

Logo

106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, 23845654, 23845886, +918800733955
Mobile: +91-9811043595
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co

The Complete Technology Book on Dairy & Poultry Industries With Farming and Processing (2nd Revised Edition)

Code: NI62	Format: paperback
Indian Price: ₹1275	US Price: \$125
Pages: 720	ISBN: 9789381039083
Publisher: NIIR PROJECT CONSULTANCY SERVICES	

Description

Dietary habits of people have changed over the last few decades. Growing consciousness for protein rich food has given an impetus to both the dairy industry and poultry farming. Today, the dairy industry is a large organized sector with both private and government participation whereas poultry farming has indicated a rapid growth of 20% in the past few decades as well. Poultry is one of the fastest growing segments of the agricultural sector in India today. The production of agricultural crops has been rising at a rate of 1.5 to 2 % per annum that of eggs and broilers has been rising at a rate of 8 to 10 % per annum. From a backyard hobby it has culminated into an industry. The venture has largely been entrepreneurial and poultry farmers prefer to target their efforts to breeding & broiler farming for sale of ready broilers or layer farming for eggs. Poultry is the second most widely eaten meat in the world, accounting for about 30% of meat production worldwide. Dairy plants process the raw milk they receive from farmers so as to extend its marketable life. India has only a few specialized dairy farms. It is the production that characterizes the dairy industry. India is the worlds highest milk producer and all set to become the worlds largest food factory. Dairying is an important source of subsidiary income to small/marginal farmers and agricultural labourers. The manure from animals provides a good source of organic matter for improving soil fertility and crop yields. Since agriculture is mostly seasonal, there is a possibility of finding employment throughout the year for many persons through dairy farming. Thus, dairy also provides employment throughout the year. The main beneficiaries of dairy programmes are small/marginal farmers and landless labourers. Developments in the dairy and poultry industries during the last decade have been important enough to bring out a considerable amount of materials

on dairy and poultry farming; processing of milk and poultry related products. The major contents of the book are dairy farming, poultry production, breeding, fertility, forage grass and concentrates, cow behaviour and health, manufacture of butter and cheese, process measurements and controls, components of poultry diets etc. This book also describes about the feed manufacturing process, butter and cheese manufacturing processes with diagrams, housing system and management of broilers and more.

The first book of its kind which covers complete details of dairy and poultry farming, processing how to feed cows, birds in dairy and poultry, kind of diseases and their cure and other information related farming. This book will be an invaluable resource to dairy and poultry technology, institutions and for those who want to venture in this field.

Content

1. Dairy Farming

Management of Dairy Stock

Pre-natal and Post-natal

Weaning

Care of Weaned Calf

Feeding Schedule for Calves on Calf-starters

Factors Affecting Maturity

Care During Parturition

Post-parturition Care

Frequency of Calving

Secretion of Milk

Factors Influencing Secretion

Composition of Milk

Water

Fat

Casein

Albumin

Globulin

Non-protein Nitrogenous Substances

Lactose

Minerals

Enzymes and Vitamins

Milk Flavours

Variation in the Composition of Milk

Properties of Milk
Specific Gravity
Density
Refractive Index
Viscosity
Surface Tension
Freezing Point
Heat Stability of Milk
Testing of Milk
Milk Sampling
Milk-fat
Adulteration of Milk
Urea
Ammonium Sulphate
Glucose
Freezing Point of Test
Bacteriology of Milk
Public Health Aspects of Milk and Milk Products
Detection of Bacterial Contamination
Use of Detergents for Cleaning of Utensils
Cleaning In-place (CIP)
Washing and Sterilization of Utensils
Judging the Quality of Milk
Clot-on-boiling Test.
Alcohol Test.
Methylene Blue Reduction Test
Processing of Milk
Cooling Media
Storage of Chilled Milk
Clarification of Milk
Homogenization
Standardization of Milk
Pasteurization
Holder Method.
High Temperature Short Time (HTST) Method.
Operation of the Plant.
Cold Storage
Uperization Process
Aseptic Filling Process
Sterilized Milk

