

**I-Year, II-Semester**

**L      T      P      Credits: 4**  
**3      1      -**

## **CH554 ANIMAL PRODUCT TECHNOLOGY**

(Fish, Meat, Poultry & Dairy products)

### **UNIT-I**

Sources of meat and meat products in India, its importance in national economy. Chemical composition and microscopic structure of meat. Effect of feed, breed and management on meat production and quality. Slaughtering of animals and poultry, inspection and grading of meat. Factors affecting post-mortem changes, properties and shelf life of meat. Meat quality evaluation. Mechanical deboning, meat tenderization. Aging, pickling and smoking of meat. Meat plant sanitation and safety, byproduct utilization.

### **UNIT-II**

Poultry: classification, composition, preservation methods and processing. Structure, composition, nutritive value and functional properties of eggs and its preservation by different methods. Processing of egg products. Factors affecting egg quality and measures of egg quality. Types of fish, composition, structure, post-mortem changes in fish. Handling of fresh water fish. Canning, smoking, freezing and dehydration of fish. Preparation of fish products, fish sausage and home makings.

### **UNIT-III**

Fish products - production of fish meal, fish protein concentrate, fish liver oil and fish sauce and other important byproducts; Quality control of processed fish; Fish processing industries in India.

**Milk processing:** Milk processing flow sheet – Filtration / clarification, Storage of milk, Standardization – simple problems in standardization, Homogenization, pasteurization – types of pasteurization process. Equipments used in each process - Cream separating centrifuges, Pasteurizers (Heat Exchangers), Homogenizers, Bottle and pouch fillers, Milk Chillers, Plant piping, Pumps.

### **UNIT-IV**

Manufacture of dairy products: Manufacture of Cream, Butter, Ghee, Milk powder, Cheese – types and defects in cheese. Quality aspects of these products. Equipments used for manufacture of each product like butter, churn, ghee. Boiler, Spray and Drum Dryers, Product instantizing equipment etc.

### **UNIT-V**

Manufacture of Ice Cream and other dairy products. Manufacture of Ice cream – Chemistry and technology – Microbiology of ice cream – Quality aspects. Manufacture of paneer, Toned Milk, Sweetened condensed milk, Khoa. Fermented dairy products: Fermented products – Yoghurt, curd, acidophilus milk, butter milk. dairy plant sanitization – Cleaning in place – bottle and can washing, cleaning of tankers and silos – Detergents and sanitizers used. Energy use in Dairy plant - sources and cost of energy, Control of energy losses and energy conservation. Quality control of milk and milk products; Milk plant hygiene and sanitation

**Text Books:**

1. Lawrie, R.A. 1975. Meat Science, 2nd Edn. Pergamon Press, Oxford UK.
2. Vijaya Khader, 2001, "A Textbook of Food Science and Technology", ICAR, New Delhi.
3. Modern Dairy Products, Lampert LH; 1970, Chemical Publishing Company

**References:**

1. Developments in Dairy Chemistry – Vol 1 & 2; Fox PF; Applied Science Pub Ltd.
2. Milk & Milk Processing; Herrington BL; 1948, McGraw-Hill Book Company.
3. Portsmouth, J.I. 1979, Commercial Rabbit Meat Production. 2nd Edn. Saiga Survey, England