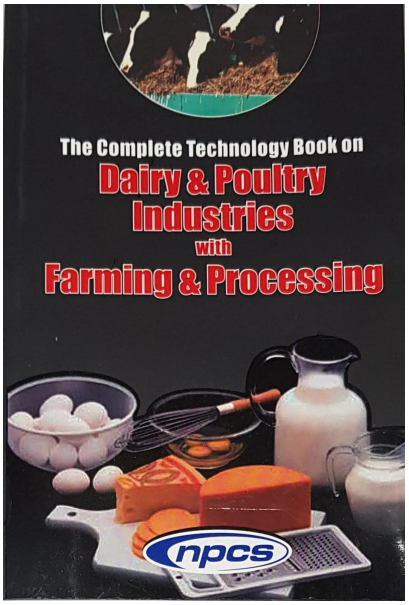
Entrepreneur India

106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, +91 9097075054
Mobile: +91-9097075054
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
CIot-on-boilingTest.
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
Eeonomic Zones
Temperate Himalayan Region
Dry Northern Region
Wet Eastern Region
Southern Region

Coastal Region
Improvement Programme
Performance Evaluation
Arttifical 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 Fermentationq
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-wheying 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
Electrial 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 or 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 andManagement 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

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.