Supply of Milk to Customers
Dispensing in Cans.
Dispensing in Bottles
Single Service Containers
Storage of Bottle Milk
Transport of Pasteurized Milk
Milk Products
Cream
Cream Separators
Pasteurization of Cream
Vacreation
Sterilized Cream
Curd (DAHI)
Starter Cultures
Butter
Desi Butter
Creamery Butter
Ghee
Prestratification Method
Manufacture of Butter-oil
Condensed Milk
Milk Powder
Infant Food
Weaning Food
Humanized Infant Food
Khoya
Ice-cream
Softy Ice-cream
Milk Shake
Lassi
Acidophilus Milk
Chhana
Cheese
Processed Cheese
Shrikhand
Lactose
Casein
Milk Supply Schemes
Indian Dairy Corporation
Operation Flood Project

Marketing of Milk and Milk Products

Research in Dairying

Indigenous Milk Products

Whey Protein Isolates

Dairy Engineering Research

2. Breeding

Breeds of Cattle

Lyre-Horned Grey Cattle

Kankrej

Kanwariya

Kherigarh

Malvi

Tharparkar

White or Light Grey Cattle With Coffin-Shaped Skulls

Bachaur

Gaolao

Hariana

Krishna Valley

Mewati

Nagauri

Ongole

Rathi

Animals with Heavy Built and Curly Horns

Dangi

Deoni

Gir

Nimari

Red Sindhi

Sahiwal

Mysore Breeds with Prominent Foreheads and Long Horns

Hallikar

Amritmahal

Khillari

Kangayam

Alambadi

Hilly Breeds

Ponwar

Siri

New Breeds

Karan Swiss
Karan Fries
Breeds of Buffaloes
Murrah
Bhadawari
Jaffarabadi
Surti
Mehsana
Nagpuri
Nili-Ravi
Herd Book
Economic Zones
Temperate Himalayan Region
Dry Northern Region
Wet Eastern Region
Southern Region
Coastal Region
Improvement Programme
Performance Evaluation
Artificial Insemination and Embryo Transfer Technology
Meat Potential
Economics of Dairy Farming
Animal Health
Feeding of Cattle
Mineral Matter
Nutritive Requirements of Dairy Cattle for Maintenance
Nutritive Requirements for Growing Animals
Requirements for Milk Production
Nutrient Requirements for Work Cattle
3. Breeding and Fertility
Inheritance
Systems of Breeding
Practical Application
Large-scale Breeding
Evaluating a Bull for AI
Choosing an AI Sire
The Oestrus Cycle
Heat Detection
Postpartum Interval
Conception Rate

Control of Oestrus

Pedigree Cattle

Embryo Transplants

Culling

4. Cow Behaviour and Health

Grazing and Eating

Ruminating and Lying Down

Walking and Other Activities

Social Rank

Normal Health

Dung

Other Indicators

Milk Yield

Preventive Medicine

Mastitis

Cell Counts

Control Hygiene

Summer Mastitis

Milk Fever

Grass Staggers

Acetonaemia

Bloat

Lameness

Metabolic Profile Test

5. Feeding Dairy Cows

Food Constituents

Organic Matter

Digestion

Digestibility

Products of Digestion

Utilization of Digested Products

Food Energy

Dry-matter Intake

Indigestible Organic Matter

Liveweight Changes

New Protein System

Feeding

Allocation of Concentrates

Minerals

Vitamins

Relative Feed Costs

6. Forage Crops and Concentrates

Succulent Fodders

Turnips and Swedes

Mangolds, Fodder Beet and Sugar Beet

Carrots, Parsnips and Potatoes

Kale

Cabbages and Rape

Root Tops

Cereals

Forage Maize

Red Clover

Grass and Forage Crops

Comparative Yields

Straw

Straw Processing

Concentrated Foods

Energy Straights

Protein Straights

Concentrate Formulation

Fats and Oils

Urea and Biuret

Blocks and Liquid Feeds

Brewers' Grains

7. Hay and Dried Grass

Hay Making

Barn Hay Drying

Hay Quality and Feeding

Hay 'Condition'

