

PRINCIPLES OF FOOD PROCESSING AND PRESERVATION

SUBJECT CODE : FTC306

FULL MARKS-100 (80+20)

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RATIONALE

Knowledge and skills related to food processing and preservation are essential for the diploma holder in food technology. In this subject, students are exposed to various techniques of food preservation such as low temperature, high temperature, moisture removal, chemicals and radiation preservation. Relevant skills will also be imparted through this subject

DETAILED CONTENTS

- 1. Scope and trends in food industry (08 hrs)**
Status of Indian food industry with emphasis on State of Haryana. Definition of food – food technology, food science, food preservation and food engineering – basic considerations. Importance of food processing and preservation. Classification of foods on the basis of shelf life, pH, origin; Different types of food spoilage viz. microbiological, bio-chemical, chemical, physical and their effects on food quality. Principles of food preservation.
- 2. Preservation by sugar and salt (05 hrs)**
Principles of Salt and sugar preservation, Intermediate Moisture Food (IMF) like jam, jelly and marmalade. Techniques of pickling.
- 3. Preservation by Low Temperature (06 hrs)**
Low temperature required for different foods – refrigeration – refrigeration load, refrigeration systems; slow and fast freezing, freezing process; types of freezer advantages and disadvantages of freezing; storage and thawing of frozen food.
- 4. Preservation by High Temperature (06 hrs)**
Pasteurization, Sterilization, Canning: their Definition, Method, advantages and disadvantages.
- 5. Moisture Removal (10 hrs)**
Evaporation, concentration, drying and dehydration, types of dryers, advantages and disadvantages, selection of dryers
- 6. Food Additives including Chemical Preservatives- (07 hrs)**
Classification, functions and uses in foods
- 7. Preservation of foods by Radiation (06 hrs)**
Irradiation of foods, Radiation doses for spices, onions, potatoes and meat. Concept of microwave heating effect on food Quality

PRINCIPLES OF FOOD PROCESSING AND PRESERVATION LAB

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LIST OF PRACTICALS

1. Study of changes in fruits/vegetables during storage
2. Peeling of fruits and vegetables
3. Preparation of brine and syrup
4. Blanching of seasonal fruits and vegetables
5. Dehydration of fruits & vegetables
6. Preparation of fruit bars
7. Freezing of seasonal vegetables, meat and fish products
8. Preparation of Jam, Jelly & squash
9. Pickle preparation
10. Storage of frozen products
11. Preparation of sauerkraut
12. Visit to fruits and vegetable industry to see above operations

RECOMMENDED BOOKS

1. Food Science by NN Potter, CBS publishers, New Delhi
2. Technology of Food Preservation by Desrosier, The Avi Publishing Company, Inc., Westport
3. Principles of Food Science Vol. – I by Fennema, Karrel, McGraw-Hill Book Company, New York
4. Preservation of Fruits and Vegetables by Girdhari Lal, Sidhapa and Tandon, CBS Publishers, Delhi
5. Hand book of Analysis of Fruits and Vegetables by S Ranganna, Tata Me Graw-Hill. Publishing Company, New Delhi
6. Fruits and Vegetable Processing by Cruss, Oxford and IBH Publishing Co., New Delhi
7. Food Science by Mudambi, New Age International Pvt Ltd Publishers, New Delhi
8. Basic Food Preparation(Manual)
9. Fruit & Vegetable Processing by Bhatt, Verma, Tata Mc Graw Hill Publishing Company Limited,. New Delhi
10. Commercial Vegetable Processing by Woodroof, vannostrand Reinhold, New York
11. Preservation of Fruits & Vegetables by IRRI, Oxford & IBH Publishing, New Delhi
12. Food Canning Technology by Larcousse & Brown
13. Food Composition & Preservation by Bhawna Sabarwal, Commonwealth Publishers 1999, New Delhi.
14. Food Preservation by S.K. Kulshrestha, vikas *publishing* house Pvt. Ltd., New Delhi
15. Processing Foods by Oliverra, CRC Press, New York
16. Principles & Practices for the Safe Processing of Foods by Heinz, H J *Heinz* Company, UK