
4. Stadelman WJ, Owen J Cotterill Egg Science and Technology, 4th Ed. CBS Publication New Delhi, 2002
5. De Sukumar, Outlines of Dairy Technology, Oxford University Press, Oxford. 2007