Types of Hay

Artificially Dried Grass

Dried-grass Feeding

Dried Grass and Silage

8. Silage

Silage Fermentation

Wilting

Chopping

Additives

Filling and Sealing

Silage Quality

Silage Feeding

Tower Silage

Big-Bale Silage

Silage Effluent

9. Slurry

Composition of Slurry

The Legal Position

Moving Slurry

Slurry Storage

Short-term Storage

Long-term Storage

Earth-walled Compounds

Foul Run-off

Separators

Organic Irrigation

10. Milking and Milking Machines

Udder Anatomy

Lactation Physiology

Rate and Frequency of Milking

Milking Machines

The Cluster Assembly

Conveying the Milk

Producing Clean Milk

Cooling and Storing Milk

Maintenance and Testing

The Machine and Milking Efficiency

Milking Machines and Mastitis

11. Milking Parlours and Cowsheds

Static Parlours

Rotary Parlours

Cowsheds

Elements of the Work Routine

Parlour Performance

Selecting a Parlour

Parlour and Dairy Buildings

Cow Marshalling

12. Reception and Storage of Milk

Milk Reception

Milk Transport Tanks

Construction of Transport Tanks

Inner Construction

Storage Tanks

Silo Tank

Refrigerated Storage Tank

Process Tanks

Aseptic Tank

13. Milk Composition

Milk Constituents

Effect of Breed

Age of Cow

Stage of Lactation and Season

Type of Food

Effect of Energy and Protein

Milking Intervals

Disease

Quality Payment Schemes

Taints and Flavours

Keeping Quality of Milk

Milk in the Diet

14. Manufacture of Butter and Cheese

Butter Manufacture

Churning

Methods of Butter Making

Batch Method

Continuous Method

Fritz-Eisenreich Process

Alfa Process

Contimab Process

Anhydrous Milk Fat

Cheese Manufacture

Cheese Vats

Cheese Press

Cooling

Mechanised Cheesemaking

Curd Production

'Double O' Vat

Pasilac Cheesemaking Vat

Swiss Cheese Vat

De-wheyng and Texture Forming

Draining/Matting Conveyor

Finishing Coolers
Curd Recovery Systems
Prepressing and Mould Filling
Pressing
Horizontal Creeping or Gang Press
Vertical Press
Vacuum Press
Continuous Block Former
Packaging
Vacuum Packaging Machine
Gas-flushing Machine
Vacuum-Skin Packaging Machine
Ultra Filtration

Manufacture of Casein

15. Milk Pasteurization

Pasteurization vs. Sterilization
Reasons for pasteurization
The Time and Temperature used for Pasteurization
Commercial Methods of Pasteurization
The Efficiency of Pasteurization
Some other Effects of Pasteurization

16. Milk Sterilisation

In-bottle Sterilization
Batch Sterilization
UHT Processing
Indirect Heating Systems using Plate Heat Exchangers
Direct Heating (Injection System Type)
Fouling of Heat Exchangers
Fouling Material

Ways to Reduce Fouling

17. Creaming and Cream Separation

The Measurement of Creaming Ability
The Importance of Creaming
How Fast can Cream Rise on Milk?
The Formation of Clusters
Methods of Separation

The effect of separation temperature

18. Lactose and the Carbohydrates

The Importance of the Carbohydrates
The Composition of the Carbohydrates

Some Properties of the Sugars

Lactose

Other Carbohydrates in Milk

19. Lactose and Lactic Acid

Lactic Acid Production

The Manufacture of Lactose

Uses of Lactose

Some Physiological Properties of Lactose

20. Casein

The Manufacture of Casein

Some Properties of Commercial Casein

Coated Papers

Casein Glues

Casein Paints

Casein Plastics

Casein Fibers

Casein in Medicine and Nutrition

Other uses for Casein

21. Ice-Cream

The Importance of the Ice-cream Industry

The Composition of Ice Cream

The Ingredients of Ice Cream

The Manufacture of Ice Cream

Overrun and Dipping Losses

Some Defects of Ice Cream

22. Butter

The Location of the Butter Industry

The Grading of Butter

The Composition of Butter

The Manufacture of Butter

Accelerated Aging Tests

Butter Substitutes

23. Homogenization

Effects Produced by Homogenization

Homogenizing Machinery

The operation of Homogenizers

The Effect of Homogenization upon Various Products

Advantages and Disadvantages of Homogenization

Composition and the Effects of Homogenization

24. The Minor Constituents of Milk

Fatlike Substances

Some Physical and Chemical Properties of Lecithin

The Importance of Lecithin

The Sterols

The Vitamins

Beta Carotene and Vitamin A

Thiamin, Vitamin B1

Ascorbic Acid, Vitamin C

Vitamin D

Riboflavin, Vitamin B2 or G

Other Vitamins of Milk

The Ash Constituents of Milk

The Enzymes of Milk

Phosphatase

Amylase

Peroxidase

Lipase

Oleinase

Other Enzymes

Some Nitrogenous Constituents of Milk

Some Odds and Ends

25. Proteins

The Importance of the Proteins

The Composition of the Proteins

Some Properties of the Proteins

The Structure of the Proteins

The Amino Acids

26. The Fats of Milk

The Composition of Milk Fat

Some Physical Properties of Milk Fat

The Melting and Solidification Points of Milk Fat.

Some Factors Affecting the Composition of Fat

Chemical Changes in Milk Fat

Factors Affecting the Hydrolysis of Fat

The Oxidation of Fat

27. Process Measurements and Controls

Pressure Measurement

Bourdon Tube

Helix

Spirals

Low Pressure (Vacuum Measurement): Units of vacuum

Temperature Measurement

Solid Rod Thermometer

Bimetallic Thermometer

Filled-System Thermometer

Liquid-in-Glass Thermometer

Pressure Thermometer

Thermal System Bulbs

Mechaical Flowmeters

Bellows-actuated Flowmeters

Measurement of Total Flow

Measurment of Liquid Level

Hydrostatic Pressure

Capacitance Level Gage

Weight Measurment

Controllers

Pneumatic Controllers

Controllers

Process Control

Transmitters

Flow Transmitter

Density Transmitter

Regulating Device

28. Physical Properties of Dairy Products

Density

Over-run

Boiling and Freezing Point

Refractive Index

Acidity and PH

Rheological Properties

Viscosity

Non-Newtonian Fluids

Food Texture

Surface Properties

Foaming

Thermal Properties of Foods

Specific Heat

Latent Heat

Thermal Conductivity

Thermal Diffusivity

Electrical and Dielectric Properties
Electric Conductance
Dielectric Properties
Changes in Milk and its Constituents
Changes During Storage
Oxidation of Fat
Oxidation of Protein
Lipolysis
Effect of Heat Treatment
Fat
Protein
Enzymes
Lactose
Vitamins
Minerals
29. Poultry Production
Common Poultry Breeds
American Class
Asiatic Class
Mediterranean Class
English Class
Indigenous Breeds
Karaknath
Genetic Principles
Quantitative Characters
Dominant and Recessive Characters
Chromosomes
Inheritance of Quantitative Traits
Objective of a Breeding Programme
Basis of Selection
Selection Methods
Mating Systems
Methods of Mating
Important Economic Traits in Poultry
Egg Production
Egg Weight
Egg Quality
Body Size
Conformation
Growth

Feed Efficiency
Fertility and Hatchability
Commercial Poultry Breeding Principles and Practices
Commercial Hybrid Chicken
Breeding Systems
Performance Testing of Commercial Crosses
Culling for Better Returns
Culling from Outward Appearance
Culling on the Basis of Moulting
Culling on the Basis of Pigmentation
Hatching of Eggs
Incubation
Testing of Incubated Eggs
Hatchery Management
Sexing of Chicks
Poultry Management
Brooder Management
Grower Management
Layer Management
Male Management
Housing for Poultry
Feeding of Poultry
Minerals
Vitamins
Feed Ingredients
Conventional Poultry Feeds
Non-conventional Poultry Feeds
Energy Sources
Vegetable Protein Sources
Animal Protein Sources
Economising Feeds Cost
Processing, Preservation and Marketing
Composition and Nutritive Value of Egg
Maintenance of Shell Egg Quality
Grading
Preservation of Shell Eggs
Preservation of Liquid Eggs
Egg Marketing
Distribution Channel
Marketing Agencies

Poultry Meat

Preservation of Poultry Meat

Tenderization

Poultry by Products

Poultry Disease

30. Digestive System of Poultry

The Digestive System

Supplementary Digestive Organs

The Digestive Process

31. Nutrient Requirements of Poultry

Nutrition of Layer-type Chickens

Pre-lay Period

Nutrition of Broiler Type Chickens

Salt for Poultry-Deficiency Symptoms

Salt Levels in Poultry Diets

Salt and Trace Minerals for Poultry

Common Salt for Poultry

Trace Minerals for Poultry

Trace Mineral Mix for Layers and Broilers

32. Components of Poultry Diets

Energy and Its Definition

Disposition of Dietary Energy

Carbohydrates

Proteins and Amino Acids

Fats

Minerals

Vitamins

Water

33. Basic Ingredients in Poultry Feed and Diet Formulation

Evaluation of Feed Stuffs

Formulating Feeds with Locally Produced Raw Materials

Choosing the Right Raw Materials for Quality Feeds

Feed Production

Least-cost Formulations

Preparation of a Formulation Without
the Aid of a Computer

34. Feed Manufacturing

Economic Feasibility of Feed Plant

Is Pelleting Necessary

35. Composition of Broiler Feeds

36. Housing System and Management of Broilers

Housing Needs of Broilers

Temperature

Heat Production

Heat Loss

Heat loss

For Winter

General Characteristics of A Broiler House

Location & Salient Features of A Broiler Farms

Grower Equipments

Broiler Management

Location of the Farm

Broiler Chicks

Systems of Broiler Production

Management Procedure

Litter and litter management

Temperature

Space Requirement

Brooder Guards

Supply of Water to Chicks

Supply of Feed to Chicks

Light Management of Broilers

Light System for Broilers

Some Important Points Regarding Growth, Feed

Consumption and Efficiency of Feed Conversion in Broilers

37. Composition of Layer Feeds

Phase Feeding of Laying Hens

38. Composition of Breeder Feeds

39. Modern Hatchery for Commercial Chick Production

Location and Size of Hatchery

Administrative Block

Hatchery Building

Egg Receiving, Cleaning and Fumigation Room

Fumigation Chamber

Storage Room

Incubator Room

Hatching Room

Sexing Room

Vaccination, Packing and Dispatch Room

Washing Room

Store
Generator Room
Use of Solar Energy in Incubation and Hatching
Incubation Do's and Don'ts
40. Modern Breeds of Broiler Chicken
Plymouth Rock
Jersey Black/White Giant
Cornish
Sussex
Dorking
Indian breeds
Aseel
Chittagong
Kadaknath
Commercial Broilers
Franchise Hatcheries
41. Machinery & Equipments of Poultry Industries
42. Machinery & Equipments of Dairy Industries

About NIIR Project Consultancy Services (NPCS)

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.

NIIR PROJECT CONSULTANCY SERVICES
106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, 23845654, 23845886, +918800733955
Mobile: +91-9811043595
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co